



Regional Transit Coordination Study Final Report



COMMUTER SERVICES
OF PENNSYLVANIA

**PARSONS
BRINCKERHOFF**

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Regional Transit Coordination Study – FINAL Document

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1 Needs Investigation and Existing Conditions

1.1 Introduction

Transportation demand now stretches beyond traditional county boundaries, which is often the same boundary for its associated transit service. The purpose of the Regional Transit Coordination Study (RTCS) is to increase mobility options for the region's residents, employers, visitors and commuters through coordinated service between separate transit agencies and Commuter Services of Pennsylvania (Commuter Services). The study looks at how to better coordinate transit services provided by the different transit agencies in the nine-county region covered by Commuter Services.

The results of the study will chart a course for coordinated regional transit service for the immediate future, and also address how the transit providers can work together to provide greater opportunities for inter-county mobility for residents, commuters, visitors and businesses in South Central Pennsylvania.

The study is sponsored by the Pennsylvania Department of Transportation (PennDOT) through the Berks Area Regional Transportation Authority (BARTA) and the nine participating counties as shown in **Figure 1-1** below: Adams, Berks, Cumberland, Dauphin, Franklin, Lancaster, Lebanon, Perry, and York.

Figure 1-1. Study Area



This project is intended to facilitate the planning and implementation of regional transit service and other “Smart Transportation” options. The benefits include congestion mitigation, air quality improvement, greater transit access for area residents, increased ridership, and ultimately
















an increase in mobility options which will provide quality-of-life benefits for all who live and work in the region.

The first task of the study was a needs investigation of the current transit systems in the nine county study area. In order to evaluate the current transit conditions and potential solutions, public and stakeholder participation was an integral part of the process.

1.2 Study Leadership

Members of the Susquehanna Regional Transportation Partnership (SRTP), the Board of Directors for Commuter Services, served as the Joint Study Committee (JSC), directing the study's progress. This Board included the stakeholders whose input was required, including representatives of the transit agencies: Adams County Transit Authority (ACTA), Berks Area Regional Transportation Authority (BARTA), County of Lebanon Transit Authority (Lebanon Transit), Red Rose Transit Authority (Lancaster), York County Transportation Authority (rabbittransit), Capital Area Transit (CAT, Cumberland-Dauphin-Harrisburg); the Metropolitan Planning Organizations (MPOs): Lancaster, Lebanon, Reading Area and York MPOs, the Harrisburg Area MPO (Cumberland, Dauphin and Perry counties); and the Adams and Franklin Counties' Rural Planning Organizations (RPOs). One board seat is also set aside for a corporate executive. **Figure 1-2** lists the specific agencies that are involved.

Figure 1-2. RTCS Joint Study Committee

	Capital Area Transit (CAT) 	Lebanon County Planning Department 
Adams County Transit Authority 	Franklin County Planning 	Tri-County Regional Planning Commission 
Adams County Office of Planning and Development 	Lancaster County Planning Commission 	York County Transit Authority 
Berks County Planning Commission 	Red Rose Transit Authority (Lancaster County) 	York County Planning Commission 
Berks Area Regional Transportation Authority 	County of Lebanon Transit 	

1.3 Study Purpose

With input from the JSC as well as the first Transit Roundtable (see Section 1.7 for more details on this outreach method), the following was developed to describe the need for and importance of this study:

As the current regional trends in jobs and housing continue, the need for innovative transportation solutions increases all the while Pennsylvania's transportation needs exceed the funding that is available. The resulting situation has transportation demand stretching beyond traditional county boundaries and their associated transit services and presents a challenge to fund transportation solutions to meet these mobility needs. This study seeks to identify a range of opportunities for choices and efficiency through better transit service coordination including extensions of existing service, and through greater availability of passenger amenities to support transit service such as park and rides.

SRTP member agencies and their respective counties are ready and willing to work together to implement improvements that support regional transit service to provide additional mobility options for the region's residents, employers, visitors and commuters. Through coordinated service between separate transit agencies as well as Commuter Services, a series of short-, mid-, and longer-term opportunities for regional transit service coordination will serve as a model for other coordinated transit services in Pennsylvania.

Potential benefits to be provided through regional transit coordination include:

- Increased mobility choices for residents, commuters and visitors
- Employers' ability to draw from a larger recruiting area
- Reduced congestion
- Improved air quality
- Cost savings from eliminating redundancies in service
- Enhanced quality of life

Building on local partnerships, and embodying PennDOT's Smart Transportation principles which can be found in **Appendix A - Exhibit A-3**, SRTP is eager to shape regional perspectives on transit coordination through a variety of modes and solutions ranging from express bus to carpools and vanpools. The implementation of corridor solutions requires a process that looks beyond an individual county's needs and identifies a plan to address possible barriers such as organizational framework, legislation and funding, and community support.

1.4 Study Goals

The Joint Study Committee also provided input on the following goals, which were developed as statements to support the study's purpose:

1. Define and address the regional mobility needs of residents, employers, visitors and commuters throughout the nine-county study area.

2. Document gaps in existing transportation services with the aim of maximizing opportunities for seamless regional connectivity between systems efficiently and cost-effectively.
3. Facilitate the development of a regional growth rate that reflects transit supportive land uses for application in comprehensive plans.
4. Describe unmet needs, both presently and anticipated in the future, based upon expected population and employment growth.
5. Identify opportunities for route restructuring, multimodal travel and other service planning modifications to encourage regional transit trip-making and reduce barriers to cross-system connections.
6. Establish a process for coordinated and multi-agency approach for route-evaluation that includes methods for coordinating short-term operating decisions with long-term goals and objectives.
7. Produce cost estimates for operating scenarios in ways that create a more consistent approach for estimating capital and operating costs across properties.
8. Apply, where possible, Smart Transportation principles to key selected corridors.

1.5 Study Stakeholders

Four stakeholder groups were identified for this project and targeted to receive information and education early in the planning process in order to involve them at critical stages for public input. These stakeholders were identified with the assistance of the JSC. General categories of additional stakeholders include the following:

- **Large employers** including entities supporting economic development and tourism
- **Additional staff representatives** of transit agencies participating in this regional coordination study
- **County Commissioners** in the nine-county area
- **Citizens-at-Large**

The project team built on the existing Commuter Services database to include representatives from the additional stakeholders identified above. Before any outreach was begun, a review of all recent available data collected by the transit agencies, MPOs and Commuter Services was conducted, including the market research conducted by Commuter Services in both 2007 and 2010. This information was the baseline against which results of public outreach was compared.

1.6 Stakeholder Interviews

At the outset of the project, with the assistance of the Joint Study Committee, a formal list of project stakeholders was identified representing all nine counties of the study area. A total of 30 interviews were conducted in late summer-fall 2010. The interviewees represented a variety of

interests including major employers, chambers of commerce, visitors bureaus, and economic development agencies. The purpose of these interviews was to gather critical information on the potential concerns, opinions, and issues they have about existing transit service, facilities, and the study. Information gleaned from these interviews forms the basis of the preliminary Purpose Statement and Study Goals. The specific corridors identified also provided input to the transit corridors that were proposed and examined at the first Transit Roundtable.

The questions used in these discussions included:

1. What regional transit connections do you think are needed across major corridors in the study area (be specific)?
2. What are the 3-5 most important issues or opportunities that the regional transit coordination plan should address (e.g., overcoming legal impediments to expand service outside of the transit agency's existing service area)?
3. In your opinion, what would be the most important results or major impacts from the regional transit coordination plan, for both the short-term and the long-term?
4. How can we make sure that the recommendations from the regional transit coordination plan will receive the support of your County Commissioners or Board of Directors (if a transit agency)?
5. How can local transit and MPO officials best work with you to ensure that the recommendations of the regional transit coordination plan are implemented?
6. In your opinion, what is the best way to get the people you serve to ride the bus or use carpools/vanpools (and get them out of single occupant vehicles)?

Reaching out to these key stakeholders helped the project team better understand the current transportation issues and needs of the counties and transit agencies in South Central Pennsylvania. The results of these interviews were summarized and used to identify potential inter-county transit corridors in the region.

The stakeholder interviews provided over 27 regional corridors of interest, however, not all of them were contained in the study area. Express services, multimodal linkages and additional park and rides were some of the regional desires. A key point that was emphasized was the need to make coordination of transit schedules and fares seamless across the various systems. Some of the main challenges identified included funding, widely available subsidized or free parking, and the efficiencies of single occupant vehicles (SOVs) versus transit. There was a general understanding from the stakeholders of the land use and transportation linkage and perceived "turf issues" between transit agencies.

1.7 Transit Roundtables

After the stakeholder interviews, the first Transit Roundtable discussion was held on December 14, 2010. The purpose of this event was to involve a greater number of stakeholders in the process of providing more regional transit options. The participants of the dialogue were from

the Joint Study Committee, stakeholders who were interviewed and the large employers from various counties. The format consisted of presentations followed by small group discussions.

First Transit Roundtable Summary

Over 60 stakeholders participated in the RTCS Transit Roundtable, a half-day workshop held at the Harrisburg Area Community College (HACC). The purpose of the Transit Roundtable was to review the work done to-date on the RTCS and present initial findings to a large group of transportation stakeholders in the region. A list of attendees can be found in **Appendix A – Exhibit A-6**.

The meeting began with a presentation about transportation and demographic trends for the nine county study area (maps depicting these trends can be found in Chapter 2 of this document). Participants were also briefed on the results of stakeholder interviews conducted with major employers, chambers of commerce, visitors' bureaus, economic development agencies, and others. The presentation concluded with an overview of ten corridors identified by the consultant team as being potentially suitable for regional transit service coordination. All of these corridors cross county boundaries and involve multiple transit agencies. A detailed description of the methodology used to develop these maps as well as the maps themselves can be found in Chapter 3.

Participants then broke into five small groups to further refine the ten preliminary corridors. They were asked to comment on the route, existing and potential park and rides, origins and destinations, developing areas, and how to encourage drivers to get out of their cars and onto the transit system. A complete list of comments generated in the small group discussions can be found in **Appendix A – Exhibit A-7**. Several structural or systemic issues were raised by all the small groups. These challenges include schedule and fare coordination, marketing and education, and the need for funding to support these services.

At the end of the roundtable, the consultant team was charged with refining the corridors based on the comments, and developing a methodology for prioritizing which corridors should move forward. In addition, a webinar was recorded summarizing the event and available on the project's website for public viewing. A second transit roundtable was scheduled for April 2011.

Second Transit Roundtable Summary

The RTCS Roundtable #2 also had over 60 stakeholders that participated in a half-day workshop held at HACC on April 11, 2011. The purpose of the Transit Roundtable #2 was to involve more stakeholders in a discussion focused on the opportunities and barriers associated with the implementation of regional transit service.

The meeting began with an overview to familiarize the participants of the issues to be addressed and the overall purpose of the study. After a brief recap of the ten corridors identified for potential new or enhanced transit service, discussion turned to the criteria used to categorize the corridors in terms of their readiness for implementation: short-, mid- or longer-term. Among the many factors used to evaluate the corridors, the potential for future population growth in the

area, the availability of incentives to promote transit, and ease of implementation were deemed most important.

Several barriers to implementation identified in the first transit roundtable were presented. These barriers were generally categorized into three types: 1. Organizational Framework, 2. Legislative and Funding, and 3. Community Partnerships. Discussion then turned to several strategies other regions had used to overcome these barriers. Through discussions and review of public materials, the consultant team examined over one dozen regions and shared with attendees a series of relative “best practices” from other regions of the US.

Participants were then split into three small groups to further explore how or if the identified best practices could be adapted to suit the needs of the transit agencies and their partners in South Central Pennsylvania. Some highlights:

- The need for clear communication was identified by every group. A public education campaign highlighting the benefits of transit to individuals, the environment and the region needs to be undertaken.
- Several groups discussed how the younger generation was much more willing to use transit as part of a green lifestyle, but it needed to make sense, particularly as it relates to automobile travel.
- Transit agencies need to identify real and lasting benefits for the business community before approaching them.
- Political will is needed to help county or city-based systems look beyond their geographic constraints. Separate funding for facilitating regional transit coordination is needed in legislation, with local political support.
- All of the groups identified the Susquehanna Regional Transportation Partnership as a key player and the logical facilitator of activities moving forward.

A more detailed summary of the breakout groups’ discussions can be found in **Appendix A - Exhibit A-9**.

At the end of the roundtable, the consultant team was charged with recommending which strategies were deemed the most appropriate for the region and to develop a replicable template for implementation of regional transit service coordination.

2 Existing and Future Conditions

Simultaneously with the stakeholder identification and interviews, data was gathered from participating transit agencies, counties, MPOs and Commuter Services. This included any relative land use and transportation reports as well as GIS files. This data was used to inventory the existing trends and conditions and travel patterns. Demographic data was obtained from the 2000 Census results.

The GIS data included land use data (both current and future), demographics, transit routes and other commuting data. Several maps were generated to further analyze the current system by overlaying several features and are included in this chapter:

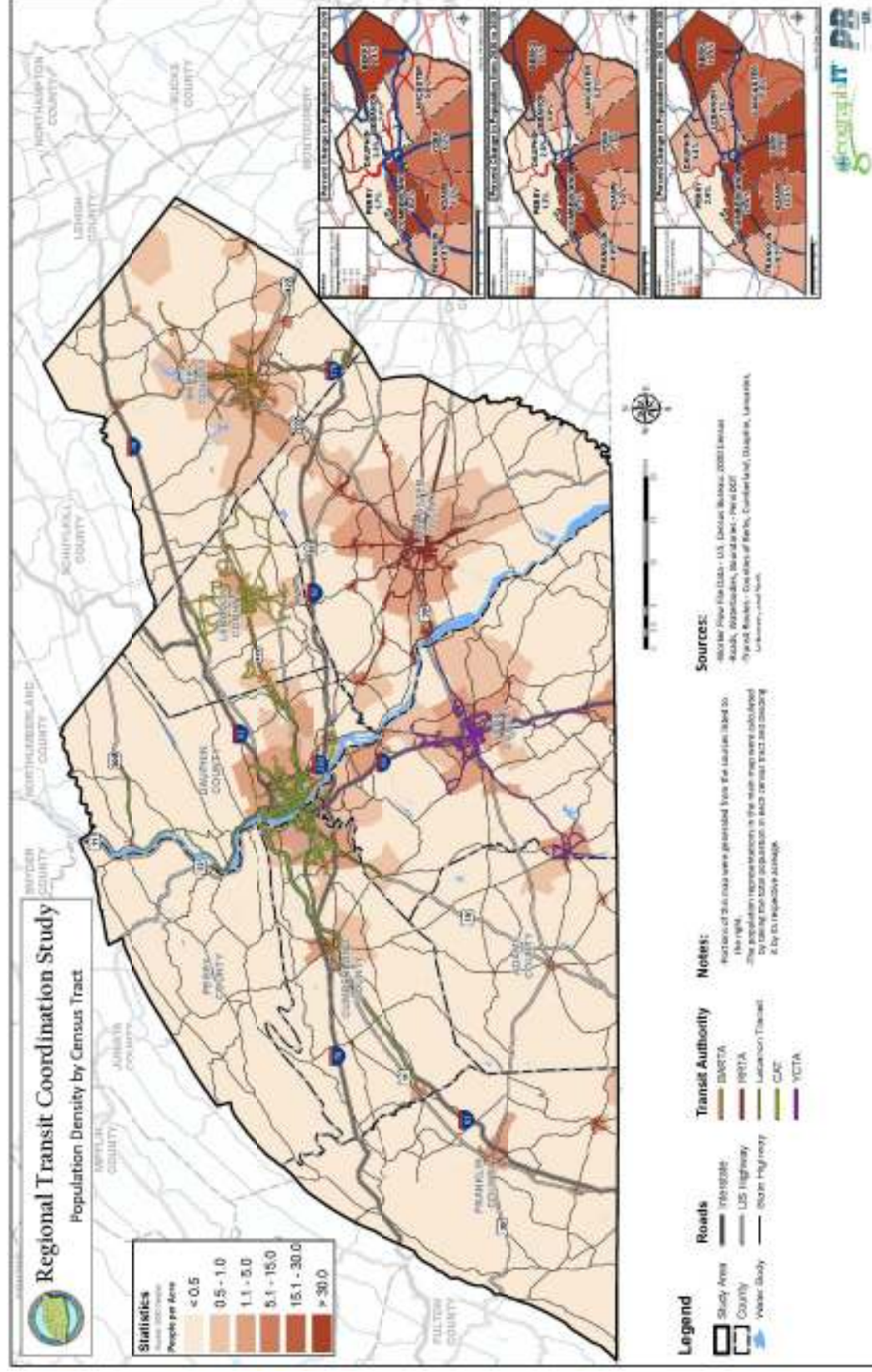
- Population Density by Census Tract, 2000
- Population change by County for 2010-2030 and 2020-2030
- Percentage of Workers Driving Alone by Census Tract
- Job Density by Census Tract
- Growth Areas and Existing Development
- Worker Travel Volumes Around the Study Area

2.1 Demographics

Population

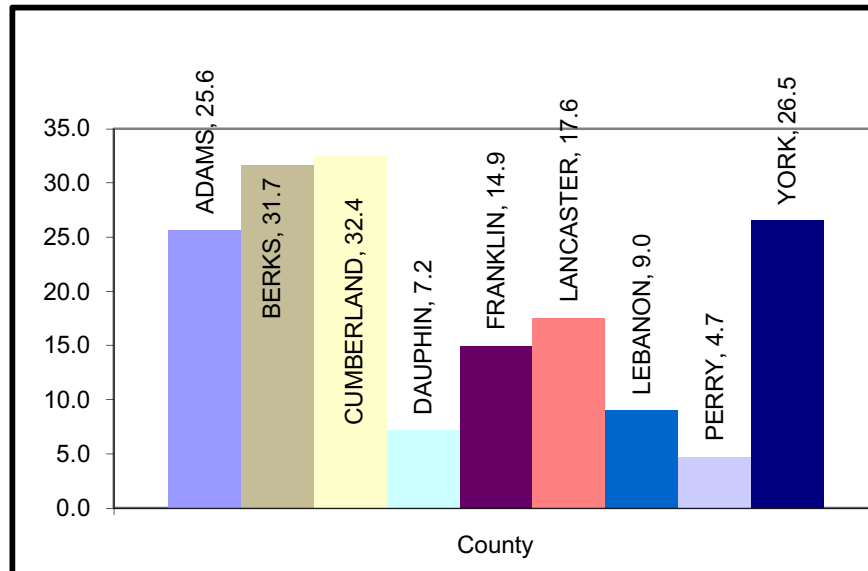
In terms of population, it is readily apparent that the greatest population densities are in the established boroughs and cities. As expected, the suburban areas surrounding these more densely-populated areas are less densely-populated, and they can quickly change to a density of less than one person per acre. **Figure 2-1** shows the existing population densities in the study region. This map shows the population density for the nine county region overlaid with the current transit routes. Notably, Perry, Franklin, and to a lesser extent, Adams County's major employers are not served by transit. Population density is one factor that is often used when evaluating the types of transit that can serve an area.

Figure 2-1. Population Density by Census Tract, 2000



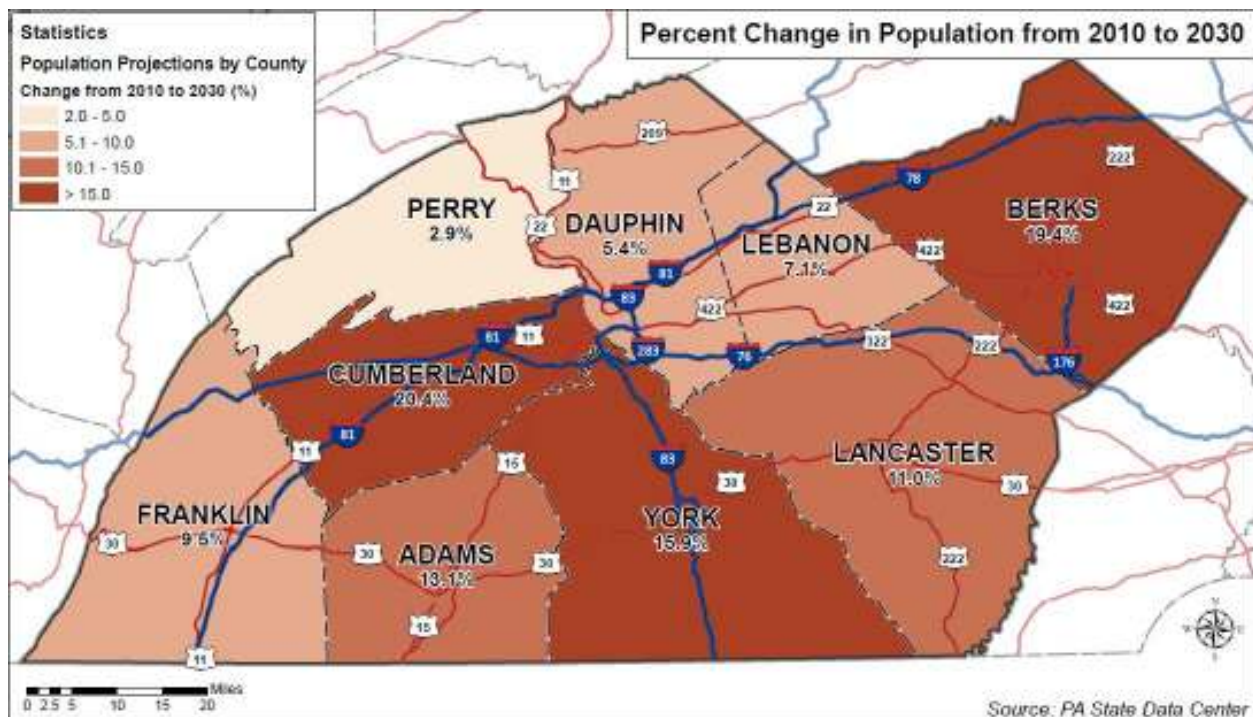
The overall regional projected population growth is expected to be 21.4% between 2000 and 2030. The projected population growth in individual counties ranges between 4.7% and 32.4%. As shown in **Figure 2-2** and **Figure 2-3** below, the projected population growth percentage increase between 2000 and 2030 is expected to be the greatest in Cumberland, Berks, York and Adams Counties.

Figure 2-2. Projected Population Growth Between 2000 and 2030 by County



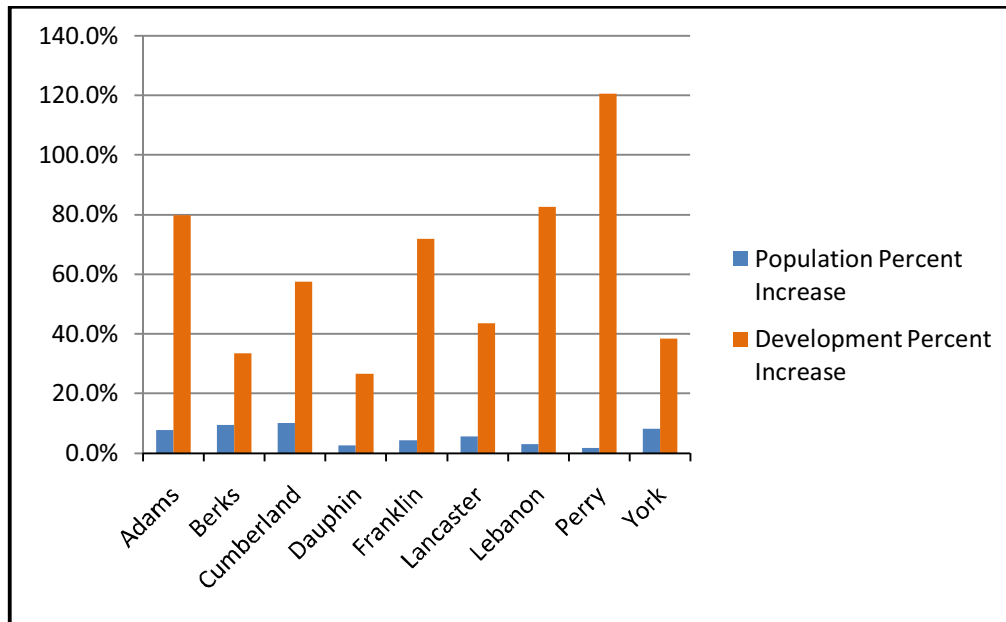
Source: Counties' Comprehensive Plans

Figure 2-3. Percent Change in Projected Population between 2000 and 2030 by County



The projected population growth is much slower than the growth in developed land as shown in **Figure 2-4**.

Figure 2-4. Percent of Population Increase vs. Development Percent Increase, 2010-2020

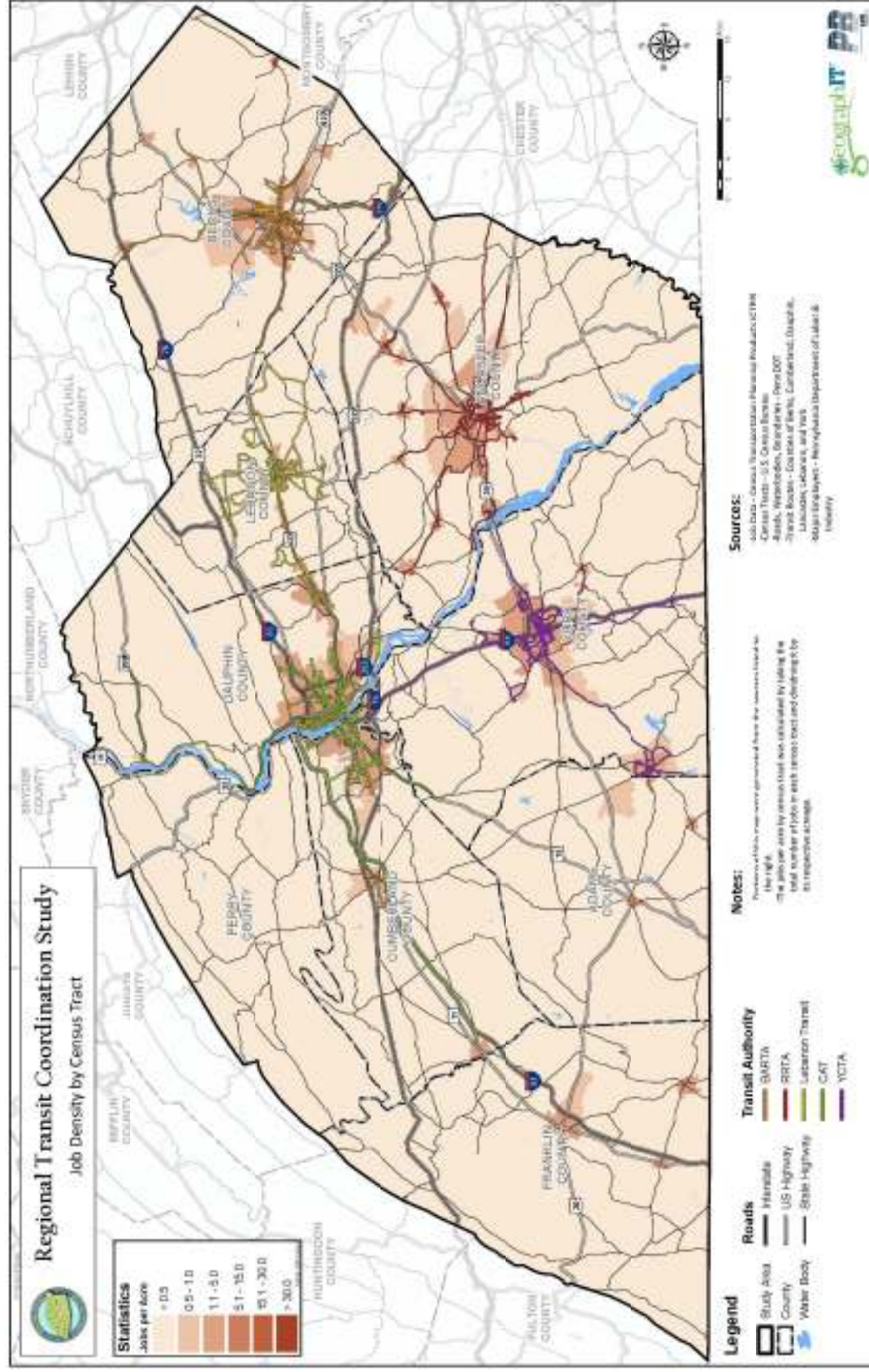


Source: Counties' Comprehensive Plans

Employment

In terms of employment, the concentration of jobs is typically found along the major regional corridors. Some of the region's larger employers are located along these corridors and currently served by transit, but there are others that could be served by transit service. **Figure 2-5** shows job densities by census tracts overlaid with the current transit routes. Concentrations of jobs are typically found along major regional corridors. Job density is another factor used to determine where transit would be most viable.

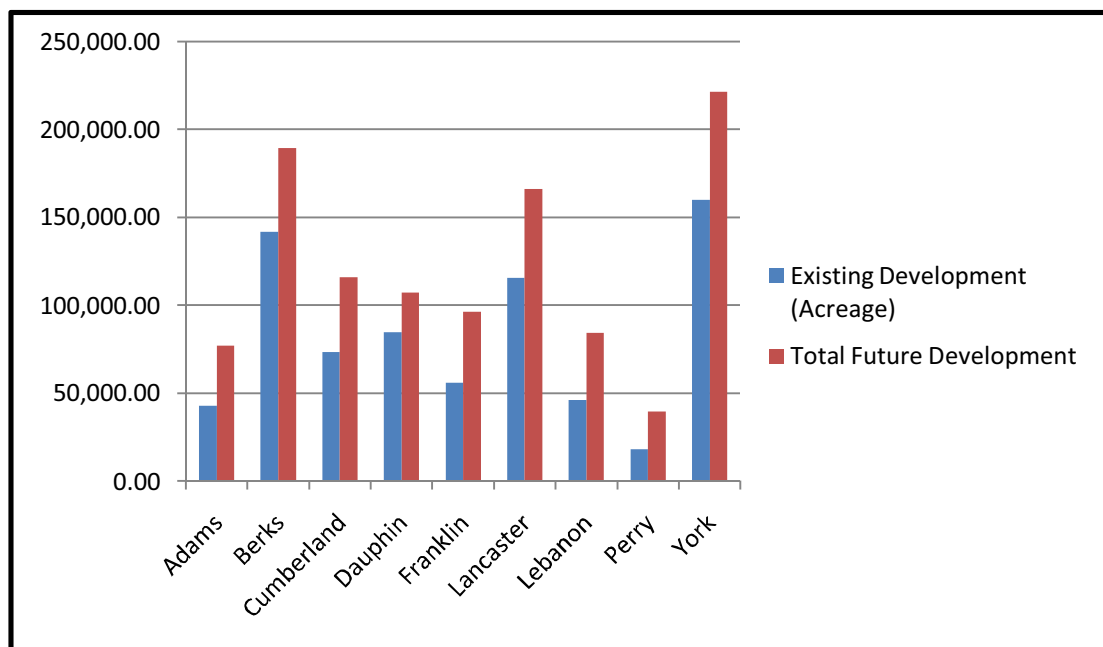
Figure 2-5. Job Density by Census Tract, 2000



2.2 Regional Growth

Developing a regional growth rate was challenging due to the different ways land use data is collected and projected by each planning agency. In order to develop a more unified regional growth pattern, the various land uses were generalized into a unified code. There is a wide range in the regional development rates as illustrated by **Figure 2-6** and **Figure 2-7** below. Nearly half of the study area counties are predicted to grow faster than 25% between 2000 – 2030.

Figure 2-6. Existing and Future Development (in Acres) by County, 2000 - 2030



Source: Counties' Comprehensive Plans

Figure 2-7. Existing and Future Development (in Acres) by County (Percent), 2000 - 2030

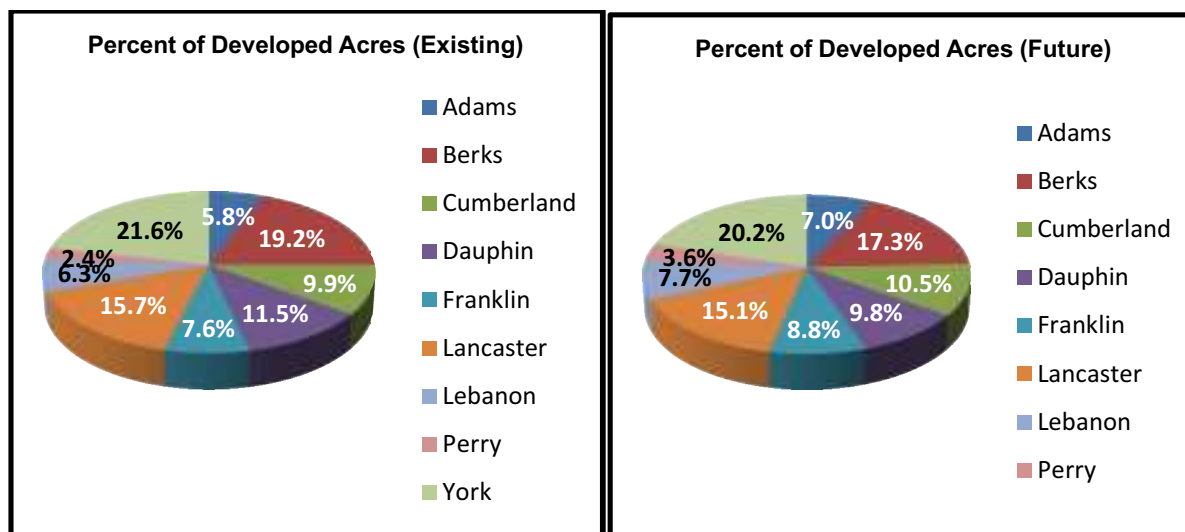


Figure 2-8 on the preceding page displays the existing development in the region as well as proposed future growth areas. In the nine-county region, Cumberland, Berks, York and Adams are expected to grow the most in the coming years.

2.3 Inter-County Travel

Travel between the counties was evaluated using census origin-destination data. The travel between all nine counties was collected using census data and the results for each can be seen in **Figure 2-9** and **Figure 2-10** below. This exercise helped to illustrate which counties have the greatest inter-county travel and where possible connections may be more plausible.

In **Figure 2-10**, the straight arrows show inter-county travel for counties in the study area as well as the counties adjacent to the study area; intra-county travel is shown by the green circular arrows for each of the nine counties. Based on this analysis, an overwhelming majority of trips are within each county. A key to determining the best regional transit routes to consider is to gather further information on key destinations between counties.

The overwhelming majority of trips made in the study area are by single-occupancy vehicle (SOV). This trend was less apparent in Perry and eastern Lancaster Counties, as well as in more densely developed areas. **Figure 2-11** shows the percentage of workers driving alone. It also shows there is more non-SOV use in Perry and eastern Lancaster Counties, as well as in more densely developed areas.

Figure 2-9. Inter-County Travel, Trips per Day by Origin County

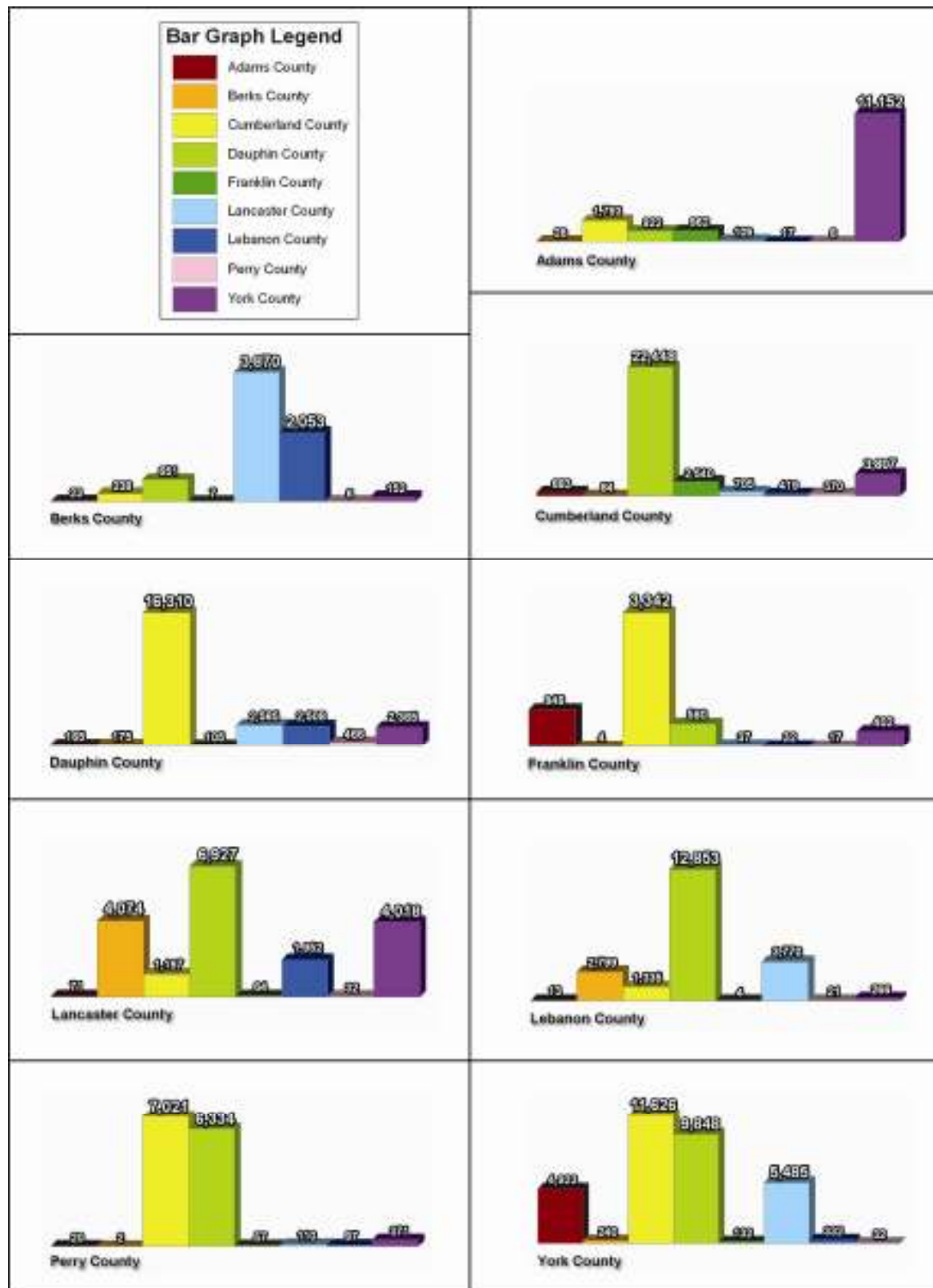
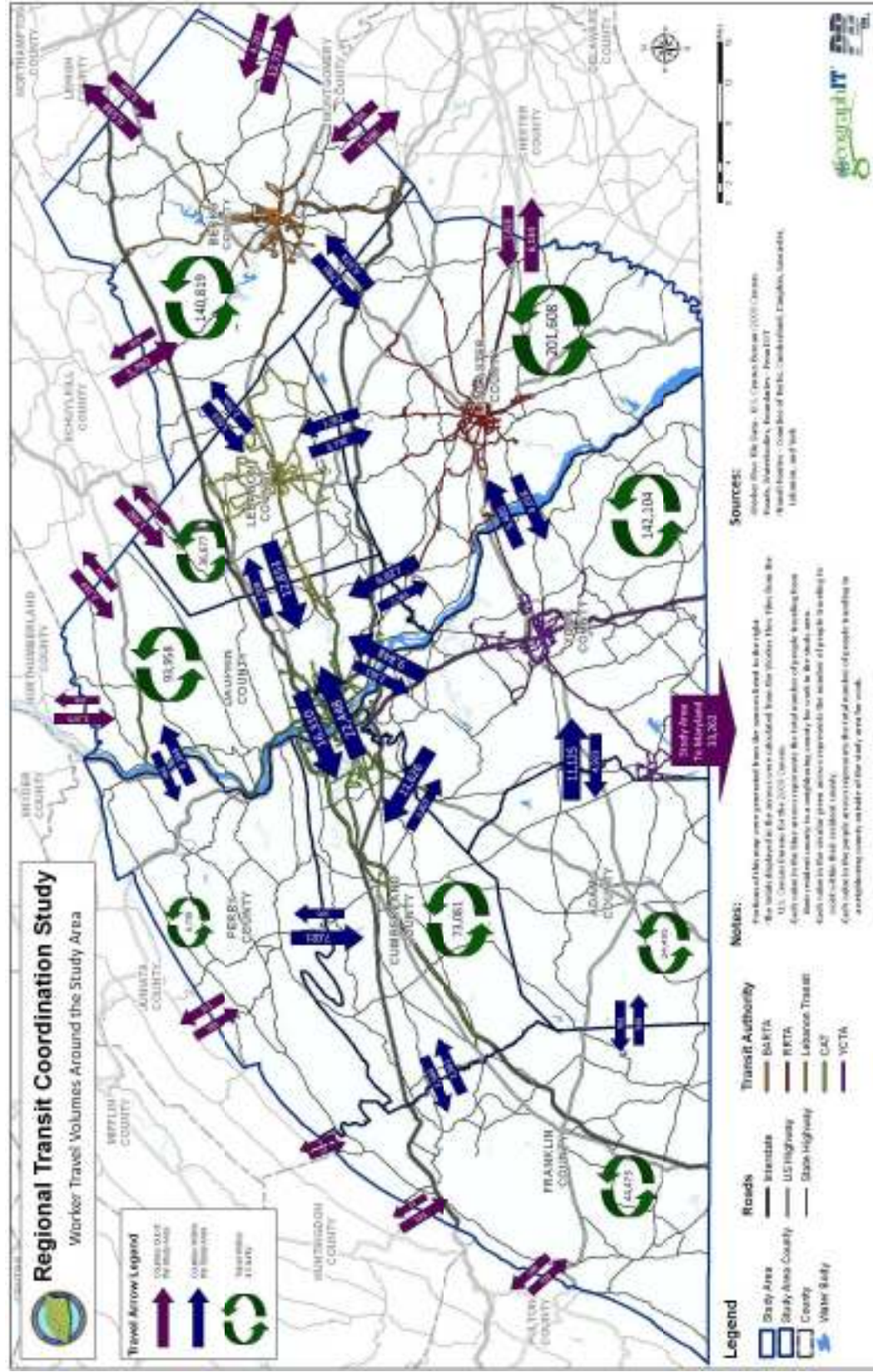


Figure 2-10. Worker Travel Volumes Around the Study Area



3 Corridor Selection Methodology

3.1 Framing the Corridors

The logical extension of the transit needs investigation, detailed in the Chapters 1 and 2, is to establish and define specific corridors within the region to explore the suitability of new transit services. By nature, this process looks beyond the traditional Transit Development Process, which considers agency specific route-analysis, and instead focuses on the interconnectivity between counties and across existing transit agencies. The highway network across the nine-county study area serves only as a starting point for this analysis, representing the constraints for longer-distance transit routing. Equally important is the strategic vision for transit expansion, expressed through the comments gathered through public outreach and the influence of travel patterns serving the predominant origin and destination points. This Chapter documents how these factors were utilized by the study team to formulate an initial set of corridors to further detail, refine, and subsequently evaluate through the course of this study.

3.1.1 Major Highways

Currently, most commuter travel in the region is by automobile. The average commute time for the region is approximately 23.2 minutes, which is less than Pennsylvania's average (see **Figure 3-1**). Other factors, however, shape the current commuting habits and the potential desirability of transit. The presence of carpooling, both formal and informal park and rides along major highways, the lack of free parking at destination locations, and congestion along the route are incentives for travelers to seek a travel mode other than a single-occupant automobile.

The nature of inter-county transit services, with a focus on the commuter market, implies two conditions which are a function of the underlying highway network. First, the trip lengths are typically longer than for localized travel, with an approximate average of 40 miles distance between each county's major population center and the Harrisburg Central Business District (CBD). Second, with the commuter market representing choice transit riders who expect travel times to be comparable with the automobile, high speed travel and limited stops or route diversions are required. In light of this, analysis of connectivity of the major population centers, in terms of distance and automobile travel time, was conducted for the region's highway network. The routing was selected by the most direct/expedient routing using the features of Google Maps. The results are depicted in **Figure 3-2** with different colors representing how the trip lengths and travels times compared. Corridors that are able to take advantage of limited access highways, such as Interstates and portions of US Highways, are

Figure 3-1. Regional Commute Times

County	Mean Travel Time (min.)	Total Commuters
Berks	23.6	190,958
Lebanon	22.1	62,530
Dauphin	20.5	127,508
Perry	30.9	22,028
Cumberland	20.7	113,438
Lancaster	21.9	241,097
York	25.8	209,492
Adams	26.3	50,481
Franklin	23.4	67,038
Regional Average	23.2	-
PA Average	25.4	-

Source: 2005-2009 U.S. Census ACS

generally most favorable to higher speeds over greater distances. The highlighted cells in **Figure 3-2** indicate distances and travel times that may potentially be more or less favorable to establishing transit corridors.

Figure 3-2. Highway Corridor Travel Distance (miles) and Time (minutes) Analysis

	Reading, Berks	Lebanon, Lebanon	Harrisburg, Dauphin	Duncannon, Perry	Camp Hill, Cumberland	Carlisle, Cumberland	Lancaster, Lancaster	York, York	Gettysburg, Adams	Chambersburg, Franklin	
Reading, Berks		27	60	75	65	80	31	55	95	115	Miles
		35	65	75	60	80	30	55	95	110	Minutes
Lebanon, Lebanon	27		28	43	31	50	26	53	62	83	Miles
	35		40	55	45	55	45	70	75	95	Minutes
Harrisburg, Dauphin	60	28		16	6	22	38	25	40	55	Miles
	65	40		25	10	25	45	35	45	60	Minutes
Duncannon, Perry	75	43	16		21	27	53	38	54	61	Miles
	75	55	25		25	30	60	50	60	70	Minutes
Camp Hill, Cumberland	65	31	6	21		16	40	25	33	50	Miles
	60	45	10	25		20	45	30	35	55	Minutes
Carlisle, Cumberland	80	50	22	27	16		55	41	35	35	Miles
	80	55	25	30	20		60	45	45	40	Minutes
Lancaster, Lancaster	31	26	38	53	40	55		26	55	90	Miles
	30	45	45	60	45	60		35	80	100	Minutes
York, York	55	53	25	38	25	41	26		32	58	Miles
	55	70	35	50	30	45	35		45	80	Minutes
Gettysburg, Adams	95	62	40	54	33	35	55	32		25	Miles
	95	75	45	60	35	45	80	45		35	Minutes
Chambersburg, Franklin	115	83	55	61	50	35	90	58	25		Miles
	110	95	60	70	55	40	100	80	35		Minutes

Based on Google Maps Analysis - 2011

	- Greater than or Equal to 55mph Estimated Automobile Travel Speeds, and Less than 70 minutes Total Travel Time.
	- Less than 40mph Estimated Automobile Travel Speeds, and greater than 20 minutes Total Travel Time.
	- Over 90 minutes Total Travel Time.
	- Middle of the range between more favorable green and less favorable yellow and red trips lengths and travel times

A variety of highway facilities are represented throughout the region, some of which may prove more favorable or constraining to the potential for higher-speed transit operations. Overall, a total of 29 highway network pairings were identified to provide for the connectivity generalized in **Figure 3-2**. All initial corridors incorporated some portions of these highways (see **Figure 3-3**). Many of these highways were also identified during stakeholder interviews, and in support of this analysis a general discussion of congestion points was conducted among the study team, but the incorporation or avoidance of these highway segments was only a cursory consideration at this stage of study.

Figure 3-3. Initial Highway Segments Considered for Corridor Identification

	Facility	Start Point (County)	End Point (County)
1	US 422	Dauphin	Lebanon
2	US 322	Dauphin	Lebanon
3	US 22	Dauphin	Lebanon
4	I-81	Dauphin	Lebanon
5	I-76	Dauphin	Lebanon
6	I-81/I-78	Dauphin	Berks
7	US 322/US 22	Dauphin	Perry
8	I-81	Dauphin	Cumberland
9	I-83	Dauphin	Cumberland
10	PA 283	Dauphin	Lancaster
11	US-15	Cumberland	York
12	I-83	Cumberland	York
13	PA 34	Cumberland	Adams
14	PA 94	Cumberland	Adams
15	I-81	Cumberland	Franklin
16	US 11	Cumberland	Franklin
17	PA 944	Cumberland	Perry
18	US 30	York	Adams
19	PA 116	York	Adams
20	PA 94	York	Adams
21	US 15	York	Cumberland
22	US 30	York	Lancaster
23	PA 72	Lancaster	Lebanon
24	US 222	Lancaster	Berks
25	I-176	Lancaster	Berks
26	US 422	Lebanon	Berks
27	US 22	Lebanon	Berks
28	US 30	Adams	Franklin
29	PA 74	Perry	Cumberland
30	PA 849	Perry	Cumberland

3.1.2 Existing Transit

A total of six transit agencies currently provide fixed-route transit service within the region. General statistics for these operators are summarized within **Figure 3-4**, along with any examples of currently operated inter-county services and the potential for extending existing routes or connecting with another regional provider.

Figure 3-4. Existing Study Area Transit Agencies

County	Transit Agency	Routes	Existing Inter-County Study Area Routes	Potential Study Area Routes for:	
				Extension	Connection
Berks	BARTA	22	None	0	2
Lebanon	LT	16	3	0	1
Dauphin	CAT	35	1	2	0
Perry	n/a	-	-	-	-
Cumberland	CAT	35	1	1	0
Lancaster	RRTA	19	None	0	2
York	rabbittransit	19	1	1	1
Adams	ACTA	3	None	1*	0
Franklin	n/a	-	-	-	-

* - New commuter service along US 15 between Gettysburg and Harrisburg began June 6, 2011

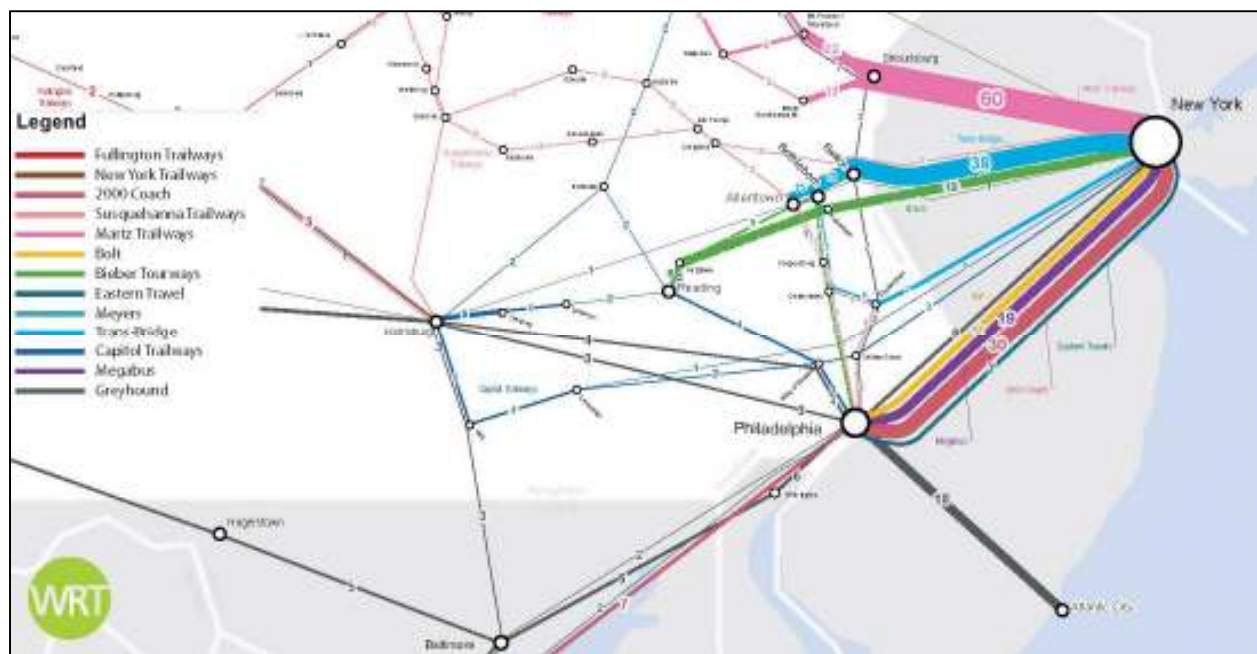
As illustrated in **Figure 3-4**, all existing transit providers have the potential to build upon current inter-county operations or extend/connect with other providers to initiate and coordinate their transit services. Specific examples include rabbittransit and Lebanon Transit, which currently operate commuter coaches that provide express service on I-83 and I-81 respectively. Within the study area, these routes serve trip destinations in the Harrisburg CBD. rabbittransit has also initiated service on I-83 south into Maryland. Also, Capital Area Transit (CAT) operates the Route 81 along I-81 from Shippensburg to Harrisburg as well as the Route 120 Dillsburg Express into York County. In other cases, existing local routes, such as the BARTA Route 14 (Womelsdorf) and the Red Rose Transit Route 17 (Columbia) are examples of services in close proximity to other agency routes with potential for greater inter-county coordination. A variety of smaller operators exist as well providing localized, campus based or shuttle services (i.e. Raider Regional Transit – serving Shippensburg University), which may also provide valuable connections and feeder services for any longer distance routes envisioned. In review of existing transit services within the region, the following principles were applied in the identification of regional corridors:

- 1) Avoiding duplication of services already provided.
- 2) Extension of existing routes into areas not currently served that possess favorable demographics for transit usage.

- 3) Connection of individual county local routes that terminate in close proximity into one unified/express service.
- 4) Provision of service to higher job-density locations not directly served by one-seat transit routes from outside the county.
- 5) Direct new service towards regional centers, while recognizing there may be travel needs outside the scope of this study for service beyond the region (i.e. Maryland, Philadelphia, etc.)

With respect to principle #1, regarding service duplication, two corridors were not considered for in-depth analysis in the Corridor Selection Consideration (see Section 3.2) on the basis that existing transit service is already provided or has been recently initiated. This encompasses the Dauphin-Cumberland and Lebanon-Dauphin inter-county connections respectively. Also, the existing private commuter coach provided routes were noted in this analysis. From this region, however, the limited daily runs provided from the long distance operators were generally not conducive to commuter use (see **Figure 3-5**).

Figure 3-5. Existing Long Distance Commuter Operators



Source: Wallace Roberts & Todd

3.1.3 Travel Pattern Analysis

The demographic analysis contained in the Worker Travel Volumes (shown only as an inset in **Figure 3-6**, this map is fully displayed and detailed in Chapter 2) was a basis for identifying promising inter-county linkages. The volumes represented generalized daily work-based trips, and while not specifying a particular travel corridor, ultimately the highway network analysis reveals several logical choices. At this stage, however, basic county travel pairings were used to rank the largest travel movements across county jurisdictions.

Figure 3-6. Worker Travel Volumes Inset Map

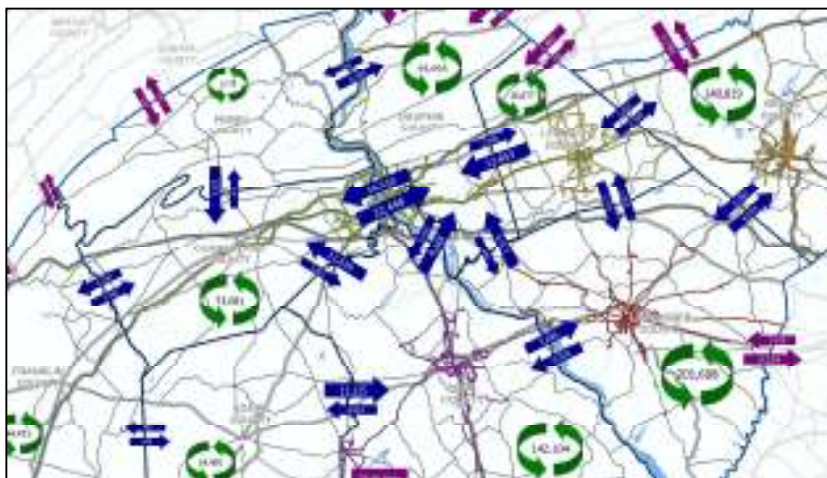


Figure 3-7. Commuter Mode Share

County	Transit Share	Carpool Share	Total Commuters
Berks	1.8%	9.4%	190,958
Lebanon	0.5%	9.5%	62,530
Dauphin	2.1%	10.4%	127,508
Perry	0.3%	13.5%	22,028
Cumberland	0.8%	8.7%	113,438
Lancaster	1.2%	9.6%	241,097
York	1.0%	9.1%	209,492
Adams	0.2%	9.8%	50,481
Franklin	0.3%	10.8%	67,038
Regional Average	1.2%	9.6%	-
PA Average	2.5% ¹	9.5%	-

1 - Excludes Philadelphia and Pittsburgh Transit Figures

Source: 2005-2009 U.S. Census ACS

Further analysis was then applied to extrapolate a potential transit capture of these trips. A regional mode share (i.e. the percentage of total trips taken by a particular mode) was first established for transit and carpooling methods for commuters to reach work (see **Figure 3-7**). This overall mode share (1.2% of total trips) was then applied to the Worker Travel Volumes. Travel Volumes were analyzed in both directions to determine potential for transit-based commuter trips in both directions. In many cases, this would represent a county travel pair where inbound and outbound work-based travel is relatively balanced (assuming that the lower volume is at least 70% of the larger volume), providing sufficient demand for work-based travel in both directions. In

unbalanced cases, a peak travel direction is established, where inbound trips to the county with the most jobs occur in the morning and outbound trips occur in the evening. County travel pairings which only favor one peak direction limit the potential utilization of transit vehicles, which would only be able to provide revenue trips in one, rather than both, directions of travel. The results and rankings from this analysis are presented in **Figure 3-8**. The ranking was based upon a generalized estimate of transit trip potential for each corridor. This figure was calculated by applying the 1.2% regional mode share to each direction of a corridor, taking into account if

the travel volume was balanced (lower travel volume from one county at least 70% of the greater volume to the other county). If the travel volume was not balanced, the trip potential would be further reduced. The volume was multiplied by two, representing AM and PM travel and the subsequent estimates became the basis for a more generalized ridership potential as provided in the detailed corridor descriptions (see **Appendix B – Exhibit B-1**).

This analysis was used to frame and incorporate feedback from study participants as a screening mechanism for the total potential corridors. During this process, a system of color codes to identify each initial corridor was developed. The outcome of this process helped to focus study resources on the most promising corridors to present to regional stakeholders (Transit Round Table #1) and for further analysis, discussion, and implementation planning. In some cases, as detailed in the remainder of this memo, various combinations of corridors were tested and feedback shaped the ultimate inclusion, design, and operating mode to be proposed for the evaluation steps that follow.

Figure 3-8. Analysis of Inter-County Worker Travel Patterns

County - County Worker Travel Volumes						
<u>Corridor Color Code</u>	<u>Volume</u>	<u>Origin</u>	<u>Destination</u>	<u>70% Volume in Reverse Direction?</u>	<u>Reverse Volume</u>	<u>Potential Trip Estimates</u>
Blue	12,853	Lebanon	Dauphin	No	2,508	339
Green	11,125	Adams	York	No	4,923	326
Gold	11,626	York	Cumberland	No	3,807	325
Orange	5,485	York	Lancaster	Yes	4,018	228
Purple	6,927	Lancaster	Dauphin	No	2,585	197
Red	4,074	Lancaster	Berks	Yes	3,780	188
Pink	7,021	Perry	Cumberland	No	370	173
Pink	6,334	Perry	Dauphin	No	466	158
Yellow	3,342	Franklin	Cumberland	Yes	2,540	141
Brown	2,799	Berks	Lebanon	Yes	2,053	116
n/a	3,770	Lancaster	Lebanon	No	1,952	114

3.1.4 Outreach Comments

The types of outreach comments received generally fell into three distinct categories. The primary category included the suggestion for regional connections either in adjacent counties or across the entire region. This feedback, along with the travel pattern analysis, helped to formulate the initial corridors for consideration.

It is important to recognize the other two comment categories received. One category focused on improved connections within a particular county. This type of analysis is best performed as part of a Transit Development Plan (TDP), undertaken at regular intervals by the transit agency currently providing service within the county. While the improvement of existing transit connectivity within one agency's system was not a focus of this study, the potential for corridors to reinforce the local transit network was one aspect of the corridor designs.

The second category of comments identified corridors and travel outside the region, primarily focused on travel to Maryland. The strategic focus to direct service from within the region to outside locations is ongoing, with specific examples cited for connections to outlying Pennsylvania counties and job growth centers in nearby Maryland cities such as Hagerstown. No corridors were designated for travel outside the region, and the prioritization of transit coordination initiatives either within the region or to outside destinations will be an implementation consideration related to a longer-term vision of transit expansion.

3.1.5 Previous Studies and Plans

Additional input into the designation of regional corridors came from recent studies in the region. These studies incorporate some of the strategic planning and vision undertaken regarding transit. It should be noted that the two most recent studies are related to the potential for park and rides along various corridors. The ongoing need for a park and ride component, either as the primary corridor mode offered or in support of other envisioned transit services was a component of the initial corridor designations.

A listing of the studies reviewed includes:

-
- Southern York County I-83 Park and Ride Study (2011)
 - Perry/Upper Dauphin Park & Ride Study (2010)
 - BARTA Strategic Plan (2009)
 - COLT (Lebanon Transit) Recommended Business Plan Report (2008)
 - Red Rose Transit Long Range Public Transportation Plan (2008)
 - Harrisburg Area Transportation Study: 2030 Regional Transportation Plan - Transit (2007) rabbittransit TDP (2006)

3.2 Corridor Selection Considerations

In the course of designating corridors, the beginning and end points for transit routes were unspecified. In some cases, service to downtown transit centers may be assumed; however, it is recognized that the distance of travel on low speed, signalized surface streets often needed to reach these locations will impact the total travel time performance. In other cases, increasing travel choices to destinations not directly served by single-seat transit routes was more desirable. Also, the service type and operations (i.e. vehicle, number of stops) were not initially defined, and it was only later in the corridor development process and after gathering feedback that preferences for the type of transit service (express, shuttle, etc.) or ride sharing options (vanpool, park and ride, etc.) were assigned. The ridesharing/other modes were most often appropriate when corridors featured dispersed destinations. The individual corridor narratives will detail how such considerations varied by route.

3.2.1 Service Market

The corridors identified were envisioned to serve primarily commuter trips, but it was recognized that various commuter markets exist. For example, the current Amtrak Keystone Corridor train service provides limited, high-speed service to the Harrisburg CBD from several Lancaster County communities along the PA 283 highway corridor. Several factors, such as ticket price, and limited number of destinations served, however, indicate that the rail travel market is distinct from the auto-based commuter market along PA 283. Options for interfacing with this rail mode were assessed for the Purple Corridor. Also, during the outset of this study the potential for Bus Rapid Transit (BRT) to connect the Harrisburg CBD and Camp Hill and other West Shore locations was also identified as an additional market for travel, which would need to be well integrated into any regional inter-county service.

With the concentration of service oriented toward traditional downtown locations, the corridors envisioned also explored the potential for serving newer development and employment centers on the urban fringe, providing more direct and one-seat ride opportunities than currently exist. In some limited cases, such as service in a corridor traveling to Gettysburg from Harrisburg, the potential for a tourist-based market could be a factor, especially in providing utilization for vehicles in the non-peak commuter direction or in the middle of the day.

3.2.2 Initial Corridor Definition

A total of eleven county travel pairings were initially identified through the travel pattern analysis (see **Figure 3-8**) and the collective feedback from the study participants. These pairings subsequently evolved into nine color-coded corridors, with the Cyan Corridor (described in more detail below) added after it was recommended by the Joint Study Committee, and the Lebanon-Lancaster travel pairing not developing into a corridor designation. The resulting ten color-coded corridors are described in the subsequent narratives and are depicted in **Figure 3-9**. As these corridors were further evaluated, through suggested modifications determined from stakeholder feedback and the study team, they resulted in a finalized set of ten corridors as detailed later in this section.

Blue Corridor – This route represents a corridor along I-78 and I-81 from Berks County, through Lebanon County and terminating in Dauphin County. The starting location in Berks County was not initially established, but there was recognition of future development along the I-78 corridor near the county border. As an express service, there would be limited interim stops available for a service originating in Berks County, with only a limited number of interchanges. Parallel to I-78 and I-81, US 22 is the focus of much development, typically low-density with some warehousing and light industrial park usage adjacent to interchange locations.

The travel pattern analysis indicated that beyond the Cumberland County to Dauphin County worker volumes, there was significant demand for service from Lebanon County into Dauphin County. Capturing this demand is the focus of Lebanon Transit’s recently initiated service along both US 422 and within this corridor along I-81. The Blue Corridor could either represent a logical extension of this service or provide an opportunity for Berks-based travelers and Lebanon-based travelers to interchange at a central location, such as Fort Indiantown Gap. Different destinations in and around the Harrisburg CBD could also be served by this additional service, to further increase travel choice.

Orange Corridor – This route represents a corridor between York City and Lancaster City, connected by US 30. Currently, local service is provided along a parallel route (PA 462), however the presence of informal park and ride locations along US 30 indicates potential demand for higher-speed connecting service. A connection between rabbittransit and Red Rose currently occurs in Columbia, Lancaster County. This service could initially be operated as an integrated service with one-seat through service provided along existing routes, or a new express service with the potential for one midway stop, perhaps at the new Turkey Hill Experience development in Columbia, adjacent to the US 30/PA 441 interchange. For express service, the route could connect a limited number of stops in each CBD along with outlying areas (e.g., Lancaster Amtrak Station, Galleria Mall) before traveling with limited stops. The current informal carpool locations may or may not yield an opportunity for additional ridership, as they may tend to serve work locations outside the proposed routing. Further analysis would determine the benefits of formalization of one or more park and rides and incorporation of a bus stop.

Green Corridor – This route represents a corridor from Gettysburg in Adams County, through small portions of York and Cumberland Counties, and into the Harrisburg CBD along US 15. During the initial travel pattern analysis, the demand for Adams County to York County transit was very high. In analysis of some land use patterns and in discussions with the study participants, it was recognized that some of the travel demand was to lower-density employment sites in the Hanover area. The nature of this development (dispersed with varying work shifts) and the travel distance/speeds were not initially considered favorable to commuter-oriented services, therefore service connecting Gettysburg through northern York County along US 15 was developed as an alternative.

Capital Area Transit (CAT) currently operates service to Dillsburg in northern York County, and this corridor was initially considered for the potential to diversify travel choice from this location. Travelers wishing to continue to Mechanicsburg or Camp Hill could connection to

existing CAT services, with a one-seat ride provided from Adams County to targeted employment sites in Carlisle. Providing different connections and travel choices helped to stimulate discussion about the local transit market from the study participants.

Yellow Corridor – This corridor would connect Chambersburg in Franklin County, and travel along I-81 through Cumberland County, and ultimately serve the Harrisburg CBD. Express service operated by CAT currently extends to the Franklin County/Cumberland County border at Shippensburg. This corridor could represent an expansion of this service into Franklin County or could initially be operated as a connector service from Chambersburg to Shippensburg, requiring a transfer for Harrisburg-bound trips. Along these lines, a shortened route, that serves either Carlisle or the West Shore region would reduce the required service hours and length of inbound trips. In all cases, a strong network of park and rides or other amenities to direct patrons to the service would be critical, as long distances and the rural nature of this corridor may possibly constrain ridership potential.

Gold Corridor – This corridor reflects a slight modification of the existing commuter service provided by rabbittransit on I-83 from the York CBD to the Harrisburg CBD. To further diversify the potential employment centers served, this corridor would also originate in York, but directly serve locations in the West Shore region of Camp Hill or Mechanicsburg. The service could terminate in a small loop, traversing the more dense business parks and complexes to provide single-seat rides for York residents to these locations. A connection to CAT would also provide more direct access to West Shore locations.

Red Corridor – This corridor extends along US 222 from Reading in Berks County to the Lancaster CBD. US 222 intersects with the PA turnpike and there are several large businesses located in the area that the corridor would serve. Several informal park and rides exist along this route, suggesting possible travel demand for such a service. Red Rose Transit operates service to Ephrata, in close proximity to the US 222 corridor, which could also serve as a connection location for local service connections with BARTA into Berks County. Terminal locations would include the Reading and Lancaster CBDs, with either a local (multi-stop) service approach or a limited stop (Ephrata only) implementation. Other than park and ride locations, there are limited developments or activity centers that would afford quick on/off access from US 222.

Brown Corridor – This corridor represents a connection across an approximate six mile service gap between Lebanon Transit and BARTA in Lebanon and Berks County respectively. The route would operate along US 422, extending BARTA service which currently reaches Womelsdorf to a connection in Lebanon County in Myerstown with Lebanon Transit, possibly continuing on into the City of Lebanon. There is a park and ride located in Womelsdorf that this corridor could serve. The service may be jointly operated, and would improve overall transit service to Myerstown, which currently features a limited set of daily runs. Due to the nature of this corridor, with development and access directly onto the highway facility, the service would likely feature several stops along the route.

Pink Corridor – This corridor represents travel from Perry County into Dauphin County. The corridor is envisioned to originate in the vicinity of Duncannon, PA and either connect across to Dauphin County directly along US 322, or travel along US 11/15 south into Enola and Camp

Hill prior to serving the Harrisburg CBD. CAT had previously operated service to the Perry County line at Marysville, along the west bank of the Susquehanna River. There appears to be good potential to collect park and ride based commuter travel in this area, and the Upper Dauphin Perry County Park and Ride Report outlines several locations within the proposed Pink Corridor. Travel destination choices will ultimately dictate the best access route along the Susquehanna River, with routing initially envisioned to serve both sides, traveling along US 11/15 through Marysville and then crossing at I-81 for service direct to the Harrisburg CBD.

Purple Corridor – This corridor represents travel from Lancaster County into the Harrisburg CBD. The initial concept for this service was specifically designed to avoid duplicating Amtrak commuter services already available in the PA 283 corridor. This corridor would primarily serve northern Lancaster County communities such as Manheim, while also providing a stop at a park and ride near southern Lebanon County at the I-76/PA 72 interchange. The corridor would then reflect express service continuing into Harrisburg via I-76. While this routing wouldn't serve the highest concentrations of ridership within Lancaster County, it could provide limited daily runs on a new connection, representing a corridor without existing commuter-based services. Also, this corridor tested the possibility of serving destinations in Harrisburg, such as Progress and the employment centers east of downtown. The original corridor concept has changed to travel on PA 283 with additional information on the final description in the dashboard section of **Appendix B – Exhibit B-1**.

Cyan Corridor – This corridor directly addresses the Adams County and York County travel between Gettysburg and the City of York. This route would also serve Hanover, potentially serving new growth and development occurring north of this city along Eisenhower Drive. Connections with rabbittransit in Hanover would allow for local stops and service throughout the city, and this corridor would continue as express service into York. It was recognized that while there are manufacturing and other low density employment sites with the vicinity of this corridor, serving this multitude of locations with a single fixed route bus service would be difficult. A vanpool travel mode (see Section 2.4) was considered for specific employment sites, as these services can be tailored to the specific travel and work needs of the various employers. Continued growth within the corridor could warrant a conversion to a regular fixed route service in the future. The inclusion of service from Hanover feeding a Gettysburg to Harrisburg commuter route (Green Corridor) was also suggested as another option to combine into a larger route.

3.2.3 Transit Agency/Stakeholder Perspectives

As the initial corridors were presented, several questions were asked of study participants to frame discussion on refining the corridor design. Variations for each corridor were envisioned, and in some cases, subsequently incorporated into refined corridors based on the following considerations:

- *How best to capture existing informal park and ride locations?* It is known that along many of the highways where the corridors will operate that existing and often informal park and ride locations exist. Study participants were asked to think about how could these potential riders could be best accommodated in the corridor designs.
- *What defines a secondary transit hub, and what areas meet those criteria?* Rather than route all corridors into the Harrisburg CBD, the study participants were asked to think about other employment/activity centers which could be a focus for some corridors to serve as destinations. These could include locations of higher density employment, or logical locations to avoid multiple duplicate runs, avoid slower and more congested segments of highway, or shorten the distance of longer runs to enable the transit vehicle to perform another run.
- *Where can corridors be connected to provide different options for one-seat/through services?* Some of the corridors were designed to specifically test the reaction for new one-seat ride combinations. While these connections might not represent the highest volumes in travel demand, the additional convenience of more direct service could entice additional drivers to switch to transit. Initial operating considerations, such as running through or interlining corridor services from multiple providers was also contemplated.

These discussion points and the introduction of route classifications began the process of corridor refinement.

3.2.4 Route Classifications

The route classification system was designed to identify the mode of service which might be most favorable to the observed or anticipated corridor conditions. While the initial corridors were conceived as general route-based transit services, in the refinement phase it was necessary to further identify a suitable service mode. A total of seven (7) corridor modes were developed, with detailed descriptions provided for each. It should be noted that a Bus Rapid Transit (BRT) mode was included, not for implementation in any of this study's proposed corridors, but to support higher level connections between two distinct destinations which began to emerge for the corridors, namely the Harrisburg CBD and West Shore locations. A frequent and rapid BRT connecting service between these two hubs would also support other regional objectives, and address improved Dauphin-Cumberland inter-county connections which were not specifically identified as a corridor in this study.



A **Carpool** can reduce the costs involved in car travel by sharing journey expenses such as fuel, tolls, and car rental between the people travelling together. Carpooling uses private or jointly hired vehicles, for private shared journeys. Carpooling allows trip origin and destination to be customized to the individual needs, and coordinating programs help in matching favorable travel patterns. In the study area, the Susquehanna Regional Transportation Partnership administers the region's Travel Demand Management (TDM) program known as Commuter Services which helps commuters find carpool partners.



Vanpools are an element of the transit system that allow groups of people to share the ride similar to a carpool, but on a larger scale with concurrent savings in fuel and vehicle operating costs. Vanpools are the most cost effective mode of public transportation in the United States and the only mode more cost effective than bus. Commuter Services helps commuters form vanpools by bringing together a group of seven to 15 people to share the ride and commuting costs to and from work.

Vehicles may be provided by individuals in cooperation with various public and private support programs, through a program operated by or on behalf of an element of government, or a program operated by or on behalf of an employer. It is important to note that if vanpoolers use their own vans, i.e. a van that is personally owned, they are not recognized as a formal vanpool by regulations that would allow them to use state and/or federal funds (or pre-tax payroll deductions) to pay for the cost of their vans.



Shuttle services are fixed route services that operate typically on a dedicated basis (i.e. serving the same destinations, often in a loop) or can be utilized for routes with lower overall passenger volume. Shuttle service may be distinct for regular fixed route service in terms of service frequency, branding, or fare structure. Shuttles can often serve as feeder routes to longer distance and higher passenger volume trunk routes, as well as providing connections to locations beyond walking distance from major transit and transportation hubs.



Express bus service is a variation of traditional fixed route transit that is intended to run faster than normal bus services between the same destinations. This service typically runs between the downtown sections of cities, major transit hubs, or higher density employment and activity centers. Express buses operate on a faster schedule by not making as many stops as normal bus services and often by taking advantage of quicker routes, that local bus services do not typically utilize, such as along freeways.



Commuter buses typically operate on long distance routes, between outlying areas and a larger urban center. These buses typically feature amenities that favor productivity (wireless internet) or comfort due to the long trip lengths. These services typically operate only during the peak commuter times, with inbound runs in the AM and outbound runs in the PM. There may also be limited potential for these services to accommodate reverse commute and midday trips. Commuter bus operations are typically designed for loading a vehicle to capacity in outlying areas and then distributing passengers throughout an urban location. The vehicle design of commuter buses is not intended to support frequent passenger boardings and alightings.

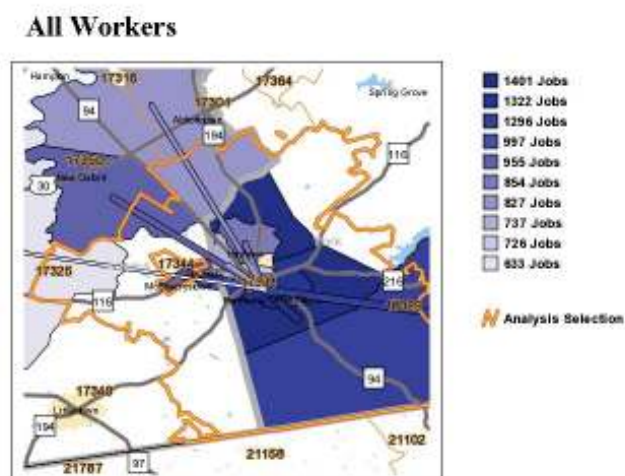


Bus Rapid Transit (BRT) is a term applied to a variety of public transportation elements applied to bus systems in order to provide faster, more efficient service than an ordinary bus route. Often this is achieved by making improvements to existing infrastructure, vehicles and scheduling. The goal of these systems is to approach the service quality of rail transit (i.e. high capacity, frequency, and schedule reliability) while still enjoying the cost savings and flexibility of bus transit.

Figure 3-10. Local Employment Analysis Tool

3.2.5 Other Corridor Analysis

Other analysis methods were utilized to inform the refinement of the initial corridors. These focused on an assessment of the corridors to serve transit needs. A “Local Employment Dynamics on the Map” tool was applied for various corridor employment locations (see **Figure 3-10**). This tool is useful in preparing a graphical representation of where employees are coming from for a particular geographic area, and it was used to study corridor beginning and endpoints as



well as the potential for feeder services to locations not directly served by the main corridor route. Also, a “heat” map was prepared to provide a composite image of “transit favorable” conditions such as proximity to major roadways and higher density development. A sample of this methodology and details on the five criteria used are presented in **Figure 3-11**. A resultant map was then produced (see **Figure 3-12**) to show graphically the range of the resultant scores across the regional geography. The visual representations supported some of the initial corridors and their modifications. This analysis was used only as a visual aid to confirm how the corridors identified were meeting anticipated transit needs.

Figure 3-11. Heat Map Ranking Methodology

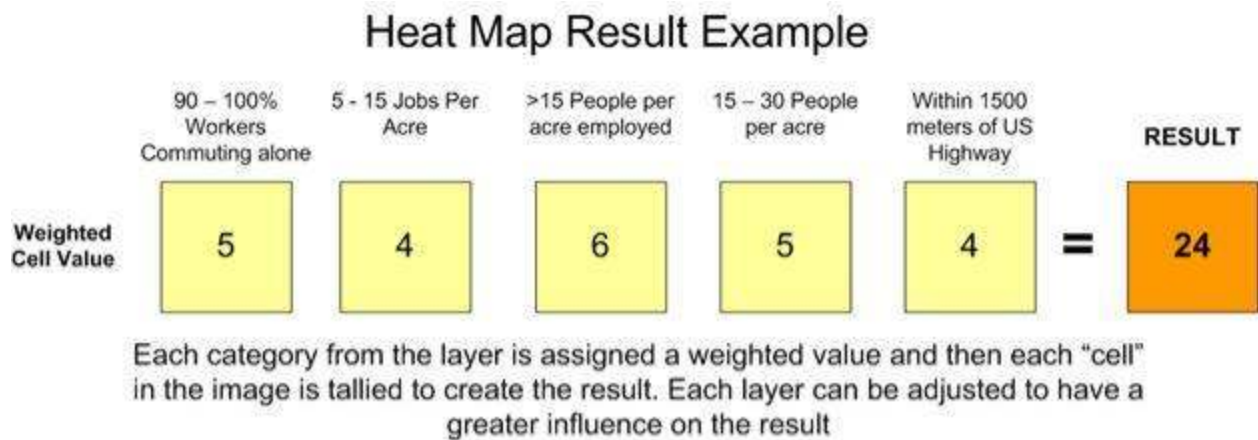
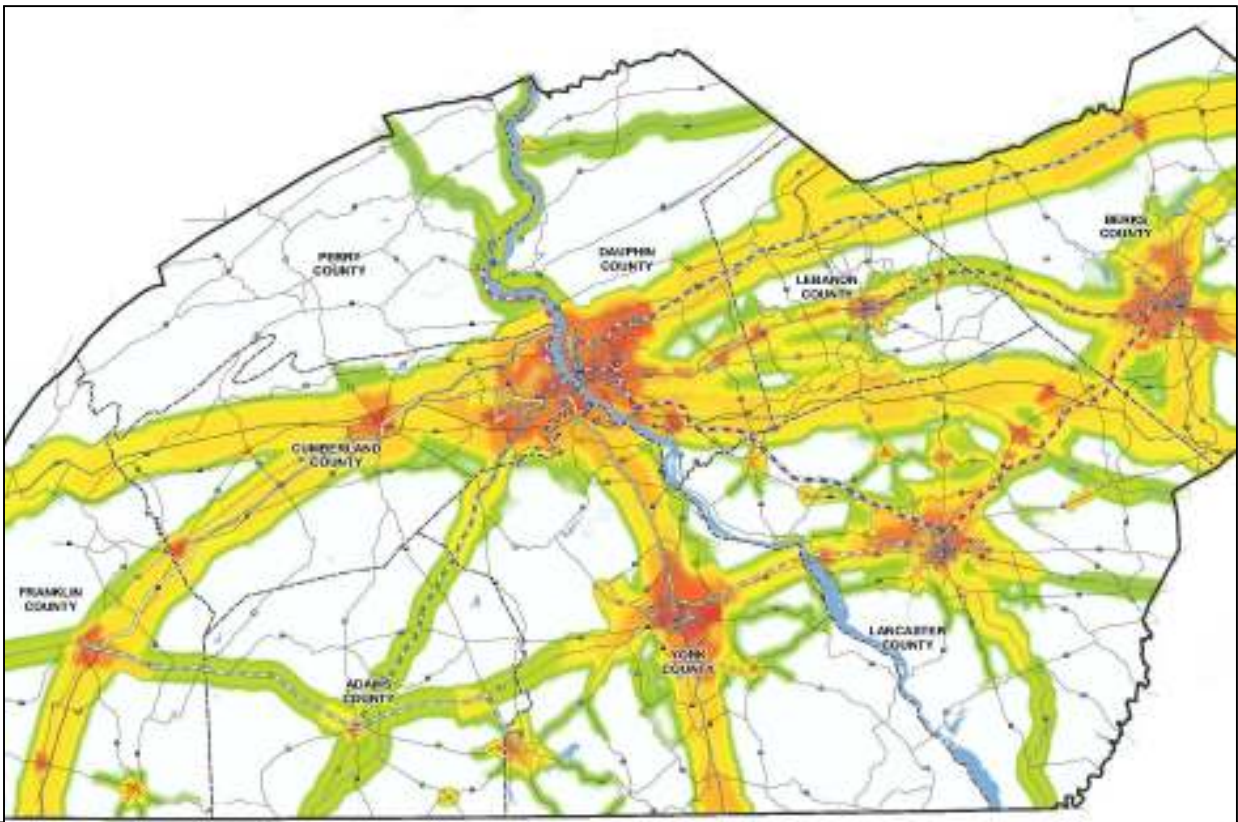


Figure 3-12. Heat Map Results – High (Red) to low (Green) ranking of travel potential shaded.



3.3 Local Feedback

Through presentation of materials at the study team meetings and the feedback at the Transit Roundtable #1 held in December 2010, a variety of comments for adjusting corridor alignments were received and ultimately used to shape the refinement and recommended corridors. The next section details the comments and feedback received from the facilitated discussions held at the Transit Roundtable #1.

3.3.1 Comments Received

During the interactive feedback session of Transit Roundtable #1, comments were received for each corridor. Comments ranged from the routing/design of service to the operations and promotion/support for implementation. A compilation of the corridor specific feedback is included in this section.

Blue Corridor

- The Lebanon Transit service (just initiated) to Fort Indiantown Gap should be analyzed first (after some time) to determine potential for further expansion.
- Potential end point at Hamburg (Cabela's, PA 61 Interchange).
- Keep in mind potential incoming commuters from Schuylkill County.

Orange Corridor

- Be aware of non-CBD destinations and how best to serve them
- Consider running some buses as "add ons," i.e., not all buses serve the same destinations.
- Noted that there are many informal park and rides now along this corridor.
- Survey park and ride users for origins and destinations.
- Ideal to capture both commuter and leisure markets.
- Bridge over Susquehanna River is a funnel for this corridor.

Green Corridor

- Consider extending the line to the Mechanicsburg/Camp Hill/Harrisburg area as opposed to Carlisle.
- There are no formal park and ride facilities in the Gettysburg area to use as an effective origination point. Something near the outlet mall or near a Route 15 interchange east of Gettysburg was recommended.
- A stopping point near York Springs, perhaps at or near the Auto Auction site was recommended. Adams County has identified some underserved populations in this area and has concerns regarding environmental justice, so increased access to transit options in the area is desired.

Yellow Corridor

- It was agreed that an origin point close to I-81 Exit 17 is likely to be the most desirable, with Exit 14 as a possible alternative.
- An interim stopping point near Exit 37 (Newville) was felt to be desirable, either at the informal park and ride at the southwest quadrant of the interchange or the rest stop in the northeast quadrant. A PennDOT representative indicated that the rest stop may not be feasible.
- Using this corridor to provide service between Letterkenny Army Depot and the Mechanicsburg Navy Base may prove effective.
- An endpoint at the bus/train terminal at Harrisburg was identified as potentially the most effective.

Gold Corridor

- Rabbittransit is providing express service between York and Harrisburg which is doing very well. As a deluxe service with wifi and TV it serves three park and rides and York/Harrisburg.
- CAT provides service to Camp Hill and Mechanicsburg.
- There may be opportunities to serve industrial and office parks in Camp Hill and Mechanicsburg, but need to survey large employers in parks to learn more about their needs.
- Issues include secure bases, free parking, and that a lack of restaurants and services in industrial/office parks makes people drive.

Red Corridor

- Need to determine where to take the route in both cities – i.e. where should the station be.
- Really need to understand the work demographics to determine when and how much service to provide.
- In general, there should be two buses in the peak period and one in the off-peak period.

Brown Corridor

No revisions were suggested for the Brown Corridor from the originally proposed design.

Pink Corridor

- CAT service terminated at Marysville (Perry-Cumberland County Line) due to insufficient ridership.
- Current CAT service on Eastern side of Susquehanna River (US 22/US 322) is utilizing two buses and could use a third due to demand.
- There is a recently conducted Perry/Dauphin County Park and Ride survey, indicating that facilities are at capacity.
- Uncertain if a park and ride in Duncannon would be effective. Perhaps better to direct drivers to and expand existing park and rides across the river in Dauphin County.

- Any informal park and rides in this corridor could be formalized, but do not necessarily need transit. These can be places for carpooling.

Purple Corridor

- In that it parallels the Keystone Corridor, and that parking for the train draws from a significant area, suggested that it would make more sense to provide an enhanced bus circulator service at the stations to serve employment areas that are beyond walking distance (e.g., Lancaster, Mount Joy, Elizabethtown, Middletown).
- Provide for a coordinated fare structure with Amtrak (exists to some extent already with CAT) and the various transit agencies; then market it.
- More parking is needed at the train stations.
- Informal and formal park and rides should be studied, formalized where appropriate, and parking added as needed.
- Ownership of the park and rides needs to be better understood; PennDOT should be involved from a funding standpoint.
- Emphasize the bi-directional nature of travel in this corridor – there are jobs near the train stations that residents from Harrisburg travel to.
- Suggestion to survey Amtrak riders to understand their final destinations
- Lancaster Train Station:
 - Lack of parking
 - Not convenient to rest of downtown Lancaster (CBD), though there is a trolley
- Need to have heavy reliance on a TDM program, such as Commuter Services, to market the benefits of transit, e.g., when it can be competitive with auto travel, it is often “me time” that is of benefit.
- Explore potential for employer-provided vans to get people from train station to places of employment vs. relying on public funds; investigate a public private partnership with Enterprise or another rental company for vans.

Cyan Corridor

- Rabbittransit currently provides service between Hanover and York, and serves Utz and Snyder’s facilities.
- There are a number of new big box developments that are not transit friendly—large setbacks, no sidewalks, no shelters. Reach out to property owners to inform them of transit service in the area and what they could do to make it more possible.
- There appear to be a number of potential origins/destinations between Gettysburg and Hanover, but more information is needed about employees, shifts, etc.
- Wellspan Medical has several facilities in the area—Gettysburg Hospital and Wellspan Medical Center, and York Hospital and Apple Hill Medical Center. No transit service currently to these facilities.

- A connection between Chambersburg to Gettysburg along Route 30 should be investigated to facilitate commuting, shopping, tourism, etc. along the route. Such a line would then connect to the Cyan route, providing a connection to York and Lancaster.

3.3.2 Changes Incorporated

Based upon the comments to date, the following changes were included following receipt of stakeholder comments and review of those comments by the JSC:

Cyan Corridor – This route was extended into Chambersburg to extend to and terminate in Hanover. Due to the route length from Chambersburg and the lower overall travel speeds, providing a connection to Hanover allows this route to serve the employment centers in the region and offers connections to the City of York on existing rabbittransit services. Due to the low density nature of development along this route, yet the concentration of employment centers, a van pool operation is initially proposed. These services can be tailored to the specific travel and work needs of the various employers, and continued growth within the corridor could warrant a conversion to a regular fixed route service. The eventual inclusion of service from Hanover feeding a Gettysburg to Harrisburg commuter route was also suggested.

Pink Corridor – This route was shifted to terminate in the West Shore region, rather than continue into the Harrisburg CBD. Given the recent park and ride study for this corridor, a car pool service mode is currently proposed. There is not sufficient demand at this time for a higher level of fixed route bus service on the western bank of the Susquehanna River.

Green Corridor – This route was changed to continue along US 15 beyond Dillsburg in York County to a terminus in the Camp Hill/West Shore area. This portion of the route would either represent an incorporation of or parallel service to the existing CAT service.

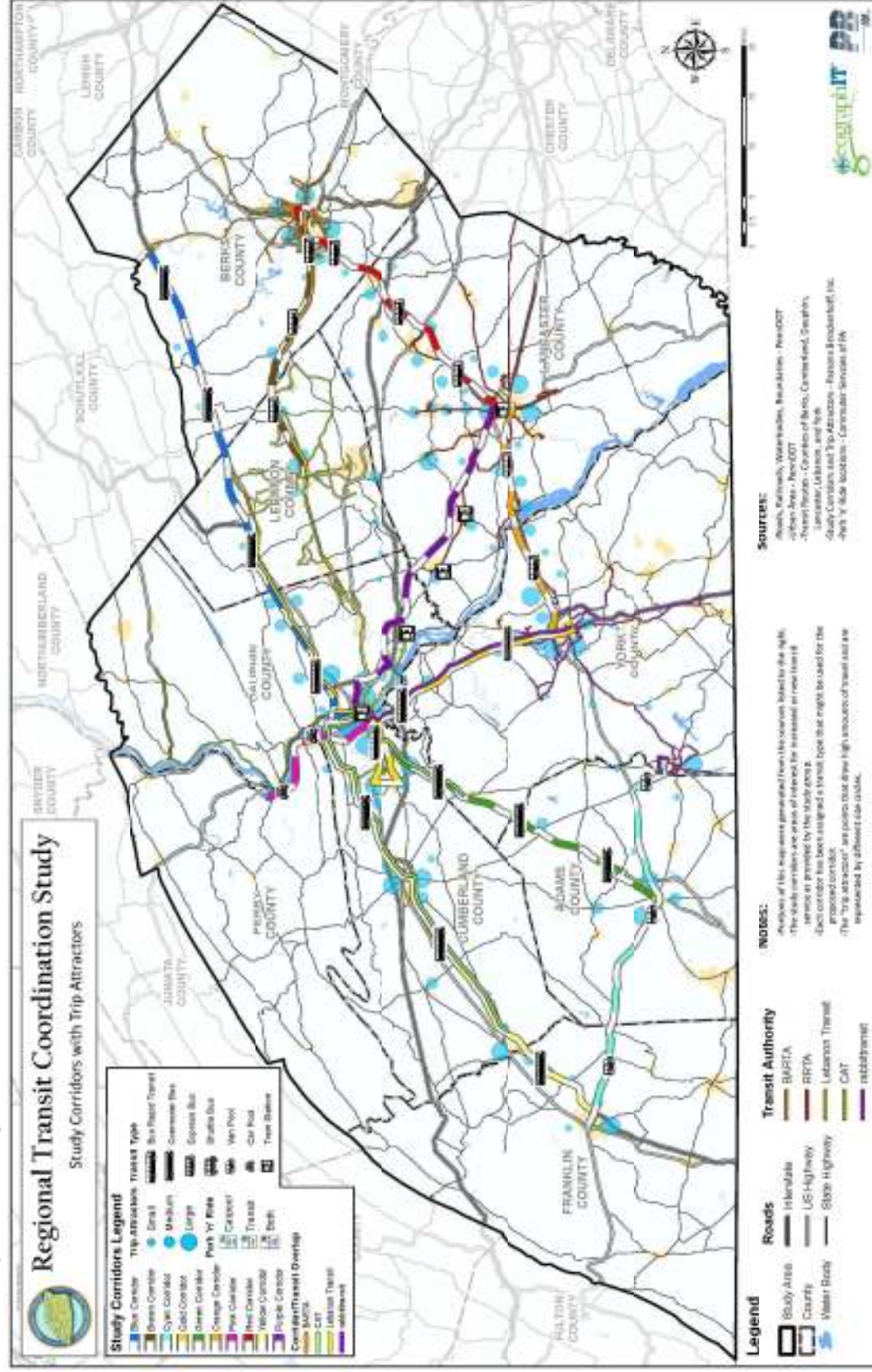
Yellow Corridor – This route was changed to terminate in the Camp Hill/West Shore area.

Blue Corridor – This route was extended to Hamburg and the I-78/PA-61 interchange.

3.3.3 Finalized Corridors for Evaluation

A new map was prepared (see **Figure 3-13**) to capture the changes and mode selection for the ten corridors that were refined following transit agency, steering committee, and stakeholder feedback. For routes which were modified, the corridor details have been updated and a corridor mode has been ascribed to each. The finalized corridor map also indicates that a BRT connection between the Harrisburg CBD and the Camp Hill/West Shore area would facilitate connections between these two proposed termini of corridors. The ten color-coded corridors will then be subject to further evaluation to determine the relative ease and general time-frame for implementation. Individual corridor maps, along with additional details on the comparative characteristics of each are provided for reference in the **Appendix B - Exhibit B-1** of this document.

Figure 3-13. Finalized Regional Corridor Map



4 Barriers to Transit Service Connectivity

4.1 Background and Methodology

With the ten corridors for potential regional transit service (described in Chapter 3) agreed upon by the JSC, the study progressed towards identifying the barriers that would challenge their implementation. This chapter focuses on the opportunities and barriers that were identified from both the transit gap analysis as well as in consideration of the ten recommended regional transit corridors. These opportunities and barriers cover many areas, including institutional, regulatory, administrative and operational. Each of these areas were discussed individually with the five transit agencies involved in the study, which yielded a rich understanding of the nuances as well as the obvious challenges that each will face as regional coordination progresses. **Appendix C-Exhibit C-1** includes summaries of these discussions as well as the questions that were used to guide the conversation.

In general, it was agreed by the five transit agencies that the development of the appropriate institutional arrangements for cooperation among transit agencies could be more challenging than the overcoming of technical issues such as joint fare collection systems, specifications for joint purchase of vehicles or components, and other “hardware” issues.

These areas were identified based on the study team’s discussions with the transit agencies as well as the research conducted on barriers identified by transit agencies around the country and the solutions employed to overcome them. The various opportunities and concerns identified by the study’s transit agencies were organized into a series of barriers that were further discussed as part of Transit Roundtable #2. The lack of available funding was overwhelmingly cited as the most significant barrier. It was assumed that with adequate funding, other barriers would be easier to overcome.

The aim of the second Transit Roundtable, held in April 2011, was to involve more stakeholders in a discussion focused on the opportunities and challenges associated with the implementation of regional transit service, specifically honing in on three areas that encompassed these barriers:

- Organizational framework
- Legislative and funding
- Community partnerships

The remainder of this chapter discusses the barriers that were identified as well as potential solutions to help address them.

4.2 General Barrier Types

The study team began with a general identification of barriers and lessons learned elsewhere during similar service coordination efforts. The barriers identified in this section relate to the coordination of bus service across jurisdictions or counties - they are *not* reflective of the

coordination issues that would need to be addressed through a merging of agencies, and thus were not considered as part of this study. The following general considerations for regional transit service coordination were identified based on examples of coordinated transit service in other regions of the United States:

- **Decision-making authority/political issues.** The decision-making power for the project and who is responsible for its success must be determined at the outset of the coordination effort. Establishing intergovernmental/interagency agreements and formalizing communication is critical to the future success of service coordination and could take several forms. Part of this effort is determining whether any statutory changes, such as enabling legislation, would be required to allow service coordination, or whether other administrative obstacles exist, including agency charters or incorporation agreements. Potential forms of governance include:
 - Memorandum of understanding
 - Joint powers resolution
 - Intergovernmental agreement
 - Purchase of service
 - Operating agreement
- **Sharing revenue and costs.** It is important to determine at the outset of the coordination effort how interagency revenue and costs will be shared in order to reduce any barriers to participation. This is a particularly critical issue for circumstances where bus routes operate in jurisdictions of more than one agency. In the US, several examples exist of potential revenue and cost sharing agreements, including those based on miles or hours operated within a given jurisdiction, passenger counts, passenger-miles, etc. Revenue and cost sharing systems must accommodate inequities between the systems of the two participating transit providers to ensure that the more efficient service provider is not adversely affected by the shared transit route. A simple approach to cost-sharing is recommended, and numerous examples exist for efficient ways to implement this. Miles of service operated on the particular route is one common method of assigning costs and revenues.
- **Branding of equipment.** The use of branding as a way to expand the visibility and appeal of the new transit services will ideally encourage ridership. However, branding efforts must take care to not diminish the transit agency's local brand. As such, using the same LED display or magnetic signs for all routes may be ideal at the outset when different system's vehicles are sharing a route. Over time, if the route is successful, agencies can consider wrapping or painting vehicles in similar colors. The downside of this approach is that it limits the flexibility of these vehicles relative to the rest of the fleet.
- **Fare collection.** Similar to the need to brand the service such that it is perceived as one system to the passenger, payment of fares for any connections should be as seamless as possible potentially through the use of a unified fare media such as a

joint fare card, smart card or other type of payment system. Agreement on the collection and assignment of fare revenue is critical to project success. It is important that passenger counts, passenger mile count estimates and other statistical bases on which fare revenue are assigned are accurately counted to ensure that fares are appropriately shared. Electronic fareboxes and automatic passenger counters (APCs) that provide for accurate headcounts should be considered in future procurements.

- **Service issues and delays.** The transit agencies should preemptively decide on how to deal with service delays particularly if more than one transit system is providing the service on the corridor. Radio or other communication devices between two transit systems need to be compatible and both agencies need to identify how relief vehicles will be provided for, dispatched and operated in cases of breakdowns. In such a circumstance, the allocation of costs related to relief trips must be an element of the shared service agreement.
- **“Last ½ mile.”** Corridors where employment and other destinations are located beyond a reasonable walking distance from the bus stop will be less appealing to commuters than ones where destinations are adjacent to, or within a reasonable walking distance (10 minute walk), from the bus stop. A review of the pedestrian or other related amenities must be undertaken to determine how safely and efficiently users can travel the “last ½ mile” to their destination. When determining service characteristics, a consideration of how passengers get from their residence/work place to the bus route is necessary. This may be a key element in service design along with zoning requirements longer-term. Options to consider for providing this connecting service include transit agency shuttles or vanpools coordinated through Commuter Services, employers or consortia of employers such as a Business Improvement District (BID). Encouraging private taxi service through subsidization or signage may also be of interest.

A summary of the transit agency case studies from around the US can be found in **Appendix C – Exhibit C-2**.

4.3 Barriers identified by Joint Study Committee

After presenting the examples of transit system coordination in the US and discussion with the JSC, a series of barriers and other considerations were identified by the study team as those that would be of most relevance to the nine-county study area. Interviews conducted with the individual transit agencies in the study area further focused on the particular barriers that would affect their agency and/or proposed regional corridors. These barriers reflect the particular transit service concepts, i.e., the ten corridors that are described in Chapter 3. The barriers were grouped into general areas of funding, political, geographic, and operational challenges. **Figure 4-1** below depicts the transit agencies involved, the corridors that were recommended for each, and the other transit agencies in the region that would need to be coordinated with.

Figure 4-1. Proposed Transit Agency Corridors and Coordination

Transit Agency	Corridors	Total # of Corridors	Agencies to Coordinate with
BARTA	Blue, Brown, Red	3	LT, Red Rose
LT	Blue, Brown	2	BARTA
CAT	Blue, Purple, Yellow, Gold, Pink	6	LT, Red Rose, rabbittransit
Red Rose	Red, Purple, Orange	3	BARTA, CAT, rabbittransit
rabbittransit	Orange, Gold, Cyan, Green	3	Red Rose, CAT, ACTA

4.3.1 Funding

Additional funding was identified by each transit agency as critical in order for regional transit to advance without it coming at the expense of their existing service and new and separate funding stream was recommended. With a dedicated funding source available for regional transit coordination, the transit agencies felt that many of these other barriers would be minimized or even eliminated.

Agreeing upon a methodology to share costs between counties, particularly where one county has transit and the other does not, was seen as essential to properly allocate costs. Several agencies warned about not competing with other State-funded programs (e.g., the Amtrak Keystone Corridor) or private intercity bus providers. Ideally the cost of the service provided should break even, but it was noted that as service expands at some point capital funding for new vehicles would be need to be considered.

4.3.2 Political

Several transit agencies cautioned against formalizing what are currently informal agreements between transit agencies or other private service transportation providers. It was agreed, however, that more formalization may be needed for higher levels of coordination. Service priorities must be aligned both across the counties and with regard to existing routes serving the county so as not to “cannibalize” the existing service within a county for the service going outside a county. As experienced in the corridor scoring evaluation matrix (Chapter 5), long extensions into adjoining counties, particularly those without existing transit service would be more difficult to implement, particularly in terms of justifying them to local interests. This would be particularly difficult in counties where a local match is not available or sufficient to cover extension of service.

4.3.3 Geographic

The general perception in the region is that there is limited success in non-Harrisburg CBD-focused regional routes. Regardless of whether this is real or perceived, the lack of free parking

in downtown Harrisburg combined with traffic congestion at rush hour explains the success of current transit services that serve Harrisburg from outlying areas.

Additionally, changes to operating charters of particular agencies may need to be considered if they do not currently include service to a particular county.

4.3.4 Operational

Transit agencies in the study area indicated that vehicle storage and/or use on another route within the service area would need to be resolved, but did not represent a huge concern. Similarly, potential crowding of vehicles at bus bays or hubs would need to be considered, but is not likely to serve as a significant challenge. Additionally, a mechanism would need to be put in place to hold other transit systems accountable to performance requirements (e.g., local response to missed-pull outs on an inter-county trip).

Some of the corridors identified may be too short or lack enough congestion to support a new fixed-route operation. As described in Chapter 3, there are a variety of modes proposed for the corridors, from vanpool to commuter express bus, and it should be emphasized that it is anticipated that the particular modes could evolve over time as they experience growth and success. Additionally, as reverse commute potential grows, additional coordination between transit agencies may need to take place in order to serve destinations at each end of a corridor.

From the passenger's perspective, consistent information, trip planning and user interface, e.g., a single website, would be needed. Moreover, a unified fare mechanism is seen as almost more essential than a unified branding scheme. To address this need, unified fare meetings are starting to be held among the agencies that provide service to downtown Harrisburg.

4.4 Solutions for Consideration in South Central Pennsylvania

Strategies and solutions to overcome these barriers were reviewed with the region's transit stakeholders as part of Transit Roundtable #2. These elements were developed based on national case studies as well as the agencies' lessons learned from previous and ongoing experience with regional transit coordination. In addition to this stakeholder input, several additional efforts were identified as a general series of steps to consider before the details of service coordination are undertaken:

- **Field observation.** An actual drive-through on the potential corridors is a useful way to observe issues that may not be readily obvious (such as traffic conditions, length of trip, potential stops, park and ride locations and their utilization).
- **“Data rich, information poor.”** Be sure to actually use the data collected, justify the cost of data collection and have a plan in place to utilize what is collected. On-board counts and origin-destination data of riders are particularly important and less emphasis should be placed on surveys of non-riders.
- **Corridor parity.** If two agencies are sharing a particular corridor, the operational challenges along it must be considered. For example, specific roadways may be

routinely congested during rush hour and could result in impacts to the criteria that drive the revenue and cost sharing arrangement.

- **Corridor introduction.** A strong launch of a new service is essential to get the word out about new, regional transit services. A commitment of at least two years is typically necessary to determine whether a corridor service will be successful. Commuter Services may be able to help in this regard.
- **Public-private partnerships.** There are several examples of partnerships in South Central Pennsylvania that can be viewed as success stories in facilitating public-private partnerships. Working with employers to provide transit service to accommodate their shifts and provisions with businesses to provide space for park and ride lots are two ways that Commuter Services has been successful in approaching businesses to provide transportation amenities of mutual benefit.

To help shape the larger list of recommendations for the study area, case studies of similar examples of regional transit service in other areas of the US were researched. These case studies provided relatively innovative ideas on the barriers experience by the transit agencies and the different types of organizational frameworks, legislative and funding solutions, and community partnerships that were put in place to help address them. Details on the national examples of regional transit coordination that were examined can be found in the case studies referenced in **Appendix C – Exhibit C-2**. A summary of the barriers and solutions researched from other transit agencies in the US can be found in **Figure 4-2** below.

Figure 4-2 Case Study Barriers and Solutions

Barrier	Solution	Example
Decision-making authority/political issues	Intergovernmental agreements	Metrolink (Los Angeles) H-GAC (Houston MPO)
Sharing Revenues and Costs	Fare Sharing Agreement—separate agencies	MTC (San Francisco)
Service Delivery	Coordinated Service	NJT/SEPTA
Sharing Revenues and costs	Combined fare structure and /or collection	Atlanta
Decision-making authority/political issues	Coordinating Agency	MTC (San Francisco), Pittsburgh, Minnesota (Twin Cities), Sound Transit (Seattle), Phoenix, Chicago RTA, SMART Bus (Detroit)
Decision-making authority/political issues	Transit Contracting Agency	Foothills Transit (Los Angeles suburbs)

Testing of these potential solutions will be further examined in the development of the pilot corridor and documented in Chapter 6 with the development of the implementation plan for the regional transit service corridors.

4.4.1 Organizational Frameworks

In any type of stakeholder agreement, agencies and stakeholders (including local government) have a legitimate concern to know who benefits from, and who pays for, service improvements.

Some agencies may be protective of their traditional “turf” or concerned that they will not have adequate control over operations involving other operators. A variety of multi-agency coordination agreements were identified and shared with the JSC and further discussed at the second Transit Roundtable. It was agreed by the JSC that any solutions or strategies to move forward must be context-sensitive and acceptable to the agencies and stakeholders involved in a cooperative arrangement.

A variety of organizational frameworks are utilized in agencies around the country; these are highlighted in **Figure 4-3** below.

Figure 4-3 Coordination Types

Coordination Type	Description	Advantage	Example
Direct Purchase of Transit Services	Transit agency purchasing services directly from a second transit agency	Quick implementation; highly-limited contract	Pittsburgh
Coordination Agreement	Bringing together autonomous transit agencies on coordinated facilities	Agreement limited to unified services	SEPTA/NJ Transit
Joint Powers Agreement	Contract between local governments to provide transit services	Agreement between governments, not transit agencies	LA Metro
Umbrella Agency	New entity a layer above the participating transit operators	Shared governance and costs, but limited by the independent participants	Atlanta and Phoenix
Creation of New Transit Entity	New agency to oversee provision of transit services to unified geographic territory	Simplicity of planning, capital programming, and elimination of administrative duplication; no need for service and facilities-based contracts between agencies	Seattle

These organizational frameworks were discussed at the second Transit Roundtable along with the strengths and weakness of each approach. It was agreed that informal arrangements represent a good starting point for regional coordination and can serve as a model for initial coordination efforts. Over time, opportunities to expand coordination within the context of the larger region are of interest, so an incremental approach to coordination may be easier than a more formalized process.

There are already examples of coordination in the region, e.g., Adams and York Counties for regional transit service, and several different transit agencies provide service to downtown Harrisburg. Despite this initial coordination, connections between transit systems, the lack of a coordinated fare structure, and a lack of common fare media will continue to be a significant issue, but there is an expectation among the transit systems in the study area that this can and will be worked out. The regional fare coordination meetings referenced in Section 4.3.4 are one example of how this is already being addressed in the region.

As the region continues to grow and develop into one large metropolitan area, the sharing of transit resources will become more of an opportunity as well as a challenge. Potentially an umbrella-type agency could then serve to address institutional issues, e.g., SRTP. An umbrella agency is seen as a valuable structure for planning and capital programming that would likely

lead to consistency of approach for routes or services that provide regional connectivity. As a facilitator for regional transit coordination, SRTP could also assist with the “look and feel” of transit service from the passenger’s perspective.

There is definite interest in continuing to work with PennDOT to encourage them to play a substantial role in helping regions coordinate transit service. Oversight will be needed to manage the sharing of funds and demonstrate the value of regional transit coordination to local counties. Additionally, political will is needed to help county or city-based systems look beyond their geographic boundaries. A big challenge for existing transit agencies is to provide additional service to counties where there is not currently public transit service. PennDOT can help drive these efficiencies and assist with the political process.

4.4.2 Legislation and Funding

The desire to provide input on the best ways to help fund regional transit cannot be overemphasized. While there are currently no new demonstration projects being awarded, the mechanism for their execution is still in place and these remain a likely source for funding future regional transit coordination. PennDOT supports regional coordination as a way to identify potential cost savings, e.g., administrative services and operational coordination. Potentially, any savings from this coordination could be used to provide additional regional service. Consideration of capital funds needed for new vehicles, fare collection systems or other expenditures will also need to be addressed and is seen as more of a challenge than operating funds.

The importance of local transit and its benefits needs to continue to be shared with local elected officials. Control of the funding for this service will be with the local governments and legislation will need to reflect local interests, i.e., what they are willing to support with funding. A local tax is not likely to be on the table given the prevailing political realities. The role of the County Commissioners in regional transit coordination will need to be further defined. It will be the responsibility of the transit agencies to provide options for the local governments to choose from and then subsequently fund.

At present, Congestion Mitigation Air Quality (CMAQ) and state demonstration grant funding are available for pilot regional transit coordination service, but there is no long-term funding source. It is anticipated that the State’s transportation funding bill will be a comprehensive transportation funding package and include all modes, including rail freight, airports, highways and transit. The current window for this legislation is to be developed in the fall of 2011 timeframe. In any legislation there will likely be some performance measures in place to evaluate the service. The performance criteria developed as part of Act 44 may be used and include:

- Passengers per revenue vehicle hour
- Operating costs per revenue vehicle hour
- Operating revenue per revenue vehicle hour
- Operating costs per passenger

Potential legal impediments to inter-county travel may be found in individual transit agencies' articles of incorporation and may need to be addressed for each transit agency. Generally, how an agency is incorporated and how it is funded is closely related.

The knowledge of potential funding sources is of maximum importance. For example, the Metropolitan Planning Organizations (MPOs) have the ability to transfer highway funds to transit (e.g., CMAQ funding), but this is sometimes difficult to achieve in a state with a profound need for roadway and bridge maintenance. However, opportunities exist to implement roadway-based solutions to speed transit operations such as queue jumping and creative use of roadway shoulders. These improvements could make transit faster than an auto commute and serve as a more attractive travel choice. The Harrisburg Area MPO, Tri-County Regional Planning Commission, is studying such improvements in the Carlisle area. Additional funding for carpools and vanpools also needs to be investigated and applied for as warranted.

4.4.3 Community Partnerships

Employers throughout the United States have been partnering with transportation providers to encourage employees to use alternative means of transportation to get to work beyond a single-occupant vehicle. There are several ways that employers have been promoting the use of existing transportation services including:

- Covering the cost of transit passes/providing pre-tax transit benefits,
- Providing information on the available options of transit,
- Offering shuttle service to nearby transit connections

The potential for public-private partnerships (P3s) will continue to be an important relationship between businesses and transit agencies and it is essential to educate businesses on “what’s in it for them.” These benefits include increased access to a larger geographic area from which to draw employees, and reduce employee absenteeism and tardiness. P3s are one way to advance additional park and-ride locations, which are a key ingredient to the success of regional transit coordination in the study area. For example, park and rides at shopping malls are often seen as win/win situations between the transit agencies and the malls because the parking lots are rarely full and the transit users often shop before or after work.

Commuter Services has numerous existing programs in place with the region’s employers. These include vanpools to Letterkenny Army Depot, carpools to Hershey Foods, and the Emergency Ride Home Program from East Penn Manufacturing in conjunction with BARTA service to the facility.

Partnerships with local government on the linkages between transit and land use are also invaluable to facilitate regional transit coordination. Education on local ordinances to encourage transit-friendliness includes planning concepts such as:

- Locating buildings close to the road vs. behind large parking lots
- Sidewalks connecting to the building
- Bus pull-offs in a location convenient to the building

- Turning radii to accommodate buses
- Increasing density to make transit a more viable choice.

Appendix C – Exhibit C-3 provides specific examples of transit agency partnerships with the business community that has been of benefit.

5 Regional Transit Service Concepts and Evaluation

The goal of this task was to create an evaluation model to objectively assess the identified bus corridors to develop initial service concepts for the short-, mid-, and long- term across the nine-county study region. This evaluation model was designed to reflect the transportation needs of South Central Pennsylvania while remaining applicable to other counties or regions that wish to assess their transit coordination needs.

The evaluation methodology includes on-going and recently-completed long-range planning efforts of the transit agencies involved, as well as the current and projected local demographics, land use and policy factors. The measures and criteria were developed to be used as a replicable tool that can be applied in subsequent, periodic route evaluations by the various transit agencies. The measures and standards are aligned with the overall purpose statement and supporting objectives (developed in Chapter 1) for the development of transit programs and projects within South Central Pennsylvania.

This “sketch-level” tool developed for this task combines broad policy with objective criteria to help guide the decision-making process to *prioritize* the most appropriate locations and intensities of coordinated transit service. The intent of this prioritization process is to provide guidance as to which projects make the most sense in light of limited future funding resources.

5.1 Evaluation Criteria

Following the methodology discussed in Chapter 3, the study team established ten key corridors for regional transit coordination in the nine-county study area. **Figure 5-1** below presents these corridors.

Figure 5-1. Corridor Descriptions

	BLUE CORRIDOR	ORANGE CORRIDOR	BROWN CORRIDOR	PURPLE CORRIDOR	GREEN CORRIDOR
Counties Served	Berks, Lebanon, Dauphin	York, Lancaster	Berks, Lebanon	Lancaster, Dauphin, Lebanon	Adams, York, Cumberland
Primary Route	I-81	PA 462/US-30	US-422	PA-283	US-15/PA-74
	RED CORRIDOR	YELLOW CORRIDOR	PINK CORRIDOR	GOLD CORRIDOR	CYAN CORRIDOR
Counties Served	Berks, Lancaster	Franklin, Cumberland,	Dauphin, Perry	York, Cumberland	Adams, York
Primary Route	US-222	I-81	US-11/15	I-83/PA 581	US-30/PA-94/PA-116

In order to determine the priority of which corridors could be implemented first, the study team developed a series of evaluation criteria against which all corridors could be objectively measured. These criteria were developed based on several considerations. Most importantly, the criteria were aligned with the study’s goals and purpose statement (Chapter 1). The criteria were

developed such that the corridors could be evaluated relative to each other qualitatively while not subject to the rigors of a travel demand model or other quantitative means. The criteria were established with a full concurrence of the JSC.

Several iterations of the evaluation criteria were developed and reviewed with the JSC. Initially, an exhaustive list of criteria was presented to the JSC. The various criteria identified for consideration represented a long list of criteria that reflected the prior efforts of the study, including regional growth, inter-county travel trends, and availability of park and rides along the corridor. After several meetings, the study team came up with a shorter list of most the most important criteria to be utilized. This memorandum presents the final criteria used for the study and explanations of each.

The resulting list of 12 criteria was used to compare the corridors. These criteria were designed to be mutually exclusive and to minimize overlap on what is being evaluated. For example, no two criteria compare current employment density; similarly, no two criteria compare future population growth. The list below summarizes the evaluation criteria used followed by more detailed explanations of each.

- Number of non-single occupant vehicle commuters
- Job density
- Population density
- Connects trip origins and destinations
- Corridor serves zero-car households
- Ability to create public-private partnership
- Incentives to use transit
- Potential for future population growth
- Availability and capacity of existing park and ride locations
- Provides for transit connections
- Ease of implementation
- Ability to expand service

Detailed explanation of each criterion is presented below in the form of questions to be considered as one goes through the exercise of qualitatively evaluating each corridor. Also presented are the potential values for each criterion that were used in evaluating the alternatives.

1. Number of non-single occupant vehicle commuters

How does the corridor fare in terms of transit-oriented demographics, such as: workers commuting alone? This demonstrates how many drivers are currently commuting alone along each corridor and may be less likely to use transit. *Possible values: High; Medium; Low*

2. Job density

How does the corridor fare in terms of transit-oriented demographics, such as: job density? A higher job density within a corridor is likely to positively correlate to higher need for transit. *Possible values: High; Medium; Low*

3. Population density

How does the corridor fare in terms of transit-oriented demographics, such as population density? A higher population density along the corridor is likely to positively correlate to demand for transit. *Possible values: High; Medium; Low*

4. Connects trip origins and destinations

Does the corridor connect trip origins and destinations? Do people who work close to the corridor also live close to the corridor? *Possible values: To a large extent; To a medium extent; Does not connect*

5. Corridor serves zero-car households

Does the corridor serve zero-car households? If a corridor passes through areas with many zero-car households, a ranking of "to a large extent" should be assigned. *Possible values: To a large extent; To a medium extent; To a lesser extent*

6. Ability to create public-private partnerships

Does the corridor allow for possibility of creating public-private partnerships whereas private companies along the corridor are likely to finance, or help finance, bus shelters, signage/advertising, and other subsidies or amenities to benefit the transit operator and/or passengers? *Possible values: High; Medium; Low*

7. Incentives to use transit

Are there actual incentives that will likely shift commuters from driving to using transit? These incentives include paid parking or lack of parking, long distance trips, unacceptable traffic congestion, and other considerations. For instance, if commuters currently have to pay for parking, opportunities exist to incentivize transit using cost considerations. *Possible values: High; Medium; Low*

8. Potential for future population growth

How much growth in population is expected to occur in the future on this route? If a corridor passes through an area with large projected population growth, a greater need for transit would arise. *Possible values: High; Medium; Low*

9. Availability and capacity of existing park and ride (P&R) locations

How many P&R locations are currently available along the corridor and is there any capacity at them for new transit rider parking? For example, if there is no capacity at P&R locations along the route, a ranking of "low" is assigned. *Possible values: High; Medium; Low*

10. Provides for transit connections

Does the route provide for intermodal connections to rail service, airports, or other bus routes? If so, a ranking of "to a large extent" should be assigned. *Possible values: To a large extent; To a medium extent; To a lesser extent*

11. Ease of implementation

Are there major obstacles to the implementation of the corridor? These obstacles could be related to physical constraints (such as existing traffic on the alignment which would make running the service difficult) or other institutional or agency challenges. *Possible values: High; Medium; Low*

12. Ability to expand service

Is there a possibility to expand or modify the route in the future? Is there a possibility to add more service? For instance, if there is only one limited access roadway between two destinations, would the transit agencies be limited if they decided to make any changes in the alignment? *Possible values: Yes; No*

These criteria were developed reflective of the study's previous steps, including the needs investigation and evaluation of existing and future conditions. The demographics efforts included analysis in areas such as changes in population, land use and employment within the study area.

5.2 Scoring Methodology

Twelve criteria were used to evaluate the ten transit corridors. The final score derived from the evaluation matrix is a number on a scale from 0 to 100 with 100 being the best possible score. The scoring system also allows for different weights to be assigned to each of the twelve criteria.

If equal weights are assigned to each criterion, then each criterion contributes a maximum of 8.33 points (and minimum of zero) toward a maximum overall score of 100. The score from each of the twelve criteria are added up together for a final overall score. As a result, if each criterion received a full score of 8.33, the corridor would have received a total of 100 points.

Each of the twelve criteria has two to three possible values assigned to them by the study team (possible values are also presented in Section 5-1). The possible values range between 0% and 100% of the total 8.33 points. If there are two values assigned to a text score, then the final value is either 0% or 100%; if there are three values assigned, then the text score is converted to 0%, 50%, or 100% of the 8.33 points.

The evaluation matrix allowed for different weights to be assigned to various criteria. By default, a weight of 1.0 is assigned. If the study team believed that a greater importance is given to a certain criteria, then a weight greater than 1.0 could be assigned to one or more criteria. If that occurs, then the criteria with a higher weight can get a proportionally greater share of the overall score of 100%. For example, if a weight of 4.0 is assigned to one of the criteria, then all other criteria have proportionally one-fourth of the share of the original weight in the total.

5.3 Score Assignment

The scores assigned to the ten evaluated corridors were not completed based on numeric evaluation as the study did not involve a travel demand model. However, a more qualitative

approach was utilized using the following maps and tables developed for the study. More information on these tools can be found in Chapter 2, Existing and Future Conditions:

- Population density
- Employment density
- Heat map
- Map of zero-car households
- Map of existing park and ride locations
- Map of existing transit routes
- Data on population growth

To ensure consistency of the results, the scores were reviewed independently by the JSC. The score used in the final rankings was the one which was agreed upon by the entire JSC. Disagreements between study team members were resolved with supporting data and a definitive conclusion was reached. Quantitative analysis may be useful in the near future to further evaluate other corridors or as a possible way to identify need in other areas looking at service coordination. A combination of the quantitative and qualitative may yield the best results.

5.4 Results

Once the study team assigned the scores to each of the 12 criteria, different weights were assigned to criteria considered strategically important to the study. **Figure 5-2** summarizes the ranks assigned to each score as well as the order of the corridors if equal weights are assigned to each criterion.

5.4.1 Base scenario

Equal weights were assigned to each criterion in the base scenario. Based on this option, the following corridors received the highest scores:

1. Orange
2. Gold
3. Brown
4. Red

In **Figure 5-2**, corridors in the “top tier” are highlighted in green while corridors in the lowest tier are highlighted in orange. Those corridors in the middle tier are highlighted in yellow.

Figure 5-2. Results of the Base Evaluation Scenario

	Weight	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	Ability to expand service
		Number of non-single occupant vehicle commuters	Job density	Population Density	Connects trip origins and destinations	Corridor serves zero car households	Ability to create public- private partnerships	Incentives to use transit	Potential for future population growth	Availability and capacity of existing P&R locations	Provides for transit connections	Ease of implementation		
Orange		Medium	High	High	To a large extent	To a large extent	High	Medium	Medium	High	To a large extent	High	Yes	
Gold		Medium	High	High	To a large extent	To a medium extent	Medium	Medium	High	High	To a large extent	High	Yes	
Brown		Medium	Medium	Medium	To a large extent	To a large extent	High	High	High	Medium	To a large extent	High	Yes	
Red		Medium	Medium	High	To a large extent	To a large extent	Medium	Medium	High	High	To a large extent	Medium	Yes	
Purple		Medium	High	Medium	To a medium extent	To a large extent	High	High	Medium	Medium	To a medium extent	Medium	Yes	
Blue		Medium	Low	Low	To a medium extent	To a medium extent	Medium	High	Medium	Medium	To a large extent	Medium	Yes	
Yellow		High	Low	Low	To a medium extent	To a lesser extent	Medium	Medium	Medium	High	To a medium extent	Low	Yes	
Pink		High	Low	Low	To a medium extent	To a lesser extent	Medium	Low	Low	High	To a medium extent	Medium	Yes	
Green		Medium	Low	Low	To a medium extent	To a lesser extent	Medium	Low	High	Medium	To a lesser extent	Medium	Yes	
Cyan		High	Low	Low	To a medium extent	To a medium extent	Medium	Low	Low	Low	To a medium extent	Low	Yes	

5.4.2 Scenario #1

In the next iteration of the matrix, the study team assigned a weight of 4 to the “ease of implementation” criterion. This made this criterion four times more important than the 11 other criteria. The study team felt that “ease of implementation” is an overarching criterion significantly more vital to the success of a corridor’s implementation versus the other criteria. The results are presented in **Figure 5-3**. Based on this scenario, a similar arrangement of corridors was presented in the top tier:

1. Orange
2. Gold
3. Brown
4. Red

Figure 5-3. Results of Evaluation Scenario #1

	Weight	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	4.00	1.00
		Number of non-single occupant vehicle commuters	Job density	Population Density	Connects trip origins and destinations	Corridor serves zero car households	Ability to create public- private partnerships	Incentives to use transit	Potential for future population growth	Availibility and capacity of existing P&R locations	Provides for transit connections	Ease of implementation	Ability to expand service
Orange		Medium	High	High	To a large extent	To a large extent	High	Medium	Medium	High	To a large extent	High	Yes
Gold		Medium	High	High	To a large extent	To a medium extent	Medium	Medium	High	High	To a large extent	High	Yes
Brown		Medium	Medium	Medium	To a large extent	To a large extent	High	High	High	Medium	To a large extent	High	Yes
Red		Medium	Medium	High	To a large extent	To a large extent	Medium	Medium	High	High	To a large extent	Medium	Yes
Purple		Medium	High	Medium	To a medium extent	To a large extent	High	High	Medium	Medium	To a medium extent	Medium	Yes
Blue		Medium	Low	Low	To a medium extent	To a medium extent	Medium	High	Medium	Medium	To a large extent	Medium	Yes
Pink		High	Low	Low	To a medium extent	To a lesser extent	Medium	Low	Low	High	To a medium extent	Medium	Yes
Green		Medium	Low	Low	To a medium extent	To a lesser extent	Medium	Low	High	Medium	To a lesser extent	Medium	Yes
Yellow		High	Low	Low	To a medium extent	To a lesser extent	Medium	Medium	Medium	High	To a medium extent	Low	Yes
Cyan		High	Low	Low	To a medium extent	To a medium extent	Medium	Low	Low	Low	To a medium extent	Low	Yes

5.4.3 Scenario #2

In the next iteration of the matrix, the study team assigned a weight of four to three different criteria: “incentives to use transit,” “potential for future population growth,” and “ease of implementation.” The results are presented in **Figure 5-4**. The following corridors scored in the top tier for this scenario:

1. Brown
2. Gold
3. Orange
4. Red

It was this iteration of the scenario testing that was agreed upon by the JSC to be used as the final version.

Figure 5-4. Results of Evaluation Scenario #2

	Weight	1.00	1.00	1.00	1.00	1.00	1.00	1.00	4.00	4.00	1.00	4.00	1.00
		Number of non-single occupant vehicle commuters	Job density	Population Density	Connects trip origins and destinations	Corridor serves zero car households	Ability to create public- private partnerships	Incentives to use transit	Potential for future population growth	Availabilty and capacity of existing P&R locations	Provides for transit connections	Ease of implementation	Ability to expand service
Brown		Medium	Medium	Medium	To a large extent	To a large extent	High	High	High	Medium	To a large extent	High	Yes
Gold		Medium	High	High	To a large extent	To a medium extent	Medium	Medium	High	High	To a large extent	High	Yes
Orange		Medium	High	High	To a large extent	To a large extent	High	Medium	Medium	High	To a large extent	High	Yes
Red		Medium	Medium	High	To a large extent	To a large extent	Medium	Medium	High	High	To a large extent	Medium	Yes
Purple		Medium	High	Medium	To a medium extent	To a large extent	High	High	Medium	Medium	To a medium extent	Medium	Yes
Blue		Medium	Low	Low	To a medium extent	To a medium extent	Medium	High	Medium	Medium	To a large extent	Medium	Yes
Green		Medium	Low	Low	To a medium extent	To a lesser extent	Medium	Low	High	Medium	To a lesser extent	Medium	Yes
Yellow		High	Low	Low	To a medium extent	To a lesser extent	Medium	Medium	Medium	High	To a medium extent	Low	Yes
Pink		High	Low	Low	To a medium extent	To a lesser extent	Medium	Low	Low	High	To a medium extent	Medium	Yes
Cyan		High	Low	Low	To a medium extent	To a medium extent	Medium	Low	Low	Low	To a medium extent	Low	Yes

As summarized in **Figure 5-5** below, the same four corridors consistently scored in the top tier of each evaluation scenario, which was an indication of their readiness to be considered for short-term implementation.

Figure 5-5. First Tier Corridors for Implementation

<i>BASE SCENARIO</i>	<i>SCENARIO 1</i>	<i>SCENARIO 2</i>
• Orange	• Orange	• Brown
• Gold	• Gold	• Gold
• Brown	• Brown	• Orange
• Red	• Red	• Red

As mentioned in earlier in this section, this first tier of corridors is comprised of those that could be considered for implementation in the shorter-term (i.e., the next three years); the middle tier in the mid-term (within five years); and the lowest tier in the longer-term (within 20 years). Of course, a transit agency or multiple transit agencies could together advance a corridor that was not in the first tier sooner than the time frame or tier assigned to it, but the scoring of the corridors provides a rough guide for implementation that is further discussed in Chapter 6, Implementation Plan.

6 Implementation Plan

6.1 Introduction

Following regional consensus on corridors to pursue for short-term implementation as described in Chapter 5, the following steps are then to be initiated for each corridor identified:

- Pre-Implementation Planning
- Inventory of Existing Resources
- Initial Service Planning
- Integration Steps
- Service Launch Planning
- Performance/Market Monitoring
- Timing and Type of Service Upgrades
- Maintenance/Adjustment of Service

This following sections detail each step of the implementation process with a pilot demonstration corridor as the example. The development of a pilot demonstration project in the US 422 Corridor (identified in this study as the Brown Corridor) provides more than an instructional guidance on implementation steps for the two agencies that share this route. The approach outlined herein is also intended to establish the general framework for initiating service in any of the corridors that were ranked in this study, illustrating how to establish, monitor, and progressively modify transit service concepts to enhance mobility options for inter-county commuters.

6.2 Pre-Implementation Planning

The first step in the process is to identify where the corridor and the counties it traverses fits within the generalized models for establishing new service. In some cases, no pre-existing corridor service or transit providers will alter the approach for establishing a new inter-county route. A series of eight (8) questions have been developed to frame the transit, governance, and general market for new services. These questions have been answered for the US 422 corridor, for both Lebanon (Lebanon Transit) and Berks (BARTA) counties. The result of this step for other corridors will reveal the degree to which new agencies, service or infrastructure may need to be pursued in the initial design of transit services. **Figure 6-1** presents this initial analysis for both Lebanon and Berks County along the US 422 corridor.

Figure 6-1. Corridor Pre-Implementation Checklist

Current Public Transit Services	COUNTY 1		COUNTY 2	
	Lebanon		Berks	
	In Corridor? Y/N	Elsewhere? Y/N	In Corridor? Y/N	Elsewhere? Y/N
Transit agency offering fixed-route services?	Yes	Yes	Yes	Yes
Service extension/connection possible?	Yes	Yes	Yes	Yes
Large central business district (any) directly served?	No	Yes	Yes	No
Commuter-based services offered?	No	Yes	Yes	No
Peak services offered?	No	Yes	Yes	Yes
Infrequent community-based services offered?	Yes	Yes	No	Yes
Carpool/Park and ride infrastructure present?	No	Yes	Yes	Yes
Existing vanpools/employee-sponsored services?	No	Yes	No	Yes

The selection of the US 422 corridor between Reading and Lebanon represents a short-term implementation timeline insomuch as both counties have existing fixed-route transit operations operating in relative close proximity to one another, and there has been an expressed interest and willingness of establishing a connection between transit agencies. This corridor further demonstrates the implications in establishing service that is not destined to the Harrisburg CBD, currently the region's most populous and concentrated transit hub.

The distance from the Lebanon Transit Center in Lebanon, PA to the BARTA Transit Center in Reading, PA is approximately 31 miles. US 422 does not provide limited access within this corridor nor consistent high speed travel due to the town centers and signalized intersections traversed. There exists no alternative higher speed highway route to travel between these two locations, and current estimated automobile time without congestion along this corridor is approximately 45 minutes.

6.3 Inventory of Existing Resources

With the checklist complete, it is then possible to take stock of the resources (organizational, institutional) already on hand that contribute to existing corridor transit service and what role, if any, these resources may be able to contribute to newly envisioned services. In the US 422 corridor, the presence of two established transit providers facilitates the organizational aspects of providing service. Existing routes, however, may prove more difficult to integrate into new services without extensive modification that may disrupt an established ridership base. These considerations are explored in more detail as BARTA provides extensive service within the corridor, while Lebanon Transit focuses much more limited community-based service towards the border with Berks County.

BARTA provides service throughout a significant portion of this corridor with its Route 14 service. This service is known as the Wernersville via Sinking Springs route, featuring 27 weekday runs over a span from 5:00 AM to 6:00 PM. Headways are every 30 minutes. A total of 15 weekday runs are extended from Wernersville to a park and ride location in Womelsdorf, with these extended runs designed to support commuting trips with AM and PM service primarily and very limited mid-day runs. The service to Womelsdorf covers approximately one-half (15 miles) of this corridor and is scheduled for one hour of travel time in each direction.

Lebanon Transit does not currently provide a comparable level of service along its portion of the US 422 corridor. The service currently provided is a circulator route serving eastern Lebanon County with a portion of the route operating on US 422 between Lebanon and Myerstown. A total of three weekday runs are provided with service primarily focused on community connections to vocational employment services and training. The entire run out and back from Lebanon is scheduled at 1 hour and 10 minutes. These two services in Lebanon and Berks County operate as close as 2 ½ miles (Womelsdorf – Newmanstown) from each other. The services represent two different approaches to service delivery and focus on trip type/passenger, therefore presenting a case study in service design and integration within this corridor.

During this study and in the ranking of corridors for pursuit of demonstration projects, significant weight was placed upon the ‘ease of implementation.’ This generally captures the extent to which existing resources are already present and capable to contribute to establishing a new inter-county route. This reflects the fact that start-up time for service varies based on the conditions in each corridor. For example, for any corridor inclusive of counties that currently do not operate any transit service, additional steps will be required to allocate capital funding. This step precedes even the pursuit of operating funds, as the capital requirements for vehicles, facilities, or other infrastructure would not likely be in place. Once a base understanding of the organization, transit routes/schedules, and amenities within the corridor has been achieved, the initial planning of services can commence.

6.4 Initial Service Planning

The service planning component will be the first step in coordinated cooperation among transit providers and counties. If not already clear in the preceding steps, at this stage of implementation it will become apparent that one agency or county may reflect a greater need for transit investment or benefit more from the service provided. The success in sharing the effort during the planning phase and developing an as equitable as possible service plan will shape the future agreements needed to operate the service and shared cost/revenue.

The first service planning decision for any corridor is the specific mode of transit, which ultimately defines the level of service and intensity of the investment. This study has considered modes other than fixed-route bus, and the decision on mode and the types of schedules to be developed is generally based on the community support, the demonstrated demand (as expressed in personal desire and geographic convenience) by the potential consumers of the service. The initial service planning steps include:

- **Gain a rudimentary understanding of the market** - For services that essentially function as an extension of existing commuter-based routes, a license plate survey at the terminal location can provide insight into where more distant riders are originating and a potential new end-point of an extended route. For corridors where two existing transit routes may be connected or enhanced, this catchment analysis may need to be performed on each separate existing route, through license plate or seat drop survey mechanisms. In locations where no service exists, the transit market is relatively untested. A strong local partner, such as a community or major employer, would be needed to justify such expansion in the absence of any other planning analysis or research regarding current auto-based commuting patterns and the potential to convert those to carpool, vanpool, or fixed-route transit.
- **Coordinate with localities to determine routing, stops, and level of support** - Provide public engagement to communities identified in the initial market analysis, which represent where multiple commuters originate. If, due to the rural nature, no specific community stands out, provide public involvement opportunities in the communities that would represent stops along extended service. Both residents who may benefit from using a park and ride facility closer to home, as well as residents who may reside adjacent to increased transit operations will provide valuable input and guidance. The local interest at this stage may determine the level of investment. If the number of new potential riders gained through service expansion is relatively small, a targeted vanpool or connector service enhancement may be more suitable than design of fixed-route services. The service type is also dictated by the community response. If more special-needs (seniors, medical assistance) demand is determined, a commuter-based schedule without mid-day returns would likely not be well suited for such a market.

In the US 422 Corridor, an understanding of the market can occur concurrent with an initial service plan. As an established demonstration project helps to define and grow the market, a second phase of service planning can be tailored to the needs of the community and operators. This two-phased approach may be applicable in many corridors. It is important to note, however, that the initial phase of service should be of a sufficient level to truly test ridership demand. In analysis of the initial schedules (see **Figures 6-2 and 6-3**) for Lebanon Transit and BARTA, and initial connection between the two systems in Womelsdorf was deemed the most logical. BARTA currently provides regular and commuter-based service and would therefore not need to alter the existing Route 14 service within the corridor. Lebanon Transit, however, features community circulators which run in the corridor only three times each weekday. A new connecting service offered by Lebanon Transit would therefore be needed rather than a modification of their existing routes. The initial service planning also needs to consider the dominant destination. Since commuter-based services need to arrive at a central business district around the 7:00-8:00am peak hour and depart around the 5:00-6:00pm peak hour, the service schedules need to reflect this. In the US 422 corridor, the City of Reading is approximately three

times larger than the City of Lebanon, so initial service planning could support connections from/to Lebanon County that arrive/depart the City of Reading during the peak hour. It is also a valid consideration that since the new service added will be specifically a Lebanon Transit service, that its schedule should best serve a commuter connection to the City of Lebanon. Finalizing these arrangements will ultimately be a function of the market research and analysis (demand for trips and trip direction) and the operating agreements established.

Figure 6-2. Existing Lebanon Transit Service to Myerstown (on US 422)

Lebanon Transit Route 14/Quest EAST (160 - Myerstown)					
Circulates "Clockwise"					
7th and Willow	Myerstown	Newmanstown	Kleinfeltersville	7th and Willow	
7:00 AM	7:29 AM	7:43 AM	7:52 AM	8:13 AM	Quest EAST (160)
Circulates "Counter-clockwise"					
7th and Willow	Kleinfeltersville	Newmanstown	Myerstown	7th and Willow	
9:00 AM	9:39 AM	9:47 AM	10:04 AM	10:25 AM	Route 14
3:10 PM	3:40 PM	3:49 PM	4:07 PM	4:30 PM	Quest EAST (160)

Figure 6-3. Existing BARTA Route 14 Schedule - Eastbound

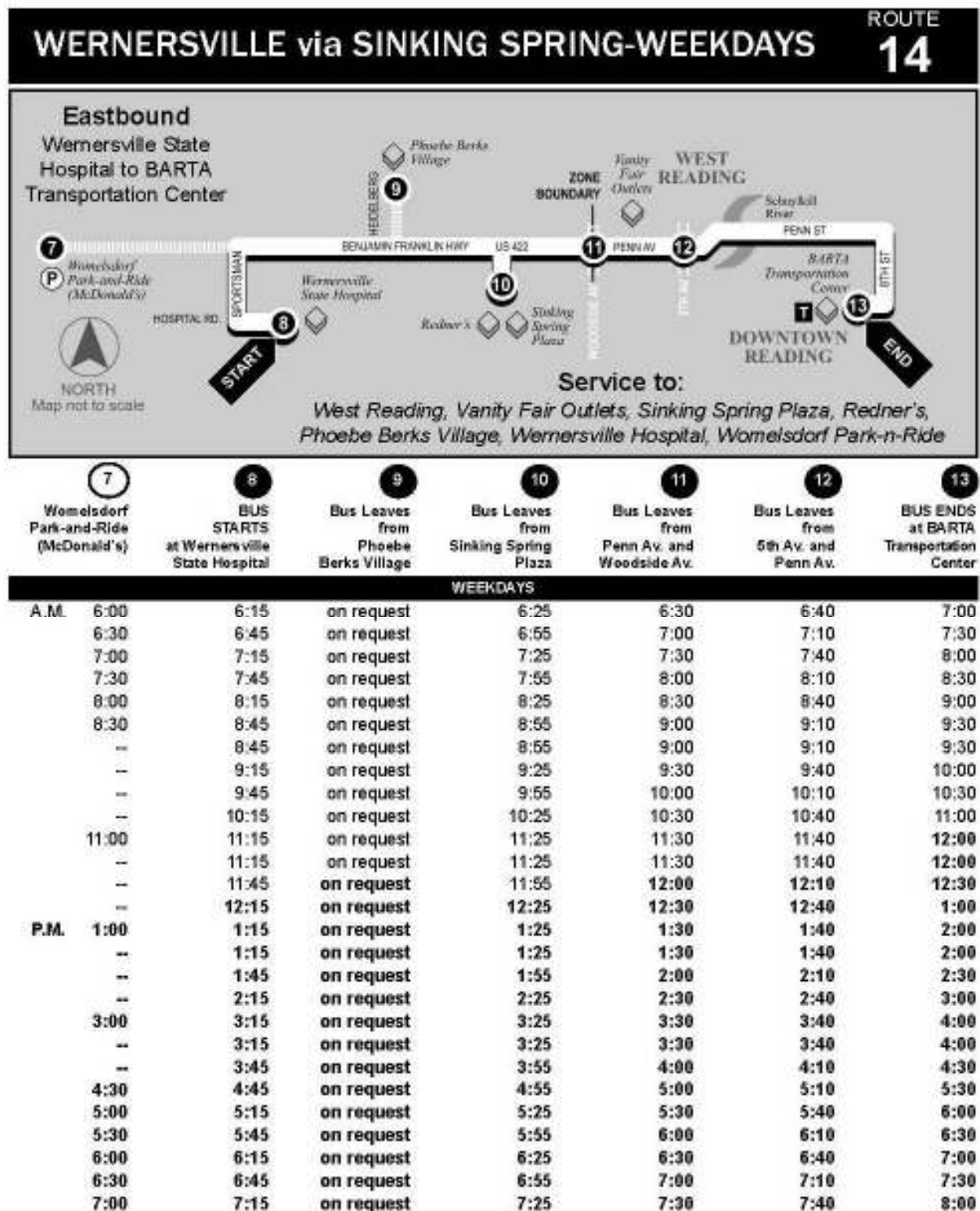
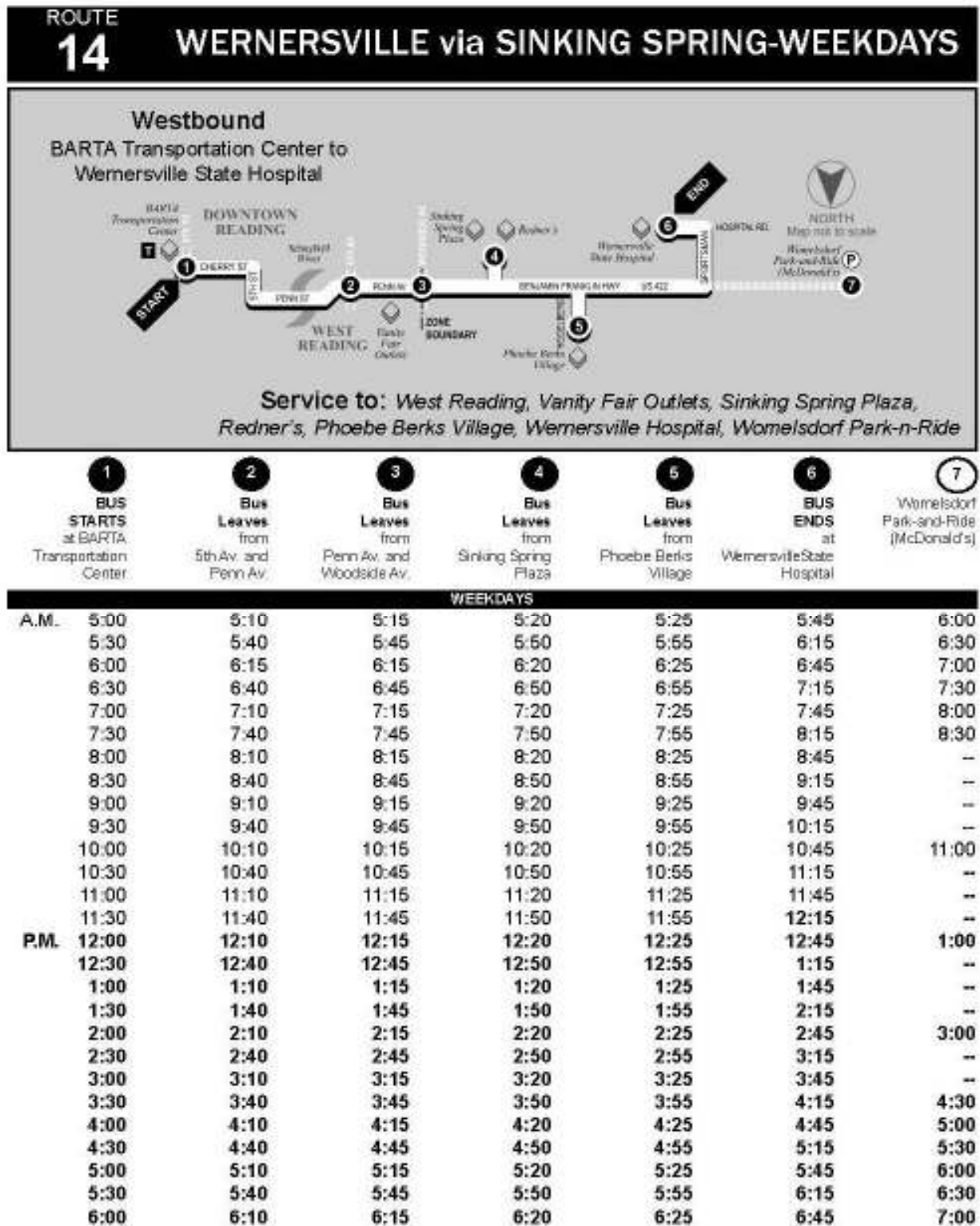


Figure 6-3 (continued). Existing BARTA Route 14 Schedule – Westbound



The initial service planning approach is to provide a connection from Lebanon via Lebanon Transit to Womelsdorf, where a connection to the existing BARTA Route 14 service can provide access to Reading and other intermediate stops. To accommodate commuter schedules, the service should provide three (3) AM, one (1) midday, and three (3) PM runs to/from Womelsdorf. The connection opportunity would also allow reverse-commute riders to reach Lebanon during the AM and return to Reading in the PM. This new service from Lebanon Transit would initially consist of seven (7) new runs on weekdays only. Assumptions on travel speeds, which determine that a round trip time to/from Womelsdorf would take approximately 1 hr 30 minutes were derived from the published BARTA schedules on US 422 and analysis of auto travel time. The time estimates recognize that higher speeds are attained in more rural segments of the route versus within the more dense surroundings of central Lebanon/Reading. The sample schedule for initial service is depicted in **Figure 6-4**.

Figure 6-4. Sample Schedule

US 422 Demonstration Project

SKETCH SCHEDULE - INITIAL SERVICE

RUN	EASTBOUND									
	LEBANON COUNTY				BERKS COUNTY					
	7th & Willow	15th Av. & King	County Fair (Myerstown)	Womelsdorf	Wernersville State Hospital	Phoebe Berks Village	Sinking Springs	Penn Av. & Woodside	5th Av. & Penn Av.	8th & Cherry
LT 1	5:15 AM	5:24 AM	5:39 AM	5:57 AM						
BARTA 1				6:00 AM	6:15 AM		6:25 AM	6:30 AM	6:40 AM	7:00 AM
LT 2	5:45 AM	5:54 AM	6:09 AM	6:27 AM						
BARTA 2				6:30 AM	6:45 AM		6:55 AM	7:00 AM	7:10 AM	7:30 AM
LT 3	6:15 AM	6:24 AM	6:39 AM	6:57 AM						
BARTA 2				7:00 AM	7:15 AM		7:25 AM	7:30 AM	7:40 AM	8:00 AM
BARTA 3				7:30 AM	7:45 AM		7:55 AM	8:00 AM	8:10 AM	8:30 AM
BARTA 4				8:00 AM	8:15 AM		8:25 AM	8:30 AM	8:40 AM	9:00 AM
BARTA 5				8:30 AM	8:45 AM		8:55 AM	9:00 AM	9:10 AM	9:30 AM
BARTA 6				11:00 AM	11:15 AM		11:25 AM	11:30 AM	11:40 AM	12:00 PM
LT 4	12:15 PM	12:24 PM	12:39 PM	12:57 PM						
BARTA 7				1:00 PM	1:15 PM		1:25 PM	1:30 PM	1:40 PM	2:00 PM
BARTA 8				3:00 PM	3:15 PM		3:25 PM	3:30 PM	3:40 PM	4:00 PM
BARTA 9				4:30 PM	4:45 PM		4:55 PM	5:00 PM	5:10 PM	5:30 PM
BARTA 10				5:00 PM	5:15 PM		5:25 PM	5:30 PM	5:40 PM	6:00 PM
LT 5	4:45 PM	4:54 PM	5:09 PM	5:27 PM						
BARTA 11				5:30 PM	5:45 PM		5:55 PM	6:00 PM	6:10 PM	6:30 PM
LT 6	5:15 AM	5:24 AM	5:39 AM	5:57 AM						
BARTA 12				6:00 PM	6:15 PM		6:25 PM	6:30 PM	6:40 PM	7:00 PM
LT 7	5:45 PM	5:54 PM	6:09 PM	6:27 PM						
BARTA 13				6:30 PM	6:45 PM		6:55 PM	7:00 PM	7:10 PM	7:30 PM
BARTA 14				7:00 PM	7:15 PM		7:25 PM	7:30 PM	7:40 PM	8:00 PM

RUN	WESTBOUND									
	BERKS COUNTY						LEBANON COUNTY			
	8th & Cherry	5th Av. & Penn Av.	Penn Av. & Woodside	Sinking Springs	Phoebe Berks Village	Wernersville State Hospital	Womelsdorf	County Fair (Myerstown)	15th Av. & King	7th & Willow
LT 1	5:00 AM	5:10 AM	5:15 AM	5:20 AM	5:25 AM	5:45 AM	6:00 AM			
BARTA 1	5:30 AM	5:40 AM	5:45 AM	5:50 AM	5:55 AM	6:15 AM	6:30 AM	6:21 AM	6:35 AM	6:45 AM
LT 2							6:33 AM	6:51 AM	7:05 AM	7:15 AM
BARTA 2	6:00 AM	6:10 AM	6:15 AM	6:20 AM	6:25 AM	6:45 AM	7:00 AM			
LT 3							7:03 AM	7:21 AM	7:35 AM	7:45 AM
BARTA 3	6:30 AM	6:40 AM	6:45 AM	6:50 AM	6:55 AM	7:15 AM	7:30 AM			
BARTA 4	7:00 AM	7:10 AM	7:15 AM	7:20 AM	7:25 AM	7:45 AM	8:00 AM			
BARTA 5	7:30 AM	7:40 AM	7:45 AM	7:50 AM	7:55 AM	8:15 AM	8:30 AM			
BARTA 6	10:00 AM	10:10 AM	10:15 AM	10:20 AM	10:25 AM	10:45 AM	11:00 AM			
BARTA 7	12:00 PM	12:10 PM	12:15 PM	12:20 PM	12:25 PM	12:45 PM	1:00 PM			
LT 4							1:03 PM	1:21 PM	1:35 PM	1:45 PM
BARTA 8	2:00 PM	2:10 PM	2:15 PM	2:20 PM	2:25 PM	2:45 PM	3:00 PM			
BARTA 9	3:30 PM	3:40 PM	3:45 PM	3:50 PM	3:55 PM	4:15 PM	4:30 PM			
BARTA 10	4:00 PM	4:10 PM	4:15 PM	4:20 PM	4:25 PM	4:45 PM	5:00 PM			
BARTA 11	4:30 PM	4:40 PM	4:45 PM	4:50 PM	4:55 PM	5:15 PM	5:30 PM			
LT 5							5:33 PM	5:51 PM	6:05 PM	6:15 PM

The schedule developed for initial service enable estimates of annual service hours and associated costs to be prepared. The following process was used for developing the cost estimates for this service:

- **Determine total new service hours** – To determine the hours a vehicle is in operation, an estimate of the number of weekday hours necessary for new service is calculated.
- **Annualize Costs** – Once service hours are determined, an annualization factor is then used to determine the amount of service provided throughout the year. This factor includes weekday operations only, and accounts for a certain number of holidays, where new commuter services would not be operated. The total annual service hours are then multiplied by an Operating Expense per Service Hour, as reported by transit agencies as an all encompassing operating cost (administration, fuel, insurance, etc.) on a per hour basis. The Operating Expense per service hour for this service is currently assumed to be \$71.63/hour, as reported by Lebanon Transit (2008 – National Transit Database).
- **Estimate Revenue** – A ridership analysis was not conducted for the specific services envisioned, however, for estimating purposes the new service was anticipated to maintain a farebox recovery of approximately 25% (a goal that can be adjusted for new service). This estimated revenue is used to further offset the estimate of net new operating costs that would be provided through an inter-county transit service funding program.

Vehicle needs are determined by schedule and the ability to reduce deadhead travel (if possible) by basing vehicles in outlying communities. In terms of capital costing, the schedule developed indicates that a vehicle cannot return in sufficient time to perform another run and therefore a total of three (3) vehicles would be needed to support this service. Commuter-based schedules are often inefficient due to a high peak demand with limited use for vehicles or service during the midday. Where possible, the introduction of commuter services could coincide with other market expansion for community circulators or special needs transportation as a means to make use of vehicles and staff hours during non-commute times. Without a current gauge of ridership demand, a slightly smaller 30-foot vehicle could be utilized initially. These vehicles may cost upwards of \$300,000 new, dependant on features and specifications. The total capital cost of purchasing these vehicles has been provided, however it is also realistic to assume that either slightly-used vehicles from another agency or a capital lease arrangement could be used in lieu of an outright purchase. The operating and capital cost calculation results for this initial service are presented in **Figure 6-5**. Capital costs also incorporate passenger facilities. The existing route infrastructure exists from Womelsdorf to Reading, with expansion capacity at the

Womelsdorf park and ride. The newly proposed service will have potentially identical costs in establishing at least two park and ride locations within Lebanon County. Representing a purpose-built facility, the 95-spot park and ride recently constructed on Route 934 in Lebanon County cost approximately \$1.3 million. The amenities featured, such as an enclosed pavilion and vehicle arrival times, may be best suited toward express and branded service such as envisioned in the potential service upgrades. In fact, with higher vehicle frequency, an enhancement to the existing Womelsdorf park and ride would be the most logical capital improvement. Other new facilities along the route could represent leasing arrangements where additional capacity or vacancy exists. Leasing for a park and ride space would be much less capital intensive than purpose built lots, especially with unproven ridership demand.

Please note that all additional assumptions, such as operating speeds – which will also dictate the service hours - used to prepare the service hour and cost estimates are documented in **Appendix D – Exhibit D-1**.

Figure 6-5. Initial Demonstration Project Cost Estimation

INITIAL SERVICE	
WEEKDAY Service Hours:	10.5
Total Annual Service Hours:	2677.5
Total Annual Cost Est.: \$	192,780
TOTAL NEW SERVICE HOURS: 2677.5	
TOTAL NEW ANNUAL OPERATING COST EST.: \$	192,780
Est. Fare Recovery (@ 25%): \$	67,473
EST. NEW ANNUAL OPERATING SUBSIDY: \$	125,307
Vehicles Required:	3
Vehicle Type:	30' Bus
EST. VEHICLE COST (if purchased new): \$	900,000

6.5 Integration Steps

With an initial service in mind, it is then essential to determine how to integrate services, with some examples including shared operations, common branding, and interchangeable fare mechanisms being implemented prior to starting service. New institutional approaches were also a topic of the second Transit Roundtable during this project where a variety of mechanisms were explored for formalizing the integration of service. Currently, service provision of commuter-based routes to the Harrisburg CBD region is provided through informal operating agreements. The operating approaches reviewed and discussed during among stakeholders during this project included:

- **Direct Purchase of Transit Services** - Transit agency purchasing services directly from a second transit agency. In some corridors, the type of service may specifically

favor one transit provider or entity over another. These cases would include corridors where one county does not provide service currently, or where a significant portion of planned services would be established based on one transit providers schedule/service design. The advantage of this approach is relatively quick implementation, albeit in a highly-limited contract.

- **Coordination Agreement** - Coordination between autonomous transit agencies on coordinated facilities. For corridors where two transit providers currently operate and new services may benefit each provider equally, operating agreements can be employed. The advantage is that it retains some flexibility for the individual agencies providing the unified service, however as noted in outreach, it is easier to establish agreements on operating costs than on equally allocating capital costs, such as vehicle requirements.
- **Joint Powers Agreement** - Contract between local governments to provide transit services. This approach elevates coordination, which can ultimately address funding equity issues (one county's perception that it is paying to move another county's residents) and binds corridor coordination to regionally established goals. This approach may be more appropriate when one county does not have a service provider to be an equal partner with another, or for different modes of transit services (such as vanpool). The understanding of how transit operations can best be implemented, however, would still rest with the transit provider offering the service through a governmental agreement.
- **Umbrella Agency** - New entity a layer above the participating transit operators. This entity reflects the approach of the SRTP and has the ability to coordinate and share ideas across various entities. The shared governance and cost helps in the establishment of regional priorities, however there are typically limitations as the participants retain autonomy.
- **Creation of New Transit Entity** - New agency to oversee provision of transit services to unified geographic territory. This approach may represent a completely separate service from what is currently provided. It may embody routes of a certain type (commuter only) and could provide consistency across a region in terms of service planning. While this has the potential to greatly simplify new service provision, the continued local needs and control for would typically result in a multi-tiered approach to transit delivery, would not allow for consolidation of maintenance and operational facilities and could result in administrative duplication.

During the course of this study and in discussion with participants, it was found that an umbrella agency to provide direction and framework for prioritized coordination agreements offers the best combination of regional perspective and local provision of transit expertise. This ensures that the implementing of regional corridors follows a selection process that looks beyond individual needs and can allow access to transit planning knowledge for counties without a current transit service provider to represent their interests.

From a facilities perspective, if demand is deemed sufficient for fixed-route services in the corridor, it is important to determine the potential park and ride lot locations for expanded service based upon community partners identified in previous planning phases. This may initially include municipal lots which are generally underutilized during the typical workday (community centers, etc.). Developing necessary maintenance agreements for private lots assures that proper insurance liability can be obtained. If communities have buy-in on the service expansion, they may be able to assist in negotiations on behalf of the transit agencies/counties for use of private parking lot spaces.

For the US 422 demonstration project, the two transit agencies already share a general understanding on how to approach service in this corridor. Issues regarding service parity and cost equity are not prevalent, and therefore the informal approach as has been used to establish other commuter-based services is well suited here. This would include a shared fare mechanism, schedules and marketing of the service and these represent integration items already anticipated by both agencies.

6.6 Service Launch Planning

Once a general schedule and costing has been established, this step can occur in parallel with Integration Steps. Once sufficient detail has been established regarding the subsidy impact and the ability to formulate the necessary agreements, it is then important to secure a funding commitment to launch service. A policy goal of this study has been the establishment of a state program in support of regional coordinated transit initiatives, and as such, this program would require eligible candidate corridors from around the state to be selected for limited funding. A funding application would need to be prepared, and would be informed by all previous steps in this implementation process. A demonstration of community support and demand for the service is essential, along with consideration of longer-term funding to maintain service. The definition of service performance targets, specifically in terms of ridership and farebox recovery should be estimated. While existing farebox recovery may be appropriate for expanded services, the opportunity to design commuter-specific services with a higher level of service and amenities, can command a higher fare structure and therefore have a higher operating ratio. During the demonstration period, a system for periodic review of service performance and adjustments should be derived prior to launching services. Other funding mechanisms for demonstration projects may also be pursued, but in a manner that is replicable for other corridors, agencies, and partners throughout the region.

The logistics of launching service should also be considered in this phase of implementation. For example, if the newly envisioned services should impact existing operations, passengers potentially affected by the change would need sufficient notice. A marketing and promotion campaign should also be initiated prior to launch in order to prepare the market for new services. Any branding, website, and schedule changes should be implemented as well as targeted community engagement to publicize the new services.

6.7 Performance/Market Monitoring

The ultimate decision to implement corridor service should be based upon regionally agreed upon goals with the design of service not simply favoring the easiest service to implement, but rather the best candidates for success in terms of ridership, targeted expansion, the right level of investment, and establishing higher and more sophisticated levels of cooperation among all regional stakeholders. In addition to such overarching goals, specific and measurable objectives regarding performance of the new service need to be recorded during the demonstration period. The initial ridership response will be an indication of the market for these services, but additional surveys and assessments should be made. Some agencies include the subsidy per passenger as another quantitative performance measure. The specific standard varies because of different cost structures and different budget constraints. Transit agencies may also use the farebox recovery ratio as a primary determinant of whether the new transit service is viable. This study assumes a threshold of 25-percent in the revenue estimations for service; however, certain commuter services operating in the area easily exceed this amount. The performance monitoring should be dictated by a “probationary period,” which allows sufficient time for the new services to become established. While this will be a condition of the funding mechanism used, the standard industry time frame ranges from 1 to 3 years, with 18 months as an average time to begin to critically look into performance measures.

6.8 Timing and Type of Service Upgrades

For corridors with existing service, two approaches are available for consideration as an upgrade of the service provided. One is to incorporate newly expanded service into an already established scheduled, furthering the level of service integration. The service would therefore operate exactly as before, with an expanded coverage area. If ridership demand is sufficient, however, a second approach is to provide a higher level of service. This would include express/limited stop service and would be especially attractive for longer-distance commuter runs that would likely not benefit from many intermediate stops. Each approach offers distinct advantages, which is highlighted in the design of potential service expansion options for the Brown Corridor assuming a successful initial demonstration.

The current Womelsdorf commuter-oriented service, with inbound service directed towards the Reading, PA central business district (outbound in the PM) represents the best building block for and operational model that expands service. A total of three distinct approaches were developed to represent an extension of service to Lebanon, a peak direction only overlay of service, and finally an express service option. These options are primarily used to test different assumptions and to present implementation strategies for the design of inter-county services.

- **Option 1: Service Extension** – Represents a service that modifies existing BARTA Route 14 service to offer some extended service to Lebanon (one-seat ride, thereby eliminating a transfer). This reflects how existing service to Womelsdorf currently is incorporated into the Route 14 schedule. Extended service would be operated as run-

through service, with vehicles operating out and back from their base of operation (Lebanon or Reading, respectively).

- **Option 2: Peak Bus Service** – Represents a potential service that would not need to cycle buses in the off-peak direction. One advantage of having two operational centers in this approach is that vehicles can leave from Lebanon and proceed to Reading without the need to travel in the off-peak direction from a centralized base to the outlying location. This service, however, does not provide for reverse commute options and also presents some operational challenges regarding the vehicle and operator during the non-peak times.
- **Option 3: Express Bus Overlay** – Represents a faster service, with limited stops. As such, its schedule cannot be combined with existing operations and these runs would be in addition to the current service already provided in the corridor. Given the increased travel distance, the express option could entice additional ridership to offset the cost increase. At key stops within the corridor, where both local and express buses stop, the headway would be increased further during peak commuting times which would also be beneficial to ridership gains.

The first two options represent a reconfiguration of existing BARTA Route 14 service, enabling some cost savings through consolidation of redundant services. The final option, which represents a higher level of service and faster travel, represents no modifications to existing service and would build upon the initial demonstration project by simply extending express service on the Womelsdorf-Reading segment of the corridor. The schedules for Option 1 and Option 2 are based solely on the runs from downtown Reading to Womelsdorf, with no impact or analysis on runs that terminated at Wernersville. New inter-county runs were designed to be integrated into existing services, and in the absence of a strong reverse commute demand, some runs were selected for removal if they were not in the peak direction and could otherwise be accommodated by an inter-county trip instead. Option 3 scheduling presented the simplest approach, as it merely reflects the extension of some demonstration service, without modification to the existing Route 14 schedule at all. In addition, this service is envisioned to provide express service with limited stops, therefore operating at a higher speed, saving an estimated 30 minutes from the end-to-end travel time versus Option 1 and Option 2. Express service only applies to the portion of the route between Womelsdorf and Reading, as Option 1, 2, and 3 are anticipated to operate identically along the remainder of the route into Lebanon County.

Existing Route 14 and sample schedules for Option 1, Option 2, and Option 3 are included in the following **Figures 6-6** through **Figure 6-8**.

Figure 6-6. Option #1- Route 14 Extension Schedule

RUN	EASTBOUND									
	LEBANON COUNTY			BERKS COUNTY						
	7th & Willow	15th Av. & King	County Fare (Myersstown)	Womelsdorf	Wernersville State Hospital	Phoebe Berks Village	Sinking Springs	Penn Av. & Woodside	5th Av. & Penn Av.	8th & Cherry
LT 1	5:30 AM	5:39 AM	5:54 AM	6:12 AM	6:27 AM		6:37 AM	6:42 AM	6:52 AM	7:12 AM
BARTA 1				6:30 AM	6:45 AM		6:55 AM	7:00 AM	7:10 AM	7:30 AM
LT 2	6:00 AM	6:09 AM	6:24 AM	6:42 AM	6:57 AM		7:07 AM	7:12 AM	7:22 AM	7:42 AM
BARTA 2				7:00 AM	7:15 AM		7:25 AM	7:30 AM	7:40 AM	8:00 AM
BARTA 3				7:30 AM	7:45 AM		7:55 AM	8:00 AM	8:10 AM	8:30 AM
BARTA 4				8:00 AM	8:15 AM		8:25 AM	8:30 AM	8:40 AM	9:00 AM
				8:30 AM	8:45 AM		8:55 AM	9:00 AM	9:10 AM	9:30 AM
BARTA 5				11:00 AM	11:15 AM		11:25 AM	11:30 AM	11:40 AM	12:00 PM
BARTA 6				1:00 PM	1:15 PM		1:25 PM	1:30 PM	1:40 PM	2:00 PM
BARTA 7				3:00 PM	3:15 PM		3:25 PM	3:30 PM	3:40 PM	4:00 PM
LT 3	3:45 PM	3:54 PM	4:09 PM	4:27 PM	4:42 PM		4:52 PM	4:57 PM	5:07 PM	5:27 PM
BARTA 8				5:00 PM	5:15 PM		5:25 PM	5:30 PM	5:40 PM	6:00 PM
LT 4	4:45 PM	4:54 PM	5:09 PM	5:27 PM	5:42 PM		5:52 PM	5:57 PM	6:07 PM	6:27 PM
BARTA 10				6:00 PM	6:15 PM		6:25 PM	6:30 PM	6:40 PM	7:00 PM
BARTA 11				6:15 PM	6:30 PM		6:40 PM	6:45 PM	6:55 PM	7:15 PM
				6:30 PM	6:45 PM		6:55 PM	7:00 PM	7:10 PM	7:30 PM
BARTA 9	6:15 PM	6:24 PM	6:39 PM	6:57 PM	7:12 PM		7:22 PM	7:27 PM	7:37 PM	7:57 PM

RUN	WESTBOUND									
	BERKS COUNTY							LEBANON COUNTY		
	8th & Cherry	5th Av. & Penn Av.	Penn Av. & Woodside	Sinking Springs	Phoebe Berks Village	Wernersville State Hospital	Womelsdorf	County Fare (Myersstown)	15th Av. & King	7th & Willow
BARTA 1	5:00 AM	5:10 AM	5:15 AM	5:20 AM	5:25 AM	5:45 AM	6:00 AM			
BARTA 2	5:30 AM	5:40 AM	5:45 AM	5:50 AM	5:55 AM	6:15 AM	6:30 AM			
BARTA 3	6:00 AM	6:10 AM	6:15 AM	6:20 AM	6:25 AM	6:45 AM	7:00 AM			
BARTA 4	6:30 AM	6:40 AM	6:45 AM	6:50 AM	6:55 AM	7:15 AM	7:30 AM			
BARTA 5	7:00 AM	7:10 AM	7:15 AM	7:20 AM	7:25 AM	7:45 AM	8:00 AM			
LT 1	7:15 AM	7:25 AM	7:30 AM	7:35 AM	7:40 AM	8:00 AM	8:15 AM	8:33 AM	8:47 AM	8:57 AM
LT 2	7:45 AM	7:55 AM	8:00 AM	8:05 AM	8:10 AM	8:30 AM	8:45 AM	9:03 AM	9:17 AM	9:27 AM
BARTA 6	10:00 AM	10:10 AM	10:15 AM	10:20 AM	10:25 AM	10:45 AM	11:00 AM			
BARTA 7	12:00 PM	12:10 PM	12:15 PM	12:20 PM	12:25 PM	12:45 PM	1:00 PM			
BARTA 8	2:00 PM	2:10 PM	2:15 PM	2:20 PM	2:25 PM	2:45 PM	3:00 PM			
	3:30 PM	3:40 PM	3:45 PM	3:50 PM	3:55 PM	4:15 PM	4:30 PM			
BARTA 9	4:00 PM	4:10 PM	4:15 PM	4:20 PM	4:25 PM	4:45 PM	5:00 PM			
BARTA 10	4:30 PM	4:40 PM	4:45 PM	4:50 PM	4:55 PM	5:15 PM	5:30 PM	5:48 PM	6:02 PM	6:12 PM
BARTA 11	5:00 PM	5:10 PM	5:15 PM	5:20 PM	5:25 PM	5:45 PM	6:00 PM			
LT 3	5:15 PM	5:25 PM	5:30 PM	5:35 PM	5:40 PM	6:00 PM	6:15 PM			
LT 4	5:30 PM	5:40 PM	5:45 PM	5:50 PM	5:55 PM	6:15 PM	6:30 PM	6:48 PM	7:02 PM	7:12 PM
	6:00 PM	6:10 PM	6:15 PM	6:20 PM	6:25 PM	6:45 PM	7:00 PM			
	6:30 PM	6:40 PM	6:45 PM	6:50 PM	6:55 PM	7:15 PM	7:30 PM	7:48 PM	8:02 PM	8:12 PM

LT # - Denotes new service, originating and terminating in Lebanon, PA (operated by LT)

BARTA # - Denotes new service, originating and terminating in Reading, PA (operated by BARTA)

~~12:00 PM~~ - Denotes a currently operated BARTA Route 14 service that has been removed (redundant with new service, non-peak travel, etc.)

Figure 6-7. Option #2- Route 14 Peak Bias Extension Schedule

RUN	EASTBOUND									
	LEBANON COUNTY			BERKS COUNTY						
	7th & Willow	15th Av. & King	County Fare (Myerstown)	Womelsdorf	Wernersville State Hospital	Phoebe Berks Village	Sinking Springs	Penn Av. & Woodside	5th Av. & Penn Av.	8th & Cherry
LT 1	5:15 AM	5:24 AM	5:39 AM	5:57 AM	6:12 AM		6:22 AM	6:27 AM	6:37 AM	6:57 AM
BARTA 1				6:30 AM	6:45 AM		6:55 AM	7:00 AM	7:10 AM	7:30 AM
LT 2*	6:15 AM	6:24 AM	6:39 AM	6:57 AM	7:12 AM		7:22 AM	7:27 AM	7:37 AM	7:57 AM
BARTA 2				7:30 AM	7:45 AM		7:55 AM	8:00 AM	8:10 AM	8:30 AM
LT 3*	7:15 AM	7:24 AM	7:39 AM	7:57 AM	8:12 AM		8:22 AM	8:27 AM	8:37 AM	8:57 AM
BARTA 3				8:30 AM	8:45 AM		8:55 AM	9:00 AM	9:10 AM	9:30 AM
BARTA 4				11:00 AM	11:15 AM		11:25 AM	11:30 AM	11:40 AM	12:00 PM
BARTA 5				1:00 PM	1:15 PM		1:25 PM	1:30 PM	1:40 PM	2:00 PM
BARTA 6				2:30 PM	2:45 PM		2:55 PM	3:00 PM	3:10 PM	3:30 PM
LT 4	2:15 PM	2:24 PM	2:39 PM	3:00 PM	3:15 PM		3:25 PM	3:30 PM	3:40 PM	4:00 PM
BARTA 7				4:30 PM	4:45 PM		4:55 PM	5:00 PM	5:10 PM	5:30 PM
LT 5	4:15 PM	4:24 PM	4:39 PM	5:00 PM	5:15 PM		5:25 PM	5:30 PM	5:40 PM	6:00 PM
BARTA 8				5:30 PM	5:45 PM		5:55 PM	6:00 PM	6:10 PM	6:30 PM
BARTA 9				6:00 PM	6:15 PM		6:25 PM	6:30 PM	6:40 PM	7:00 PM
				6:30 PM	6:45 PM		6:55 PM	7:00 PM	7:10 PM	7:30 PM
				7:00 PM	7:15 PM		7:25 PM	7:30 PM	7:40 PM	8:00 PM

RUN	WESTBOUND							LEBANON COUNTY		
	BERKS COUNTY									
	8th & Cherry	5th Av. & Penn Av.	Penn Av. & Woodside	Sinking Springs	Phoebe Berks Village	Wernersville State Hospital	Womelsdorf	County Fare (Myerstown)	15th Av. & King	7th & Willow
BARTA 1	5:00 AM	5:10 AM	5:15 AM	5:20 AM	5:25 AM	5:45 AM	6:00 AM			
	5:30 AM	5:40 AM	5:45 AM	5:50 AM	5:55 AM	6:15 AM	6:30 AM			
	6:00 AM	6:10 AM	6:15 AM	6:20 AM	6:25 AM	6:45 AM	7:00 AM			
BARTA 2	6:30 AM	6:40 AM	6:45 AM	6:50 AM	6:55 AM	7:15 AM	7:30 AM			
LT 1	7:00 AM	7:10 AM	7:15 AM	7:20 AM	7:25 AM	7:45 AM	8:00 AM	8:18 AM	8:32 AM	8:42 AM
BARTA 3	7:30 AM	7:40 AM	7:45 AM	7:50 AM	7:55 AM	8:15 AM	8:30 AM			
BARTA 4	10:00 AM	10:10 AM	10:15 AM	10:20 AM	10:25 AM	10:45 AM	11:00 AM			
BARTA 5	12:00 PM	12:10 PM	12:15 PM	12:20 PM	12:25 PM	12:45 PM	1:00 PM			
BARTA 6	1:30 PM	1:40 PM	1:45 PM	1:50 PM	1:55 PM	2:15 PM	2:30 PM			
BARTA 7	3:30 PM	3:40 PM	3:45 PM	3:50 PM	3:55 PM	4:15 PM	4:30 PM			
LT 2	4:00 PM	4:10 PM	4:15 PM	4:20 PM	4:25 PM	4:45 PM	5:00 PM	5:18 PM	5:32 PM	5:42 PM
BARTA 8	4:30 PM	4:40 PM	4:45 PM	4:50 PM	4:55 PM	5:15 PM	5:30 PM			
LT 3*	5:00 PM	5:10 PM	5:15 PM	5:20 PM	5:25 PM	5:45 PM	6:00 PM	6:18 PM	6:32 PM	6:42 PM
BARTA 9	5:30 PM	5:40 PM	5:45 PM	5:50 PM	5:55 PM	6:15 PM	6:30 PM			
LT 4	6:00 PM	6:10 PM	6:15 PM	6:20 PM	6:25 PM	6:45 PM	7:00 PM	7:18 PM	7:32 PM	7:42 PM

LT # - Denotes new service, originating and terminating in Lebanon, PA (operated by LT) * Indicates deadhead required

BARTA # - Denotes modified service, originating and terminating in Reading, PA (operated by BARTA)

~~12:00 PM~~ - Denotes a currently operated BARTA Route 14 service that has been removed (redundant with new service, non-peak travel, etc.)

Figure 6-8. Option #3- Route 14 Express/Overlay Schedule

RUN	EASTBOUND									
	LEBANON COUNTY			BERKS COUNTY						
	7th & Willow	15th Av. & King	County Fair (Myerstown)	Womelsdorf	Wernersville State Hospital	Phoebe Berks Village	Sinking Springs	Penn Av. & Woodside	5th Av. & Penn Av.	8th & Cherry
BARTA 1				6:00 AM	6:15 AM		6:25 AM	6:30 AM	6:40 AM	7:00 AM
LT 1	6:15 AM	6:23 AM	6:33 AM	6:45 AM			7:00 AM		7:10 AM	7:15 AM
BARTA 2				6:30 AM	6:45 AM		6:55 AM	7:00 AM	7:10 AM	7:30 AM
BARTA 4				7:00 AM	7:15 AM		7:25 AM	7:30 AM	7:40 AM	8:00 AM
BARTA 3	7:15 AM	7:23 AM	7:33 AM	7:45 AM			8:00 AM		8:10 AM	8:15 AM
BARTA 5				7:30 AM	7:45 AM		7:55 AM	8:00 AM	8:10 AM	8:30 AM
BARTA 6				8:00 AM	8:15 AM		8:25 AM	8:30 AM	8:40 AM	9:00 AM
BARTA 7				8:30 AM	8:45 AM		8:55 AM	9:00 AM	9:10 AM	9:30 AM
BARTA 8				11:00 AM	11:15 AM		11:25 AM	11:30 AM	11:40 AM	12:00 PM
BARTA 9				1:00 PM	1:15 PM		1:25 PM	1:30 PM	1:40 PM	2:00 PM
BARTA 10				3:00 PM	3:15 PM		3:25 PM	3:30 PM	3:40 PM	4:00 PM
LT 2	3:15 PM	3:23 PM	3:33 PM	3:45 PM			4:00 PM		4:10 PM	4:15 PM
BARTA 11				4:30 PM	4:45 PM		4:55 PM	5:00 PM	5:10 PM	5:30 PM
BARTA 12				5:00 PM	5:15 PM		5:25 PM	5:30 PM	5:40 PM	6:00 PM
LT 3	5:15 PM	5:23 PM	5:33 PM	5:45 PM			6:00 PM		6:10 PM	6:15 PM
BARTA 13				5:30 PM	5:45 PM		5:55 PM	6:00 PM	6:10 PM	6:30 PM
BARTA 14				6:00 PM	6:15 PM		6:25 PM	6:30 PM	6:40 PM	7:00 PM
BARTA 16				6:30 PM	6:45 PM		6:55 PM	7:00 PM	7:10 PM	7:30 PM
BARTA 15	6:15 PM	6:23 PM	6:33 PM	6:45 PM			7:00 PM		7:10 PM	7:15 PM
BARTA 17				7:00 PM	7:15 PM		7:25 PM	7:30 PM	7:40 PM	8:00 PM

RUN	WESTBOUND									
	BERKS COUNTY							LEBANON COUNTY		
	8th & Cherry	5th Av. & Penn Av.	Penn Av. & Woodside	Sinking Springs	Phoebe Berks Village	Wernersville State Hospital	Womelsdorf	County Fair (Myerstown)	15th Av. & King	7th & Willow
BARTA 1	5:00 AM	5:10 AM	5:15 AM	5:20 AM	5:25 AM	5:45 AM	6:00 AM			
BARTA 2	5:30 AM	5:40 AM	5:45 AM	5:50 AM	5:55 AM	6:15 AM	6:30 AM			
BARTA 3	5:45 AM	5:49 AM		5:59 AM			6:14 AM	6:26 AM	6:36 AM	6:45 AM
BARTA 4	6:00 AM	6:10 AM	6:15 AM	6:20 AM	6:25 AM	6:45 AM	7:00 AM			
BARTA 5	6:30 AM	6:40 AM	6:45 AM	6:50 AM	6:55 AM	7:15 AM	7:30 AM			
BARTA 6	7:00 AM	7:10 AM	7:15 AM	7:20 AM	7:25 AM	7:45 AM	8:00 AM			
LT 1	7:15 AM	7:19 AM		7:29 AM			7:44 AM	7:56 AM	8:06 AM	8:15 AM
BARTA 7	7:30 AM	7:40 AM	7:45 AM	7:50 AM	7:55 AM	8:15 AM	8:30 AM			
BARTA 8	10:00 AM	10:10 AM	10:15 AM	10:20 AM	10:25 AM	10:45 AM	11:00 AM			
BARTA 9	12:00 PM	12:10 PM	12:15 PM	12:20 PM	12:25 PM	12:45 PM	1:00 PM			
BARTA 10	2:00 PM	2:10 PM	2:15 PM	2:20 PM	2:25 PM	2:45 PM	3:00 PM			
BARTA 11	3:30 PM	3:40 PM	3:45 PM	3:50 PM	3:55 PM	4:15 PM	4:30 PM			
BARTA 12	4:00 PM	4:10 PM	4:15 PM	4:20 PM	4:25 PM	4:45 PM	5:00 PM			
LT 2	4:15 PM	4:19 PM		4:29 PM			4:44 PM	4:56 PM	5:06 PM	5:15 PM
BARTA 13	4:30 PM	4:40 PM	4:45 PM	4:50 PM	4:55 PM	5:15 PM	5:30 PM			
BARTA 14	5:00 PM	5:10 PM	5:15 PM	5:20 PM	5:25 PM	5:45 PM	6:00 PM			
BARTA 15	5:15 PM	5:19 PM		5:29 PM			5:44 PM	5:56 PM	6:06 PM	6:15 PM
BARTA 16	5:30 PM	5:40 PM	5:45 PM	5:50 PM	5:55 PM	6:15 PM	6:30 PM			
BARTA 17	6:00 PM	6:10 PM	6:15 PM	6:20 PM	6:25 PM	6:45 PM	7:00 PM			
LT 3	6:15 PM	6:19 PM		6:29 PM			6:44 PM	6:56 PM	7:06 PM	7:15 PM

LT # - Denotes new service, originating and terminating in Lebanon, PA (operated by LT)

BARTA # - Denotes new service, originating and terminating in Reading, PA (operated by BARTA)

Option 1 and Option 2 incorporate some service from the existing Route 14 schedule to Womelsdorf, therefore new service hours are slightly offset by eliminating redundant runs. Option 3 represents a completely stand alone service, therefore there are no associated cost savings via service redundancy. The faster travel time of express service, however, results in lower service hours at peak times only (no intra-county midday trip included). This is one example of the potential trade-offs considered with each developed upgrade schedule. A summary of these key points for each Option is provided in **Figure 6-9**. The results of the service hour cost calculations are included in **Figure 6-10**.

Figure 6-9. Summary Characteristics of Upgraded Schedule Options

Service	Identified Needs Addressed	Potential Ridership Impacts	Potential Operating Impacts	Potential Financial Impacts
Option 1	Peak commuter travel from Lebanon to Reading integrated with existing service.	Select non-peak direction runs may be curtailed, impacting reverse commuters.	Majority of intra-county runs need to be based in Lebanon. Alters existing Route 14 schedule timing.	As proposed, it represents the lowest cost option. Low service levels could ultimately result in even lower than estimated fare recovery on the new route portions.
Option 2	A larger number of peak commuter trips, providing greater flexibility.	Offers the most peak service, a potential draw to ridership.	Requires deadhead runs as a penalty for improved schedule convenience.	The higher service provision will possibly improve ridership but non-revenue deadhead requirements represent unproductive service.
Option 3	Provides for a faster express trip and allows for a newly branded service to be introduced.	Without offering the local service option, sufficient long-distance ridership demand must be in place prior to implementation.	Does not impact current operations in the corridor. May allow for different vehicle and/or fare structures.	The higher operating speeds, as allowed by traffic conditions, can offset this highest cost option.

Figure 6-10. Operating Cost Summary by Option

OPTION 1 - Route 14 Extension	
Option 1 WEEKDAY Service Hours:	19.5
Option 1 Total Annual Service Hours:	4972.5
Option 1 Total Annual Cost Est.: \$	387,855
Redundant daily BARTA Service Hours:	10
Redundant Annual Service Hours:	2550
Redundant Cost: \$	198,900
Removed daily BARTA Service Hours:	4
Removed Annual Service Hours:	1020
Removed Cost: \$	79,560
TOTAL NEW SERVICE HOURS:	2422.5
TOTAL NEW ANNUAL OPERATING COST EST.: \$	109,395
Est. Fare Recovery (@ 35%): \$	38,288
OPTION 1 NET NEW OPERATING SUBSIDY: \$	71,107

OPTION 2 - Peak Bias Route 14 Extension	
Option 2 WEEKDAY Service Hours:	21
Option 2 Total Annual Service Hours:	5355.0
Option 2 Total Annual Cost Est.: \$	417,690.00
Redundant daily BARTA Service Hours:	9
Redundant Annual Service Hours:	2295
Redundant Cost: \$	179,010
Removed daily BARTA Service Hours:	4
Removed Annual Service Hours:	1020
Removed Cost: \$	79,560
TOTAL NEW SERVICE HOURS:	3060.0
TOTAL NEW ANNUAL OPERATING COST EST.: \$	159,120
Est. Fare Recovery (@ 35%) ¹ : \$	27,846
OPTION 2 NET NEW OPERATING SUBSIDY: \$	131,274

(1) No revenue derived from deadhead operations

OPTION 3 - Express Overlay	
Option 3 WEEKDAY Service Hours:	10
Option 3 Total Annual Service Hours:	2550
Option 3 Total Annual Cost Est.: \$	198,900
Redundant daily BARTA Service Hours:	0
Redundant Annual Service Hours:	0
Redundant Cost: \$	-
Removed daily BARTA Service Hours:	0
Removed Annual Service Hours:	0
Removed Cost: \$	-
TOTAL NEW SERVICE HOURS:	2550
TOTAL NEW ANNUAL OPERATING COST EST.: \$	198,900
Est. Fare Recovery (@ 35%) ² : \$	69,615
OPTION 3 NET NEW OPERATING SUBSIDY: \$	129,285

(2) Likely to achieve higher recovery based on higher service level

These schedules also require additional peak-hour vehicles. Current peak operations to Womelsdorf within this corridor on Route 14 require a total of four (4) vehicles. Option #1 would require at least two (2) new additional vehicles based in Lebanon, Option #2 would require a minimum of three (3) new vehicles based in Lebanon, and Option #3 would require at least two (2) new vehicles, with one based in Lebanon and one based in Reading. Vehicles required for peak operations would not likely have any additional revenue service throughout the day. With greater potential ridership capacities, the need would be for a standard 40' vehicle which may cost up to \$350,000. Option #3 provides the possibility for specially branded service and the use of intercity (over-the-road) coaches with amenities such as video screens and wireless internet. These vehicles may typically cost \$400,000 to \$450,000.

6.9 Maintenance/Adjustment of Service

The final step in implementation planning is the constant adjustment of service based upon rider and community needs. This study has revealed how economic development, regional planning bodies, and other factors beyond basic mobility all influence the mix of services offered. The preparation of the initial service as well as the potential upgraded schedules highlight different approaches to implementing service specific to the US 422 corridor but applicable elsewhere. The operations planning would be shared among the two transit agencies, and the efficiency of basing peak-direction runs in the outlying region (in this case Lebanon County) could offset deadhead time. Option #2 illustrates, however, that beyond a few coordinated runs, any further increase in service provision would require deadheading and non-revenue service. The potential design of circulator routes, such as Lebanon Transit service currently to Harrisburg, could potential utilize vehicles throughout the day or for travel in the non-peak direction. Such service, for example, might only travel within the 422 corridor in the peak direction, and then provide connections to Hamburg (via RT 61) and to Lebanon (via I-78/PA 343). These and other options could be investigated after initiating service however, as the provision of high-quality commuter services along US 422 is the ultimate goal.

7 Guiding Policy

7.1 Background

The purpose of this chapter is to identify the guidelines to create new policy to guide regional coordinated transit service planning, implementation, and funding in a manner that allows for future analysis and greater coordination of transit services in South Central Pennsylvania. This policy will not only guide the implementation of the recommendations identified as part of this project for South Central Pennsylvania; it will also be transferrable to other regions of the Commonwealth seeking to implement similar types of improvements. The policy has been developed consistent with PennDOT's latest guidance on service implementation and mobility enhancements. Several of the previous chapters discuss important policy principles that shape the guidance and recommendations provided in this chapter.

Chapter 1, Needs Investigation, describes the study's purpose and makes the case for the coordination of regional transit services and its importance. Benefits such as regional air quality, reducing congestion and commute time, and providing mobility options to individuals that do not have access to a car are some of the easily identifiable improvements that can arise from innovative solutions using a variety of larger and smaller-scale mobility concepts. Development of policy to help address the shift in jobs and residences from traditional downtowns will further support regional transit coordination.

The methodology described in other chapters, particularly Chapter 5 with the Development of Regional Transit Service Concepts, lays the groundwork for identifying the elements critical to successful regional transit coordination in the Commonwealth. Underscoring the corridor prioritization process is its ease of implementation, capturing that the start-up time for service will vary based on the conditions in each corridor. For example, in counties that currently do not operate any transit service, additional steps will be required to allocate capital funding, as the capital requirements for vehicles, facilities or other infrastructure would not likely be in place.

As outlined in Chapter 6, Implementation Plan, a demonstration corridor was developed in detail to provide estimates of the necessary bus fleet size and vehicle mix needed, options for service coverage, type of service, who provides it and how much funding or subsidy would be needed. The policy can also serve to improve coordination efforts and help ensure the full implementation of key recommendations by transit providers, local planners and stakeholders to expand mobility. Chapter 6 also highlights the importance of evaluating the transit market to determine employers; and riders' needs and this effort is again reflected in the evaluation factors for a regional transit service coordination program.

7.2 Policy Inputs

The policy development process is tied directly to the outputs from the other tasks in the study effort, specifically those related to opportunities and barriers, and implementation; Chapters 4 and 6, respectively. The policy must also be part of a larger regional mobility strategy comprised of a broader set of transportation improvements that seek to upgrade the entire multimodal network. These pieces of the larger system include:

- Roadway facilities
- Intermodal access and connections
- Transfer facilities
- Land use
- Site design
- Contracting arrangements
- People using the transportation system

Current regional trends in jobs and housing require thoughtful consideration of the impacts that land use decisions have on the transportation system and intensify the need to develop innovative solutions that provide mobility choices. Thus, transportation policy must reflect the important link between transportation and land use and encourage decision makers to make informed decisions on land use that will impact residents, employers, visitors and commuters traveling to and through the region.

As typical in policy development, language should reflect a balance between stakeholder needs and community concerns. With the participation of the MPOs and RPOs in the study area as members of the JSC, as well as significant involvement of the affected transit agencies throughout this effort, it is evident there is strong support for identifying and implementing relevant land use policies that can be incorporated into regional transit coordination. These policies can also be used to demonstrate how land use and transportation linkages inform the broader transit planning process.

As noted above, this study seeks consistency with PennDOT's recent guidance and initiatives on implementation and the available tools. In particular, Pub 622, Improving the Land Use – Transportation Connection through Local Implementation Tools (August 2010) provides local governments with specific guidance to help them decide what is best for their community in terms of local planning. As a means of implementing PennDOT's Smart Transportation Principles (see **Appendix A – Exhibit A-3**), this handbook provides municipalities with best practice examples that assist with linking land use and transportation planning. The following tools described in this document may be useful when developing the policy and evaluation tools to support regional transit coordination:

Multi-municipal Zoning/Intergovernmental Cooperative Agreements: A method to realize significant cost savings through sharing of services, joint purchase of materials,

etc. these types of agreements can help focus development across boundaries to maintain adequate infrastructure and community character. Examples of this type of agreement that relate to transit could be as simple as the joint purchase of transit vehicles that would be used on a shared route.

Official Maps: Official maps can serve as a means of improving mobility and transportation system efficiency by ensuring that the area needed for system improvements remains available. Official maps can also be used by a municipality or county to proactively plan for future growth in their area and implement elements of their adopted Comprehensive Plan that relate to public land and facilities. These public uses include railroad and transit right-of-way easements.

Parking Considerations: Reducing parking requirements could lead to more efficient development patterns and encourage the use of transit, biking and/or walking. Strategies include having a maximum requirement of parking spaces as opposed to a minimum. This can be combined with related strategies including establishing remote, often shared parking, and considerations for reserved parking. This involves developers constructing the majority of required parking (approximately 75 percent) initially, and then requiring installation of the remainder of the parking if it is actually needed.

Site Design and Roadway Standards: The site design and roadway standards are often regulated in Pennsylvania through a county or municipal Subdivision and Land Use Ordinance (SALDO). These ordinances can provide a very effective tool for improving safety and maintenance needs throughout the transportation system. These transportation design standards can be closely linked to land use strategies. Orienting these standards to be more transit friendly by having wider shoulders or sidewalks is one way to promote more transit in a region.

Traditional Neighborhood Development: This tool can be implemented as an individual or overlay district in a zoning ordinance. Encouraging this type of development provides for more compact growth with higher densities which are more feasible for increasing transit. By creating mixed-use neighborhoods that are walkable and permit greater transit accessibility, opportunities will exist to reduce vehicle trips and transportation system demands by providing for employment and residential opportunities in close proximity to each other.

Traffic Operations: Improving traffic operations can help to reduce congestion and other related mobility issues in relatively less expensive ways than traditional methods to add capacity to the system. One of the most common and cost-effective techniques is to identify ways to use traffic signal timing to make transit tripmaking more appealing. For example, technology can be used to provide transit vehicles with a head start of a few seconds at traffic lights to help speed the transit trip. This is called queue jumping and can be an effective tool.

Zoning for Mixed Uses & Higher Densities: There are several zoning-based tools that can be used to encourage development with mixed uses and higher densities. This includes Mixed-Use/Form-Based Zoning which can be implemented in a way to address safety concerns in design, while providing for a mix of use types. Zoning for mixed uses and higher densities is often done when developing Transit Oriented Development (TOD). This is often characterized as a mixed-use development centered around or near a transit stop with the goal of increasing non-motorized tripmaking, particularly pedestrian trips. In addition, Transfer of Development Rights (TDR) is a tool that permits development in locations that may be better served by existing public amenities, including transit. TDR can help municipalities direct development to locations where it could be better supported by existing transit.

Zoning Overlays: Zoning overlay districts can address corridor-specific issues and help to improve safety conditions. Provisions can be incorporated into the overlay district to regulate the type and intensity of allowable uses, lot sizes, and setbacks in order to manage the traffic generation characteristics of new uses and the relative density of access points along the corridor to better support transit service.

Developer Negotiation: When new development is proposed in a municipality, developer negotiations can be used to encourage private investment in transportation as well as other infrastructure. Municipalities should conduct all developer negotiations under advice of their solicitor to ensure that all applicable guidelines are followed. There are several ways developer negotiation can be used to improve transit in an area such as requiring higher density development or including a transit area stop in or near the development.

Tax Increment Financing: A useful tool for advancing projects in redevelopment areas is tax increment financing (TIF). TIFs allow for municipalities to borrow against anticipated property value increases in the area that are in part due to the transportation improvements being completed. This includes improvements to the transit system that may add value to area by making it transit accessible.

Transit Revitalization Investment Districts: Transit Revitalization Investment Districts (TRIDs) were authorized in Pennsylvania when Act 238 was enacted in 2004. This authorized financing of public improvements within one-half mile of a transit stop or station. It helps to encourage private sector investment near transit facilities and provides development densities to support transit. The creation of a TRID requires cooperation among local governments, transit agencies, and the private sector.

7.2.1 Legislative Considerations

Chapter 4, Barriers to Transit Service Connectivity, discusses the various types of challenges that may be faced when implementing regional transit and also provides solutions tailored to South

Central Pennsylvania. Vetted with the study stakeholders, the solutions are organized into three areas: organizational frameworks, legislation and funding, and community partnerships.

Also as discussed in length at the second Transit Roundtable, there are several legislative issues that need to be addressed in order to develop a potential state funding program for regional transit coordination. Potentially new legislation would authorize a separate funding source for regional transit coordination. It is recommended that this funding program not compete with local, (i.e., constituent-supported) funding and be in addition to current demonstration programs.

In light of the emphasis on Pennsylvania's transportation financing challenges by Governor Corbett's Transportation Funding Advisory Committee, the opportunity exists to introduce language for regional transportation coordination through the fall of 2011. This could be done with funding included within one of the categories in Act 44 which could be set aside for planning, operating, and capital expenditures for regional transit demonstration projects. As elected officials and others work to develop such legislation, the results contained in this study can serve as the basis for this language and serve as a toolkit for decision makers. In the short term, the goal is to demonstrate the value of transit service coordination as a mobility enhancement as well as a potential tool for cost savings through reducing redundancies in service.

In the long term, regional transit coordination should be an essential part of the state's formula funding package. As funding sources are identified and secured, it is anticipated that additional demonstration projects can be advanced. Over time, as cost savings and/or greater service efficiencies become apparent, ideally additional funding would be made available to spur other regional transit coordination projects. Regardless of where the funding resides, regional connections should be a part of the Commonwealth's transportation funding package.

For this study, it is recommended that the SRTP serve in an institutional leadership role to provide cooperation among the various transit agencies in the region. SRTP could also participate in regional service planning and development of common standards to evaluate poor performing routes and prepare Transit Development Plans. This "umbrella" type of leadership model could be used elsewhere in the Commonwealth as a new entity coordinating the efforts among the participating transit operators and planning partners. The following section provides details on this type of leadership arrangement at it relates to SRTP and how it could potentially be modified for use in other regions of Pennsylvania.

7.3 Policy Process

In addition to establishing a dedicated funding source for regional transit coordination, there are several additional advocacy steps recommended for development of a successful, sustainable mobility coordination effort. Under the leadership of SRTP, a forum is established for iterative and collaborative decision-making on regional transit service coordination. Entities to be

included in this process include the various chambers of commerce, transit agencies, MPOs/RPOs and PennDOT. Together these players can evaluate the potential corridors, examine the need for the service through market and other research, and work to identify ways to address the investment requirements from federal, state and local funding partners.

It is important to emphasize that mobility solutions can be achieved through a variety of other means beyond traditional bus service. Working with travel demand management (TDM) service providers - in this region, Commuter Services, other options for commuting are explored and encouraged, such as carpools and vanpools.

Partnerships with other agencies will also need to be explored and considered in order to realize maximum funding opportunities for regional transit service. Agencies such as the Department of Community and Economic Development (DCED) and Department of Environmental Protection (DEP) are two examples of state entities that could embrace the anticipated benefits of regional transit coordination including air quality, congestion reduction, and supporting employers by providing mobility choices for their employees.

The ability of an umbrella agency to coordinate and share ideas across various agencies will be beneficial as additional corridors and solutions are identified. The shared governance and costs will help in the establishment of regional priorities, however it is important to realize that there may be limitations on these roles as the participants retain autonomy. As the umbrella agency develops its leadership role, potential limitations of the arrangement can be identified, and possible solutions recommended as part of regular coordination meetings.

Throughout the process, the regional decision makers should be kept informed of the development of each demonstration corridor; continuing the transit roundtables is one way of offering this outreach. The ultimate decision to implement service on a corridor should be based upon regionally agreed upon goals. The service should not simply favor the easiest service to implement, but rather the best candidates for success in terms of ridership, targeted expansion, the right level of investment, and ever higher and more sophisticated levels of cooperation among all regional stakeholders.

7.3.1 Leadership Role

At the outset, as well as into the future, the umbrella agency can serve to provide direction and a framework for prioritized coordination of regional mobility solutions. As corridors and solutions are identified, organizations such as SRTP can help facilitate intergovernmental agreements and potential cost allocation among the various agencies involved. These types of agreements would be considered by the agencies and counties involved on a corridor-by-corridor basis.

In its leadership role, the umbrella agency will serve as a unified advocate encouraging regional transit coordination. This will include continuous education of elected officials and the public on the need for, and benefits of, regional transit coordination. SRTP can also serve as a forum to keep regional decision-makers informed and encourage looking outside of one's own county for input and solutions.

The identification of a pilot corridor can serve as a focal point to shape regional perspectives and demonstrate the advantages of these efforts. Throughout the process, opportunities for smaller-scale mobility concepts such as carpools, vanpools or shuttle services should be examined in keeping with the desire to provide mobility choices. The umbrella agency should not be predisposed to a particular mode of transportation, but rather let the market research help determine what level and type of service is warranted.

SRTP's current role as an umbrella agency allows them to provide direction and framework for prioritized coordination agreements with a strong combination of regional perspective and local provision of transit expertise. This role is particularly important for counties that currently do not have transit service in that the implementation of regional corridors can follow a selection process that looks beyond individual needs. This format also allows access to transit planning knowledge for participating counties without a transit service provider to represent their interests.

As part of the process to determine a corridor's merits, target goals and performance measures should also be developed in order to evaluate its performance. Once a pilot service or corridor is in place, the umbrella agency can also monitor its performance to help ensure its continuation after the demonstration program is concluded.

As the region's TDM service provider, Commuter Services's role will also be an important element of a successful coordination effort by SRTP. Commuter Services will be able to assist with data collection as well as regional, smaller-scale mobility management solutions. Sharing the data and information that identify the needed ridership base, revenue streams and visibility to regional participants in the process will increase the success as more complex inter-county operating agreements are contemplated.

This mechanism also reinforces existing planning mechanisms at the transit agencies as well as the regional/county levels and these priorities can be reflected in the evaluation matrix used to prioritize the various corridors. It cannot be overemphasized that this approach is intended to work beyond fixed-route commuter transit services, and even in corridors with less institutional opportunities in place, smaller-scale mobility concepts such as carpool, shuttle van, or even partnerships with local taxi providers can introduce coordination initiatives.

7.4 Policy Recommendations

The establishment of a state program in support of regional transit coordination initiatives would require regions to submit candidate corridors for selection from a limited funding source. A funding application would need to be prepared based on the completion of all previous steps in this implementation process. A demonstration of community support and demand for the service is essential, along with consideration of longer-term funding to maintain the service. The definition of service performance targets, specifically in terms of ridership and farebox recovery

should be estimated. During the demonstration period, a system for periodic review of service performance and adjustments should be specified.

Building on the concept that a demonstration project program could serve as the basis for funding regional transit service coordination, it is anticipated that corridor demonstration grant funding could be initiated for up to two demonstration projects every three years, with funding indexed to inflation. Funding would be competitively awarded, with grants three years in duration to allow for a sufficient amount of time to successfully rollout the new service. The first year could serve as a basic test of the regional corridor service based on market research evaluations of what type of service is needed. From there, up to two additional years could be used for the full implementation of the service. This time frame would allow the organizing agencies sufficient time to properly investigate the implications of providing and potentially expanding the service.

To encourage regions around the Commonwealth to participate in this program, diversity in applications could be promoted through a program that is “region neutral,” (i.e., two corridors in the same area of the state would not be selected in the same funding cycle), as well as allowing for passage of a certain amount of time (e.g., six years or two cycles) before selection of another corridor in the same region.

It is also anticipated that written plans for regional transit service coordination will need to be made part of a transit agency’s annual work program in order to continually provide appropriate guidance for decision making. In addition, regional transit considerations should be made part of the MPO/RPO Long Range Transportation Plans (LRTPs) and all corridor improvement studies in order to plan for transit-oriented development and improvements such as park and ride facilities and easier entrance/exit for express bus service.

Performance measures must also be in place to evaluate the corridor’s performance. Target goals, to be established by the participating jurisdictions and agencies, can include standard performance measures related to ridership thresholds, achieving a certain farebox recovery, or simply to promote a specific economic development or community objective.

Performance criteria identified as part of Act 44 could also potentially be used to help define success. These factors include:

- Passengers per revenue vehicle hour
- Operating costs per revenue vehicle hour
- Operating revenue per revenue vehicle hour
- Operating costs per passenger

Once a funding source is established, a series of evaluation criteria for demonstration projects should be further developed and refined as part of the process. This series of requirements for

the application process will demonstrate the merits of the service and include evidence of the following evaluation factors that are supportive of regional transit coordination:

- History and evidence of regional collaboration efforts between transit agencies and planning partners
- Evidence of an advisory group to guide the regional transit coordination process
- Market research to identify demand and potential level of service
- Indication of following a process to select and recommend a pilot corridor
- Identified/established methods for periodically re-evaluating services
- Contracting alternatives that would be supportive of regional transit service coordination
- Identification of short- or longer-term funding savings
- Land uses along a corridor or route that are supportive of transit service
- Use of traffic control innovations (e.g., ITS, queue jumping, signal timing, shoulder running, etc.)
- Documentation of joint use and joint development opportunities
- Development regulations that include transit, bicycle and pedestrian amenities
- Innovative funding sources (e.g., public-private partnerships [P3s], transit revitalization investment districts [TRIDs], etc.
- Presence of transit stop amenities such as security, shelters, aesthetic improvements and other issues that affect customer comfort
- Bicycle and pedestrian amenities such as bike racks, sidewalks, and pedestrian signal activation
- Supporting park and ride infrastructure in place, and capacity at existing park and rides
- Fare collection system compatibility between transit systems
- Use of tools supportive of the land use/transportation planning processes, including those included in PennDOT Pub 622, Improving the Land Use – Transportation Connection through Local Implementation Tools (described above)
- Adherence to other statewide factors, e.g., Keystone Principles, Smart Transportation Principles
- Consideration of potential for evolution modes from vanpool, to fixed-route, to bus rapid transit (BRT), to potential fixed guideway

As travel patterns and growth within the region will continually evolve, corridor priorities will also continue to adjust to reflect these characteristics. In order to retain flexibility with the decision-making process, it is recommended that demonstrated initiative and consensus among

regional transit partners serve as the most significant component of decision-making that determines the next demonstration corridor and service plan for implementation.

Similarly, the corridor evaluation factor ‘ease of implementation’ implies the important consideration of a longer-term funding plan among the corridor planning partners, with funding levels conditioned upon measurable success of a new service. This consideration is necessary to help ensure that short-term demonstration funding translates into sustainable and goal-oriented service planning.

Throughout this process, it is anticipated that PennDOT would serve in an oversight role and participate in forums to share knowledge for regionalization opportunities. As an example, the Transit Roundtables conducted as part of this study are recommended to be conducted as regular events, coordinated with the submission of regional transit coordination applications to reevaluate corridors and potentially analyze other promising corridors for consideration in the next application cycle. Regular forums also provide the opportunity to review planning assumptions and identify any needed improvements to the current regional service.

Appendices

Exhibit A-1

Project Press Release



1-866-579-RIDE, www.PaCommuterServices.org

FOR IMMEDIATE RELEASE

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Regional Transit Connections for Nine Counties Being Evaluated

Commuter Services of Pennsylvania announces the beginning of a Regional Transit Coordination Study - a collaborative effort of nine counties. This project will facilitate the planning and implementation of regional transit service and other "Smart Transportation" options. The benefits include congestion mitigation; air quality improvement; greater transit access for area residents, increased ridership; and ultimately an increase in mobility options which will provide quality of life benefits for all who live and work in the region.

Officials from the region recognize that the expansion of the region's urbanized areas and metropolitan areas necessitate that transit service and other "Smart Transportation" options need to be coordinated regionally. Transportation demand now stretches beyond traditional county boundaries, which is often the same boundary for its associated transit service.

In addition to the oversight provided by the joint study committee, additional business, environmental, and community stakeholders will be interviewed and invited to participate in two transit roundtables. Other public outreach will include surveys of existing transit riders, a website, and public meetings. In addition, a Speaker's Bureau will be formed; interested residents and businesses should contact Commuter Services to request a presentation to their organization.

The results of the study will chart a course for coordinated regional transit service for the immediate future, and also address how the transit providers can work together to provide greater opportunities for inter-county mobility for residents, commuters, visitors and businesses in South Central Pennsylvania. The study is expected to be completed in 2011.

BARTA Executive Director/CEO, Dennis D. Louwerse and Beth J. Nidam, Senior Transportation Planner for YCPC are co-chairs of the joint study committee which will

oversee the study's progress through Commuter Services of Pennsylvania. Louwerse and Nidam are board members of the non-profit organization. Members of the joint study committee include staff from the following transit authorities: Adams County Transit Authority (ACTA); Berks Area Regional Transportation Authority (BARTA); Lebanon Transit Authority (a.k.a. COLT); Red Rose Transit Authority (RRTA, Lancaster); York County Transportation Authority (rabbittransit); and Capital Area Transit (CAT, Cumberland-Dauphin-Harrisburg). Planning partners from the MPOs/RPOs also serve on the joint study commission. They include the Lancaster, Lebanon, Reading Area and York Metropolitan Planning Organizations (MPOs); Tri-County Planning Commission (Harrisburg MPO-Cumberland, Dauphin and Perry counties) and the Adams and Franklin Rural Planning Organizations (RPOs). Parsons Brinckerhoff is the leading consultant team for this effort, which also includes Michael Baker Jr. and GeographIT.

Information on Commuter Services is available at www.PaCommuterServices.org.

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About Commuter Services of Pennsylvania:

1-866-579-RIDE, www.PaCommuterServices.org

Funding is provided by the Federal Highway Administration, PennDOT and the region's metropolitan and rural planning organizations.

Commuter Services board includes transit agencies, planning organizations and chambers:

- Harrisburg Regional Chamber; the Gettysburg Adams, Lebanon Valley, Greater Chambersburg, and York County Chambers of Commerce; Lancaster and Greater Reading Chambers of Commerce & Industry;
- Adams County Transit Authority (ACTA); Berks Area Regional Transportation Authority (BARTA); County of Lebanon Transit Authority (COLT); Red Rose Transit Authority (RRTA, Lancaster); York County Transportation Authority (rabbittransit); Capital Area Transit (CAT, Cumberland-Dauphin-Harrisburg).
- Lancaster, Lebanon, Reading Area and York Metropolitan Planning Organizations (MPOs); Harrisburg MPO (Cumberland, Dauphin and Perry Counties) and Adams and Franklin Counties Rural Planning Organizations (RPOs).

Exhibit A-2

Frequently Asked Questions



Study FAQs,

What is the purpose of the study?

The region's many transit service providers have defined service areas that are often limited to running in just one county, while commuters often require cross-county travel. The purpose of the study is to identify strategies to overcome the current limitations to transit agencies working together and particular long and short term projects that can address the changing commuter needs of the region.

What are some of the barriers to transit agencies working together?

Technical issues include joint fare collection systems, specifications for joint purchase of vehicles or components, and schedule and route issues.

Administrative and operational disconnects generally concern two issues: money and turf. Money issues are generally which agency benefits from, and which agency pays for, the service improvements. Turf issues include agencies' fears that they may lose ridership, funds or control over operations.

How have these barriers been overcome elsewhere?

Other transit agencies have employed Memorandums of Understanding, Joint Powers resolutions, and purchase-of-services contracts to enable them to work together. Depending on the underlying enabling legislation, an agency may have to request additional legislation to realize an effective cooperative plan.

Why is the study being conducted now?

As population and jobs in the region have gotten more dispersed, many commuters cross county lines to get between home and work. While easy to do in a car, transit riders must often change buses, making for a longer, more stressful commute. Providing better, more convenient service saves time and money for all involved.

What are some of the benefits that may result from more integrated public transit?

There are many potential benefits to transit coordination. With the increased interest in "green" lifestyles, the role of transit in the region has been highlighted. Ridership may increase as transit service becomes more convenient. Greater transit access for residents of South Central Pennsylvania will lead to increased mobility options for the region. Additionally, increased transit use could reduce congestion and improve air quality. The end result is an enhanced quality of life for all who live and work in the region.

Who is directly involved with the study?

BARTA Executive Director/CEO, Dennis D. Louwerse and Beth J. Nidam, Senior Transportation Planner for YCPC are co-chairs of the joint study committee which will oversee the study's progress. Commuter Services of Pennsylvania is managing the study.

Members of the joint study committee include staff from the following transit authorities: Adams County Transit Authority (ACTA); Berks Area Regional Transportation Authority (BARTA); Lebanon Transit Authority (a.k.a. COLT); Red Rose Transit Authority (RRTA, Lancaster); York County Transportation Authority (rabbittransit); and Capital Area Transit (CAT, Cumberland-Dauphin-Harrisburg). Planning partners from the MPOs/RPOs also serve on the joint study commission. They include the Lancaster, Lebanon, Reading Area and York Metropolitan Planning Organizations (MPOs); Tri-County Planning Commission (Harrisburg MPO-Cumberland, Dauphin and Perry counties) and the Adams and Franklin Rural Planning Organizations (RPOs).

Parsons Brinckerhoff is the leading consultant team for this effort, which also includes Michael Baker Jr. and GeographIT.

How can members of the public get involved?

There are several ways the public will be involved. Existing transit riders on selected routes will be surveyed on their issues and concerns about their ride.

A web site, www.PaCommuterServices.org/RTCS will also be developed and study material will be posted as it is completed. In addition, a Speakers' Bureau will be formed. Those interested in scheduling a speaker for their neighborhood, civic, or business event should contact Commuter Services of PA, who will arrange for a speaker (1-866-579-RIDE). Public meetings will be scheduled throughout the area as well.

What will the final product be?

The end report will articulate what bus service can and should be in the future, to serve the people, businesses, industries, and institutions of South Central PA. It will include an implementation matrix with activity, responsible party, and targeted dates. A demonstration corridor that provides a suitable venue for implementing one of the service recommendations will be identified as an early action item.

When will the study be completed?

May 2011

How much does the study cost and who is paying for it?

A total of \$300,000 was provided by the Pennsylvania Department of Transportation (PennDOT) which includes a local match from the nine participating counties: Berks, Lancaster, Lebanon, Dauphin, Perry, Cumberland, York, Adams and Franklin.

Exhibit A-3

PennDOT's Smart Transportation Principles

PennDOT's Ten Smart Transportation Themes

1. Money counts
2. Leverage and preserve existing investments
3. Choose projects with high value/price ratio
4. Safety always and maybe safety only
5. Look beyond level-of-service
6. Accommodate all modes of travel
7. Enhance the local network
8. Build towns, not sprawl
9. Understand the context; plan and design within the context
10. Develop local governments as strong land use partners

Exhibit A-4

Summary of Transit Stakeholder Interviews

**Regional Transit Coordination Study
Stakeholder Interview Summary
November 8, 2010**



A total of 30 interviews were conducted in late summer-fall 2010 representing all nine counties of the study area. The interviewees represented a variety of interests including major employers, chambers of commerce, visitors bureaus, and economic development agencies. The purpose of these interviews was to gather critical information on the potential concerns, opinions, and issues they have about existing transit service, facilities, and the study. Information gleaned from these interviews forms the basis of the preliminary Purpose Statement and goals and objectives. The specific corridors identified also provide input to the transit corridors that will be proposed and examined at the first Transit Roundtable. A summary of the questions and answers received follows.

1. What regional transit connections do you think are needed across major corridors in the study area (be specific)?

- Reading to Harrisburg/ Carlisle
- York to Lancaster on Route 30
- Lancaster to Berks
- Lancaster to Lebanon - Smile Builders in Lancaster, Lancaster Regional Medical Center and Lancaster General Hospital
- Adams/Gettysburg to Harrisburg
- Downtown York to outlying manufacturing area (Caterpillar plant)
- Franklin County to Lancaster and Dauphin County via train
- Perry county to Harrisburg and Hershey via US 322
- Perry County connection to Carlisle via PA 34.
- Lancaster County to Harrisburg
- Lancaster to Dauphin County
- More transit needed from Lebanon to Hershey Medical Center
- Downtown Lebanon to Fredericksburg – Hollywood Casino
- Better connection to Lebanon Valley Industrial Park
- Downtown circulator in City of Lebanon
- Shippensburg University and regional cities of (Carlisle, Chambersburg, Hagerstown, Harrisburg, Lancaster and York)
- Connection between Chambersburg and Harrisburg
- Improved Service throughout I-81 corridor
- Amtrak from Lancaster to York
- Light Rail from Hunt Valley to York
- HIA and BWI to York (Is there service between Rabbit transit and Maryland and HIA???)
- From York County (Delta) to Aberdeen Proving grounds in Maryland.
- 222 is critical north-south corridor, need for park-and-rides. I-78 as a key east-west corridor
- Bus service between key cities, Reading-Harrisburg, Reading-Lancaster, timing is critical

- “Corridor of Opportunity” – 222
- Develop commuter rail network from Carlisle area through Harrisburg to Lancaster
- From York to outlying points of destination include Philadelphia, New York, York, Lancaster, Harrisburg, and Carlisle
- Need for better linkage (improvement of the Hunt Valley light rail system) into Baltimore and DC

Out of study area connections mentioned:

- Reading to Philadelphia Region (Schuylkill Valley Metro) (2)
- Reading to Lehigh Valley

2. What are the 3-5 most important issues or opportunities that the regional transit coordination plan should address (e.g., overcoming legal impediments to expand service outside of the transit agency’s existing service area)?

- Funding for Transit is a Key issue - need political will to fund transit – increase transit funding
- Need to improve existing services first – increase efficiency for express service – expand existing routes to meet transit needs
- Need to have a key understanding of where and who is using transit - need to consider who is in need for transit (no car households, persons with disabilities) – have good understanding of existing services
- Make sure there is not overlap of recommended service expansions with existing services that may be provided by public or private entities.
- Regional context - Coordination among the transit agencies is a crucial element to ensure that travel between counties is seamless
 - Need to coordinate schedules – establish ride guides
 - Universal fares
- Increase access to transit
- Improve bicycle infrastructure linking to transit
- Need to establish more land use policies that would allow for greater transit ridership – Smart Transportation principles – higher densities
- More park and rides in key locations
- Eliminated subsidized parking in Harrisburg in particular may be an incentive for more people to ride transit.
- Education and marketing of transit is a key issue in expanding transit ridership
- Try to work on changing perception of transit as inefficient
- Coordinate RTC study with PennDOT study of Cumberland County

3. In your opinion, what would be the most important results or major impacts from the regional transit coordination plan, for both the short-term and the long-term?

- Help to manage traffic – less congestion
- Environmental Benefits – decrease in pollution – smaller carbon footprint
- Economic benefits – more accessibility to jobs – companies expand recruiting area

- Transit focus is where jobs/employment centers are located
 - There is coordination among transit agencies to provide a more flexible transit system that is convenient for inter-county travel
 - Increased transit ridership - opens new markets for transit ridership
 - Expand the mobility of residents – efficient utilization of current system to maximize the number of people served
 - Result in more community support and willingness to pay for transit service
 - Result in a dedicated transit lane for inter-community service (e.g., use old railroad bridge over the Susquehanna)
 - Encourage business into outlying areas
 - Manage real estate values
 - Local support organized around Schuylkill Valley Metro Project
 - More use of technology - express routes on google transit
 - Increased safety
 - Demonstrate that in the long term transit is a viable transportation solution even if subsidies are needed.
 - Provide additional ways for employees of medical and assisted living facilities to get to work
 - Additional park and rides on I-81 corridor (Perry County).
4. How can we make sure that the recommendations from the regional transit coordination plan will receive the support of your County Commissioners or Board of Directors (if a transit agency)?
- Empirical evidence – show the problem and provide clear solution set through the use of good data and effective analysis – this may be used by politicians to help secure funding
 - Need to show benefits of improved transit to county residents not just what needs to be done
 - In general there is support for transit but there is lack of funding devoted to it
 - Need to educate business and local community – business forums
 - Work with the County Commissioners’ committees; vet recommendations with leaders/stakeholders such as the local hospital, disabled population, assisted living communities. Get this project in their “thought process.”
 - Promote greater coordination between the provision of affordable housing, economic development and availability of transit
 - Need to show how changing operations will be done efficiently – such as consolidating some services can be cost effective
 - Schuylkill Valley Metro project good example of coordination among counties – Montgomery and Berks –need better linkage between Lancaster and Berks.
 - Identify allies to support transit cause (e.g., Manufacturing Association of South Central Pa and other similar groups)
 - Need success at local level first before regional efforts
 - Seek support from PennDOT to help create census on the issue
 - Raise the profile of the MPO

- Support the county's business park and hence jobs in the county.

5. How can local transit and MPO officials best work with you to ensure that the recommendations of the regional transit coordination plan are implemented?

- Funding is a primary problem that needs resolution - need to be linked to funding source that doesn't lead to tax increase
- Problem in that there is a need for regional transit but land use decisions are made at a municipal level –
 - Could recommend incremental ways that municipalities can work together voluntarily to support regional transit plan.
 - Engage agencies like the local Council of Governments to act on behalf of groups of local municipalities (e.g., Capital Region CoG)
- Establish outreach strategy to effectively relay message to the public – assistance with advocacy – Strategic Communication Plan for results
- Attend meeting of groups like Economic Development Council where stakeholders may already attend – In Reading, chamber has an issue group that MPO is often invited to
- Partnerships and grass root efforts
- Public meetings and focus groups
- Business community should be viewed as stakeholder
- More long-term communication among MPO/transit agencies – this may help resolve some funding issues – MPO may be able to help with some outreach programs
- More Public relations on roles of transit agency and MPO to help businesses understand needs.
- Get the politicians involved
- Create Umbrella agency that would control all transit agencies (e.g., Commuter Services)
- Need to keep MPO officials informed in a clear and coherent manner on a continual basis
- MPO should work more closely with PennDOT to help direct more capital funds to transit
- Need to show balance between local and regional needs.

6. In your opinion, what is the best way to get the people you serve to ride the bus or use carpools/vanpools (and get them out of single occupant vehicles)?

- Start communication early with business, community leaders and public stakeholders – be sure to communicate results of study on a continual basis (media outlets such as *Central Penn Business Journal* could be used)
 - Inclusiveness and consensus building important
 - Need to actively engage
- More marketing of benefits of transit
 - Environmental
 - Cost Savings

- Make transit convenient and easy to use – increase frequency of service and provide more seamless connections
- Work closely with major employers, who know what their shifts are and who is carpooling and vanpooling – possibly expand Commuter Services Board effort for this
- Limit free parking
- Provide transit that aligns with work shifts
- Need for increased/continual communication among transit provider and entities such as the visitors bureau
- Encourage more alternative work schedules/flexibility – may allow more to use transit
- Address workforce/childcare issue
- PA welfare program has a provision to help buy a car - perhaps these dollars could be leveraged toward transit access
- Possible short term incentives for people to try riding transit (e.g., free fares for a short period of time, etc.) – may encourage them to continue to use service after programs end if gas prices increase again.
- Have transit agency define its role in the community
- Recreational, work with venues (Vanity Fair or arenas) to run shuttles to major events or activity centers
- Have park and rides in strategic locations to support MARC and other service to MD/DC.

Commuter Services (CS) Additional Questions and Responses (responses to questions 1-6 are incorporated above)

7. How do people get enrolled in the CS database? Why do they join?

- Anybody can join the database. Usually join for a carpool match.

8. Do all CS employer partners receive services from CS?

- There is no cost to the employers to “partner” with commuter services.
- Most employers join to help employees
- Services offered vary from employer to employer

9. How many vanpools does CS manage? Carpools?

- There are 8 vanpools presently in operation. All are affiliated with Federal agencies—all vanpool participants get a full subsidy from the Federal Government (\$230/month). Routes include:
 - York to Maryland
 - Shippensburg/Chambersburg to Carlisle
 - York to Mechanicsburg
 - Upper Dauphin to Mechanicsburg
- There are 6-15 riders per vanpool. Amount driven is between 25-80 miles one way.
- Commuter Services does not keep track of carpools. But they know that carpool matching is the most popular and easy service they offer.
- Emergency Ride Home—10 trips were used in 2009

10. It appears that 25% of residents in the southern part of the study area commute to Maryland. Does CS provide any service to commuters to Maryland? Any relationships with transit agencies in Maryland?

- Rabbittransit received a demonstration grant to provide service to Maryland. They have contacted MTA about coordinating or providing service to PA commuters. Maryland is not interested in partnering at this time.

11. Are there areas where CS services are more heavily used? Areas you have targeted for additional services/outreach?

- Berks and Franklin counties just joined Commuter Services. So services in those counties not as well established in the rest of the area.

- Tri State does a GIS map for Commuter Services of all the employers in the CS database. CS will see if this can be shared with the study team.

Exhibit A-5

Public Involvement Plan

Regional Transit Coordination Study Public Involvement Plan



Updated November 2010

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1 Introduction

1.1 Project Location

The study area encompasses the nine counties in Pennsylvania that are served by Commuter Services of PA. These counties include: Adams, Berks, Cumberland, Dauphin, Franklin, Lancaster, Lebanon, Perry and York.

1.2 Project Background

The continued growth in South Central Pennsylvania's urbanized and metropolitan areas means that transportation demand is stretching beyond traditional county boundaries, and that coordination of transit service at a regional level is needed. Officials from the region recognize that this growth necessitates that transit service and other "Smart Transportation" options need to be coordinated regionally.

The purpose of the study is to investigate whether and how to coordinate fixed-route-type transit services across county boundaries in the nine-county region and identify the related barriers to transit service coordination. The results of the study will chart a course for coordinated regional transit service for the immediate future, and also address how the transit providers can work together to provide greater opportunities for inter-county mobility for residents, commuters, visitors and businesses in South Central Pennsylvania.

1.3 Project Technical Overview

In order to evaluate the current transit conditions and potential solutions many of the tasks undertaken by the project team will involve public and stakeholder participation. The major tasks include:

- Investigating the need to coordinate transit services provided by different transit agencies in the nine-county region
- Identifying regional population and employment growth trends and travel patterns
- Identifying corridors where logical connections between different transit agency routes can be made
- Identifying the barriers to transit service connectivity
- Developing regional transit service concepts to address the identified needs
- Identifying short and long term actions that will lead to regional transit service coordination
- Developing an implementation plan for regional transit service projects
- Creating a policy that guides regional transit service planning, implementation, and funding

1.4 Project Outcome

The Final Report for the study will articulate what bus service can and should be in the future to serve the people, businesses, industries, and institutions of South Central Pennsylvania. It will include an implementation matrix with activity, responsible party, and targeted dates. A demonstration corridor that provides a suitable venue for implementing one of the service recommendations will be identified as an early action item. Appropriate policy will be developed that can be used as a model elsewhere in the state to expand regional coordination of transit services.

1.5 Project Team

Members of the Board of Directors of Commuter Services of PA will serve as the Joint Study Committee. This Board includes the stakeholders whose input is required, including representatives of the transit agencies: Adams County Transit Authority (ACTA), Berks Area Reading Transportation Authority (BARTA), County of Lebanon Transit Authority (COLT), Red Rose Transit Authority (Lancaster), York County Transportation Authority (rabbittransit), Capital Area Transit (CAT, Cumberland-Dauphin-Harrisburg); the Metropolitan Planning Organizations (MPOs): Lancaster, Lebanon, Reading Area and York MPOs, the Harrisburg MPO (Cumberland, Dauphin and Perry counties); and the Adams and Franklin Counties' Rural Planning Organizations (RPO). One board seat is also set aside for a corporate executive. Parsons Brinckerhoff is the leading consultant team for this team, which also includes Michael Baker Jr. and GeographIT.

1.6 Study Goals

With the input of the Joint Study Committee, the following draft goals were developed:

1. Define and address the regional mobility needs of residents, employers, visitors and commuters throughout the nine-county study area.
2. Document gaps in existing transportation services with the aim of maximizing opportunities for seamless regional connectivity between systems efficiently and cost-effectively.
3. Facilitate the development of a regional growth rate that reflects transit supportive land uses for application in comprehensive plans.
4. Describe unmet needs, both presently and anticipated in the future, based upon expected population and employment growth.
5. Identify opportunities for route restructuring, multimodal travel and other service planning modifications to encourage regional transit trip-making and reduce barriers to cross-system transfers.
6. Establish a process for coordinated and multi-agency approach for route-evaluation that includes methods for coordinating short-term operating decisions with long-term goals and objectives.
7. Produce cost estimates for operating scenarios in ways that create a more consistent approach for estimating capital and operating costs across properties.
8. Apply, where possible, Smart Transportation principles to key selected corridors.

These goals will be reviewed with the Joint Study Committee and finalized as part of the first Transit Roundtable.

2 Public Involvement Process

The intent of the public and agency involvement program for the Regional Transit Coordination Study is to actively inform, educate and involve the public and implementing agencies in defining, evaluating and recommending route restructuring and related coordination activities in the study area. Creating a collective vision for the future will be accomplished by fostering an understanding of regional transportation improvement options and by providing people with information and opportunities necessary to select among, prioritize, and recommend route changes and related coordination that promote increased mobility and accessibility in South Central Pennsylvania.

The public involvement program of the Transit Coordination Study incorporates three major concentration areas. These areas are:

- Stakeholder and Issue Identification
- Community Involvement
- Public Information

2.1 Purpose of Public Involvement Plan

The purpose of this Public Involvement Plan (PIP) is to outline process for communicating meaningful information to all involved parties and to solicit and record the public's views on key issues. The PIP also defines mechanisms for soliciting public input, promoting dialogue, and addressing community concerns regarding regional transit mobility.

2.2 Principles Guiding Public Interaction

Four principles will guide the development and implementation of the information gathering, community involvement, and public information components. :

- Build on existing partnerships and communication networks.
- Develop, distribute and display high quality, innovative, user-friendly and community appropriate information.
- Coordinate closely with local jurisdictions and user groups.
- Respond in a timely manner to questions and concerns

3 Components of the Public Involvement Program PIP

3.1 Information Gathering Component

Identifying and gathering information from the stakeholders involved is an important step in preparing the Regional Transit Coordination Study.

3.1.1 Stakeholder Identification

Reaching out to key stakeholders will help the project team better understand the current transportation issues and needs of the counties and transit agencies in South Central Pennsylvania. As mentioned above the Joint Study Committee will consist of members of the Board of Directors of Commuter Services of PA, which contains many of the stakeholders whose input is key to identifying current transit issues and future needs.

There are also four general stakeholder groups identified for this project that will be targeted to receive information and education early in the planning process in order to involve them at critical stages for public input. These stakeholders will be identified with the assistance of the Joint Study Committee. General categories of additional stakeholders include:

1. Large employers and employment service agencies that deal with

- Malls
- Office parks
- Hospitals
- Manufacturing
- Tourism

2. Staff representatives of transit agencies participating in and supporting the regional coordination study

- Schedulers
- Route planners
- Customer service representatives
- Financial analysts familiar with operating and capital costs.

It is anticipated that these transit agency employees will assist the Joint Study Committee and consulting team in providing data and reviewing methods and findings, validating technical considerations and, in general, serving as a technical and compliance resource to the project team.

3. County Commissioners in the nine county area

4. Citizens-at-Large

- **Transit riders and van pool participants** will be involved because they often know the existing system well, and can speak to its strengths and limitations.

3.1.2 Stakeholder and Issue Tracking Database

The project team will build on the existing Commuter Services of PA database to include the additional stakeholders identified above. Stakeholders will be identified by group so that they can be easily notified with appropriate and timely project information. All communication, except to the transit riders, will be electronic. The database will also serve as an issue tracking mechanism and will be updated to reflect meetings, issues of concern, and follow-up taken and needed. Before beginning any outreach program, a review all recent available data collected by the transit agencies, MPOs and Commuter Services of PA (Commuter Services) will be conducted. This includes the market research conducted by Commuter Services in both 2007 and 2010. A review of summaries of any recent citizen advisory group meetings conducted by the transit agencies will also be done. This information will be the baseline against which the results of public outreach will be compared.

3.2 Community Involvement Component

Outreach activities have been designed to reach each of the key stakeholder groups and sub-groups identified above. To summarize, the table below describes the planned outreach tools that will involve each key stakeholder group.

3.2.1 Joint Study Committee

There will be seven (7) Joint Study Committee meetings; the estimated time and purpose for each is listed in the table below. The purpose of the Joint Study Committee is to afford the key stakeholders the opportunity to review the preliminary data and begin to develop the working relationships and trust necessary to work together. This collaborative process is an effective way to build local consensus among the policy makers. A variety of participatory techniques such as small group discussions, brainstorming, and interactive mapping could be utilized. Preliminary ideas presented to the Joint Study Committee will be refined for presentation to the public based on the feedback and comments received. Such a transparent process is key to obtaining and keeping community support.

PB will work with Commuter Services to organize the Joint Study Committee meetings, which consists of notifying and confirming the member's involvement and presence at the meetings. We will facilitate the Steering Committee meeting and prepare/present project materials. We will also document the meeting and distribute the summary.

Meeting Number	Month	Purpose*
1	1 rd	Kick-off meeting; Review the preliminary goals and objectives and obtain existing conditions data
2	4 th	Review regional growth rate and land use assumptions, stakeholder interview findings, prepare for first Regional Transit Roundtable
3(TR)	5 th	Review trend analysis, opportunities and barriers to transit service; gap analysis, transit service concepts.
4	6 th	Review regional transit service recommendations, relevant institutional and operational barriers to coordination; possible performance measures for route selection
5	8 th	Review implementation plan and draft policy
6 (TR)	10 th	Review Draft Plan
7	12 th	Present Final Report

TR=Transit Roundtable

**Updated from scope of work*

3.2.2 Transit Roundtables

The third and sixth meetings of the Joint Study Committee will be organized in the manner of the South Central PA Transit Roundtable, which was organized by the Tri County Regional Planning Commission in the fall of 2009 and provided a forum for

transit system providers, county and municipal officials, major employers, and citizens to discuss local transit planning issues. The guest list of these two transit roundtables will begin with the Joint Study Committee members and will include representatives of the stakeholder groups identified above--large employers, employment service agencies, public officials, agency staff representatives, and citizens. The format of the first Roundtable will be highly interactive, with small group discussion facilitated by PB staff and reporting out of the issues and concerns to the larger group. For the first roundtable, GIS maps of the project area's existing conditions, organized around the existing service area and gap analysis and conceptual new routes, will be instrumental in helping participants review the draft purpose statement and goals and objectives. In order to "complete the loop" with the expanded list of stakeholders, the DRAFT PLAN will be presented at the second Transit Roundtable.

3.2.3 Informational Interviews

Informational interviews will be conducted early in the study with the members of the Joint Study Committee and additional stakeholders identified in the large employer and citizen categories. The purpose of these interviews is to gather critical information on the potential concerns, opinions, and issues they have about existing transit service, facilities, and the study. Information gleaned from these interviews will form the basis of the preliminary Purpose Statement and goals and objectives. The questions to be used in these discussions include:

1. What regional transit connections do you think are needed across major corridors in the study area (be specific)?
2. What are the 3-5 most important issues or opportunities that the regional transit coordination plan should address (e.g., overcoming legal impediments to expand service outside of the transit agency's existing service area)?
3. In your opinion, what would be the most important results or major impacts from the regional transit coordination plan, for both the short-term and the long-term?
4. How can we make sure that the recommendations from the regional transit coordination plan will receive the support of your County Commissioners or Board of Directors (if a transit agency)?
5. How can local transit and MPO officials best work with you to ensure that the recommendations of the regional transit coordination plan are implemented?
6. In your opinion, what is the best way to get the people you serve to ride the bus or use carpools/vanpools (and get them out of SOVs)?

3.2.4 Speakers' Bureau

A Speakers' Bureau consisting of members of the Joint Study Committee will be formed. The bureau members will make themselves available to speak at neighborhood, business, county, and other meetings in the study area. PB will provide a PowerPoint presentation and other information materials for their use. The Speakers' Bureau will be advertised on the project's, transit agencies', MPO's and Commuter Services' websites.

Providing a speaker for another group's meeting works well on at least two fronts. The group in question publicizes the meeting and makes all arrangements, and the attendees are more open and receptive because they are in more familiar circumstances. Comment cards will be distributed at meetings and input received will be entered into the comment database. The organization, date of meeting, purpose of meeting, and approximate attendance will also be recorded in the study database

3.2.5 Draft Plan Outreach

It is important that the Draft Plan be made known to as wide an audience as possible. Therefore, in addition to presenting the Draft Plan at the second Transit Roundtable, it will be presented to the Board of Directors of BARTA and the County Commissioners. There will also be an opportunity for any member of the JSC to present the Draft Plan at MPO/RPO and other meetings via a set of prepared slides and handouts, as appropriate. Many of the County Commissioners have a deep interest in this project and they are motivated to find transit solutions that will benefit their constituents. Up to three (3) geographically based meetings will be held for the County Commissioners' briefings. The same day as the briefing, PB will set up an information booth at a community or commercial venue identified by the Joint Study Committee. These information centers will have the same displays as the briefings, and staff will be available to answer questions and provide handouts and comment forms. The Draft and Final Plans and displays will also be made available on the Commuter Services website.

3.3 Public Information Component

Given Commuter Services of PA's extensive existing outreach within the study area, PB will rely on a coordinated effort between Commuter Services and the transit agencies to distribute press releases and other announcements to their large contact list.

3.3.1 Branded Outreach

In order to convey that a new, multi-agency approach is being undertaken to provide transit services in the region, the project requires its own brand. A logo will be developed and applied to all project materials, an approach that facilitates quick identification of project information and news.

3.3.2 Presentation Materials

We will prepare templates for all project materials for use at meetings. Appropriate written and graphic materials will be developed for targeted audiences. These could include informational handouts, fact sheets, and displays. Materials will be designed so that they can serve multiple purposes and be used for steering committee meetings, staff briefings, and web flyers.

3.3.3 Media Relations

Media relations will include news releases for local print and radio media outlets to support key milestones and decisions as the study progresses, as well as public support for any community meetings. It is assumed that any media contacts will be conducted by Commuter Services. We will support the media relations efforts by providing press releases and other support materials, e.g., talking points, as appropriate.

3.3.4 Web Page

Because of the multiplicity of other agency websites, the transit coordination study requires its' own branded webpage. A link will be provided on Commuter Services' website to a content area that will be populated by our team, and include an area for exclusive use by the Joint Study Committee and consultant team for sharing documents and other items of interest.

4 Revisions to the Public Involvement Plan (PIP)

This *Public Involvement Plan* has been developed to encourage early and ongoing public participation at the appropriate milestones within the planning timeline to enhance the quality of the Regional Transit Coordination Study and its ability to meet the future transit needs of Central Pennsylvania. As such, this PIP is a living document. Outreach activities undertaken will be evaluated when completed, and strategies and activities will be modified as necessary. Major revisions to the plan will be incorporated only after discussion with the PB project team and Joint Study Committee sign-off.

Exhibit A-6
List of Attendees
First Transit Roundtable
December 14, 2010

First Name	Last Name	Affiliation
Kevin	Alvarnaz	Wellspan Health
Anthony	Amadure	CCED
Chuck	Ardo	Office of Mayor, Harrisburg
Kevin	Barnhardt	County Commissioner, Berks County Commissioners Office
Sherry	Capello	Mayor, City of Lebanon
Will	Clark	Chief, YCPC; rabbittransit Board
Sherri	Clayton	Franklin County Planning Department
Ron	Cline	
Laverne	Collins	PennDOT
Kenneth	Contrisciane	Baker, Inc.
Jonathan	Crum	FHWA
Ray	D'Agostino	Executive Director, Lancaster Housing Opportunity Partnership and current TTAC member
Steve	Deck	PB Americas, Inc.
Felicia	Dell	Director, YCPC; Secretary, YAMPO
Gary	Eby	Perry County Transportation Authority Director
Gary	Eichelberger	Cumberland County Commissioner
Rich	Farr	rabbittransit (York)
Toby	Fauver	PennDOT Bureau of Transit - as per Toby F.
Allen	Freed	LT Board Vice Chairman
Ryan	Furgerson	Baker, Inc.
Don	Geistwhite, Jr.	CAT Board Member
Teri	Giurintano	County of Lebanon Transit
Jeff	Glisson	Red Rose Transit (Lancaster)
Dr. Jody	Harpster	Shippensburg University and HATS Technical Committee
Barry	Heckard	LT Board Chairman
Jim	Hoffer	CAT Executive Director
Donna	Horton	Department of Defense / Letterkenny Army Depot
Jim	Jenkins	Department of Defense / Letterkenny Army Depot
Bill	Jones	CAT (Harrisburg Area)
Dave	Kilmer	Red Rose Transit (Lancaster)
Mike	Kmiecinski	TCRPC
Adam	Krom	Amtrak
Dennis	Louwerse	BARTA (Berks)
Laura	Lutz	Commuter Services of PA
Pete	Martin	Gettysburg-Adams County Chamber/CS Davidson
Andrew	Merkel	Adams County Office of Planning & Design
Barbara	Miller	Patriot News
David	Morrison	HACC, CAT
Maggie	Mund	PB Americas, Inc.

Steve	Naylor	Perry County Commissioner
Beth	Nidam	York County Planning Commission
Harriet	Parcells	Lancaster County Planning Commission
Bill	Parkin	CAT (Harrisburg Area)
Frank	Pinto	CAT Board Chairman
Alan	Piper	Berks County Planning Commission
Janet	Pollard	Director, Franklin County Tourism Board
Noel	Purdy	Greater Chambersburg Chamber of Commerce
Beth	Raves	PennDOT Central Office; SRTP attendee for Dist. 8-0
Tim	Reardon	Tri-County Planning Commission
Bob	Reilly	Todd Platt's DCS
Stacia	Ritter	House Appropriations Committee/Chairman Joe Markosek
Ray	Rosen	Wellspan; Chairman rabbittransit Board
Rick	Rovegno	Cumberland County Commissioner
Jim	Ryan	Central Penn Biz Journal
Sean	Saffle	Commuter Services of PA
Richard	Schmoyer	Adams County Office of Planning & Design
Jason	Scott	The Sentinel
Crystal	Seitz	President, Greater Reading Convention and Visitors Bureau
Peggy	Shaffer	CAT Assistant Executive Director - Administration
Dennis	Sloand	PennDOT
Andrew	Smart	geographIT
Anna Lynn	Smith	PB Americas, Inc.
Kirk	Stoner	Director of Planning, Cumberland County
Linda	Thompson	Mayor of Harrisburg
Len	Usvyat	PB Americas, Inc.
Karl	Whitehill	Gettysburg Convention & Visitors Bureau
Shanna	Wiest	Realtors Association of York and Adams Counties (RAYAC)

Exhibit A-7

Breakout Groups Summary

First Transit Roundtable



Breakout Group Summary

First Transit Roundtable

December 14, 2010

Corridor Discussions

Brown/ Red Corridors

- Some maps of individual corridors did not show transit attractors that were part of a different map. For instance, brown corridor did not show transit attractors in Reading.

Brown corridor (Berks and Lebanon Counties via US-422)

Comments about alignment:

1. The route should go straight into Reading on route 422
2. There should be 2 buses in the peak period and 1 in the off-peak period
3. P&R locations:
 - a. Womelsdorf
 - b. Outskirts of Reading and Lebanon
 - c. Lebanon: VA Hospital
 - d. Lebanon: County of Lebanon government/Gap
 - e. Keep HACC in mind

Challenges:

- Bieber bus company – private operator
- Traffic on 422

Opportunities:

- There is really only one corridor connecting both cities
- Ease of implementation
- Many people come from Dauphin County and go to Berks

Red corridor (Berks and Lancaster Counties via US-222)

Comments about alignment:

1. Need to determine where to take the route in both cities – i.e. where should the station be
2. Really need to understand the work demographics to determine when and how much service to provide
3. In general, there should be 2 buses in the peak period and 1 in the off-peak period
4. P&R locations:
 - a. Ephrata
 - b. I-76
 - c. Outside of both cities
 - d. Reading:
 - i. 5 colleges to consider

- ii. Reading Hospital
- e. Lancaster:
 - i. Park City Mall
 - ii. Lancaster General Hospital

Challenges:

- How to get people to ride it - the alignment is so short

Opportunities:

- 222 is an ideal alignment
- Intermodal connections with Amtrak

Purple/Orange Corridors

- Note informal P&R on PA 283 near Roherstown Road
- Note business park on PA 230 near intersection with PA 772

Purple Corridor (Lancaster, Lebanon and Dauphin Counties via PA-283)

- In that it parallels the Keystone Corridor, and that parking for the train draws from a significant area, suggested that it would make more sense to provide an enhanced bus circulator service at the stations to serve employment areas that are beyond walking distance (e.g., Lancaster, Mount Joy, Elizabethtown, Middletown)
- Provide for a coordinated fare structure with Amtrak (exists to some extent already with CAT) and the various transit agencies; then market it.
- More parking is needed at the train stations
- Informal and formal Park and Rides should be studied, formalized where appropriate, and parking added as needed.
- Ownership of the P&Rs needs to be better understood; PennDOT should be involved from a funding standpoint.
- Emphasize the bi-directional nature of travel in this corridor – there are jobs near the train stations that residents from Harrisburg travel to.
- Suggestion to survey Amtrak riders to understand their final destinations
- Lancaster Train Station:
 - Lack of parking
 - Not convenient to rest of downtown Lancaster (CBD), though there is a trolley
- Need to have heavy reliance on TMA – Commuter Services – to market the benefits of transit, e.g., when it can be competitive with auto travel, it is often “me time” that is of benefit.
- Explore potential for employer-provided vans to get people from train station to places of employment vs. relying on public funds; investigate a P3 with Enterprise or another rental company for vans.
- Ask Chambers of Commerce and SRTP Board for support in promoting these services and making them happen.

Orange Corridor (Lancaster and York Counties via US-30)

- Be aware of non-CBD destinations and how best to serve them
- Consider running some buses as “add ons,” i.e., not all buses serve the same destinations
- Noted that there are many informal P&Rs now along this corridor
- Survey P&R users for origins and destinations
- Ideal to capture both commuter and leisure markets
- Bridge over Susquehanna is a funnel for this corridor

Blue/Pink Corridors

- Increased service on CAT Route 3 allows for high-frequency (no schedule needed) service in Downtown Harrisburg, whereas transfers and connection may prove less timely on the west shore (Camp Hill) location as depicted on the Pink Corridor.

Blue Corridor (Berks, Lebanon, and Dauphin Counties via I-81)

- The Lebanon Transit service (just initiated) to Fort Indiantown Gap should be analyzed first (after some time) to determine potential for further expansion
- Potential end point at Hamburg (Cabela’s, PA 61 Interchange)
- Keep in mind potential incoming commuters from Schuylkill County

Pink Corridor (Perry, Dauphin, and Cumberland Counties via US 11/15)

- Service terminated to Marysville (Perry-Cumberland County Line) due to insufficient ridership
- Current CAT service on Eastern side of Susquehanna River (US 22/US 322) is utilizing two buses and could use a third due to demand.
- There is a recently conducted Perry/Dauphin County Park and Ride survey, indicating that facilities are at capacity.
- Uncertain if a Park and Ride in Duncannon would be effective. Perhaps better to direct drivers to and expand existing Park and Rides across river in Dauphin County
- Any informal Park and Rides in this corridor could be formalized, but do not necessarily need transit. These can be places for carpooling.

Yellow/Green Corridors

- The group felt that a connection between Chambersburg to Gettysburg along Route 30 should be investigated to facilitate commuting, shopping, tourism, etc. along the route. Such a line could then “connect” to the cyan route, providing a connection to York and Lancaster.

- Overall, the most logical endpoint for the two corridors discussed was the bus/train terminal in Harrisburg as an effective connecting point to a number of other possible destinations.

Yellow Corridor (Franklin, Cumberland and Dauphin Counties via I-81)

- It was agreed that an origin point close to I-81 Exit 17 (Walker Rd., Chambersburg) is likely to be the most desirable, with Exit 14 (PA 316 Wayne Ave., Chambersburg) as a possible alternative.
- An interim stopping point near Exit 37 (PA-233 Newville) was felt to be desirable, either at the informal park and ride at the southwest quadrant of the interchange or the rest stop in the northeast quadrant. PennDOT indicated that the rest stop may not be feasible.
- Using this corridor to provide service between Letterkenny Army Depot and the Mechanicsburg Navy Base may prove effective.
- An endpoint at the bus/train terminal at Harrisburg was identified as potentially the most effective terminus.

Green Corridor (York and Cumberland Counties via I-83/PA-581)

- The green corridor as shown on the map extends into Carlisle from Dillsburg. The group seemed to agree that the corridor would be more effective if it continued along Route 15 into the Mechanicsburg/Camp Hill area and potentially continue to the bus/train terminal in Harrisburg.
- There are no formal park and ride facilities in the Gettysburg area to use as an effective origination point. Something near the outlet mall or otherwise near a Route 15 interchange east of Gettysburg was recommended.
- A stopping point near York Springs, perhaps at or near the Auto Auction site, was recommended. Adams County has identified some underserved populations in this area and has concerns regarding environmental justice, so increased access to transit options in the area is desired.

Gold/Cyan Corridors

- The group identified several large land uses that could be origins or destinations in each of the corridor areas. There were no modifications made to the Routes as identified.

Gold Corridor (Adams, York and Cumberland Counties via US-15/PA-74)

- Rabbittransit is providing express service between York and Harrisburg. Going very well, serves three park and rides and York/Harrisburg. Deluxe service with WIFI and TV.
- CAT provides service to Camp Hill and Mechanicsburg.
- There may be opportunities to serve industrial and office parks in Camp Hill and Mechanicsburg, but need to survey large employers in parks to learn more about their needs.
- Issues include secure military bases, free parking, and lack of restaurants and services in industrial/office parks makes people need to have a car for errands.

Cyan Corridor (Adams and York Counties via US-30/PA-94/ PA-116)

- Rabbittransit currently provides service between Hanover and York, and serves Utz and Snyder's facilities.
- There are a number of new big box developments that are not transit friendly—large setbacks, no sidewalks, no shelters. Reach out to property owners to inform them of transit service in the area and what they could do to make it more possible.
- There appear to be a number of potential origins/destinations along Route 30 between Gettysburg and Hanover, but more information needed about employees, shifts, etc.
- Wellspan Medical has several facilities in the area—Gettysburg Hospital and Wellspan Medical Center, and York Hospital and Apple Hill Medical Center. No transit service.

Issues, Challenges, and Opportunities (all corridors)

Administrative/Implementation

- Seamlessness of fares, schedules, limited number of transfers, flexible hours etc., needed in order to make it easy to use to move people throughout region.
- Need to define organizational structure and model
- Have the ability to point out the gaps and identify specific needs when completing Level 1 forms (related to funding from state)
- Issues across various municipalities, due to local match funding requirements and definition of the issues. There is a need for a consistent and on-going direction for transit provision and the definition of regional transit customers (i.e. job-seekers in Lancaster County are potentially Berks County employees and Berks County's future transit customers)
- The lack of a dedicated source of transit funding and lack of direction from DC was cited as a big challenge.

Marketing/Education

- Educate the public on the options that are available from transit providers
- Don't call them transfers, call them connections
- It is felt that frequency and flexibility of transit service outweighs the fare as the principle determinant of people using the route.
- It is important to engage the business community, but must show results more than process.

Land Use

- Explore smart growth principles such as TODs and publicize the success stories from around the region.
- Land use decisions still drive transportation and the viability of transit so need to set the stage economically (economic gardening) in order to allow the land-use/development to be suitable (in small steps) for future transit expansion.
- Jobs-housing-transportation – all interrelated
- Industrial park expansion anticipated to continue (esp. warehousing) along the I-81 corridor; these locations may not be located where multiple sites could be served by one route.

Destinations

- Connections to airports important – HIA, BWI, PHL, EWR –from the bus/train terminal was generally felt to be desirable.
- With the large number of military facilities in the area (Letterkenny, Army War College, Mechanicsburg Navy Base, New Cumberland Army Base, Ft. Indiantown Gap, etc.), transit connections to the V.A. Hospital in Lebanon are desirable.
- Connections from the regional universities (Shippensburg, Wilson, Dickinson) to shopping, trains and the airport are highly desirable with any corridors.

- Tourism was discussed and identified as a relatively minor aspect of overall transit need. Connections between the bus/train station and airport and the tourism centers in Lancaster and Gettysburg were identified as desirable, but not as critical as commuter connections.
- Participants felt more data was needed on origins and destinations of the cross county commuters in order to determine the corridors that bus service should serve; could potentially gain some insight by surveying commuters and others to identify employment destination across county lines.

Coordination/Cooperation

- Consider Phoenix example – three different transit agencies, all branded as one entity, particularly from rider’s perception
- May need to evaluate and consider consolidation of agencies in longer-term (Toby Fauver)
- Explore opportunities to work with private sector to provide more transit options - Both CAT and rabbittransit have successfully worked with developers to provide bus stops at mall parking lots.
- Each agency could do one loop on the corridor (orange) to share costs
- Discussed quarterly meetings between county planning directors, COGS, transit agencies and economic development professionals to discuss regional transit needs and how to best coordinate.

Park and Rides

- Informal park and rides provide insight into where better transportation options may be provided, especially for designing services to bring (collect) riders near a defined route rather than trying to take transit directly to the people. There is a need to identify both formal and informal park and rides throughout the region.
- Concern was stated for the ownership, maintenance and other policies related to new park and ride locations – as these uncertainties often restrict expansion into new locations. Maintenance of these facilities is not currently funded through PennDOT.

Multimodal

- Keep rail in mind for the future/coordinate with the train where possible
- Multimodal approach needed for all corridors. A diversity of mobility options will enable corridor services to be desirable. This includes guaranteed ride home, local as well as express bus service to return off hours, etc.

Exhibit A-8

List of Attendees

Second Transit Roundtable

April 11, 2010

Name	Affiliation
Alan Piper	Berks County Planning Commission
Allen Freed	LT Board Vice Chairman
Andrew Merkel	Adams County Office of Planning & Design
Anna Lynn Smith	PB Americas, Inc.
Anthony Amadure	Cumberland County EDC
August (Skip) Memmi	Dauphin Co Dept of Community and Economic Development
Barry Heckard	LT Board Chairman
Beth Nidam	York County Planning Commission
Bill Jones	CAT (Harrisburg Area)
Bill Parkin	CAT (Harrisburg Area)
Bob Jensenius	York Chamber of Commerce
Brandy Heilman	Commuter Services of PA
Carrie Cserr	Mayor, New Oxford
Carrie Stuart	Gettysburg Adams Chamber of Commerce
Cheryl Hicks	Senate of Pennsylvania (Transportation)
Chris Jandoli	PB Americas, Inc.
Dennis Louwerse	BARTA (Berks)
Don Geistwhite, Jr.	CAT Board Member
Doug Hoke	York County Commissioner
Gary Eby	Perry County Transportation Authority Director
George Weikert	County Commissioner
Harriet Parcells	Lancaster County Planning Commission
Janet Weiss	BARTA Staff
Jayne Dieruff	BARTA Board Chair
Jeff Glisson	Red Rose Transit (Lancaster)
Jenna Reedy	rabbittransit (York)
Jerry Cutshall	The Hershey Company (Hershey Foods)
Jim Hoffer	CAT Executive Director
John Keller	CAT Union President
Jonathan Fitzkee	Lebanon County Planning Department
Julie Shade	Modern Transit Partnership
Kathleen Mangan	West Shore Chamber
Kris Troup	Executive Director, Lebanon County Planning Dept.
Larissa Bailey	Harrisburg Regional Chamber
LaVerne E. Collins	Director BPT, PennDOT Bureau of Transit
Maggie Mund	PB Americas, Inc.
Meredith Biggica	House Democratic Transportation Committee
Odessa Trinkle	Franklin County Integrated Transportation System
Rich Farr	rabbittransit (York)
Rick Wynn	Director, Franklin County Human Services
Robert Bugalla	CAT Union Vice President
Robert Harrop	East Penn/DEKA
Ryan Furgerson	Baker, Inc.
Sherri Clayton	Franklin County Planning Department
Stanley Wannop	New Oxford Borough Council
Steve Deck	PB Americas, Inc.

Teri Giurintano	County of Lebanon Transit
Tim Reardon	Tri-County Planning Commission
Toby Fauver	Deputy Director, PennDOT Bureau of Transit
Will Clark	Chief, YCPC; rabbittransit Board
SSG James Hull	Department of Defense / Letterkenny Army Depot
Peggy Shaffer	CAT, Assistant Executive

Exhibit A-9

Breakout Groups Summary

Second Transit Roundtable



Breakout Group Summary

Transit Roundtable 2

April 11, 2011

Group 1 Organizational Framework

Candidate organization frameworks described; strengths and weaknesses of each approach were discussed.

It was noted that there are existing informal arrangements between providers to coordinate services.

- An example of an informal arrangement was discussed
- Informal arrangements represent a good start for regional coordination and should be highlighted as a success and possibly serve as a model
- Opportunities to expand coordination within the context of a larger region with guidance for providers on how to do so is an aim of this project

Incremental approach to coordination may be easier at first than a more formalized process.

SEPTA was cited as an example of how a larger regional transportation system can be assembled of previously disconnected assets and facilities.

Political will is needed to help county or city-based systems look beyond their geographic constraints.

- Capital Area Transit: an example of a multi-county, multi-jurisdictional system already operating within project area
- Agreement between Adams and York County identified as an example of a regional agreement on transit services
- Agencies are already talking about these services – CAT, Red Rose and rabbittransit
- Value of the “Umbrella Agency” approach for planning and capital programming likely to lead to consistency of approach for routes or services that provide regional connectivity
- Benefits of umbrella agency approach vs. informal arrangements discussed
- Role of County Commissioners in new regional routes discussed – can agencies partner on regional routes without consent of County Commissioners? Ideally this can be kept at the agency level.

As the region begins to be combined into one metropolitan area, sharing of resources becomes both an opportunity and a challenge.

Fare Coordination: Fare and fare coordination is a significant issue.

- Transfers from one system to another, lack of a coordinated fare structure and lack of a common fare media all serve as disincentives to use transit

- All of this needs to be invisible to rider – disconnect between agency view of coordination (as difficult and complicated) and user (should be simple and integrated)
- Expectation that these cross agency issues can and should be worked out

Role of Technology: What role does technology play in service coordination?

- Swipe cards and EZ-Pass cited as example of potential technological solutions
- Are there computer programs to help oversee the sharing of fares and passengers?

Incremental Implementation

- Two tier system concept
- Informal coordination on specific routes at outset
- Creation of more formal system to address institutional issues
- This would then transform into umbrella-type agency as more routes came online

Marketing is key to making this work

- Selling these combined services as sustainable transportation solutions
- Younger people more comfortable using transit

What role can PennDOT play in helping regions coordinate services?

- Who is the champion for transit coordination?
- Without organization or authority is overseeing role, and to manage sharing of funding, hard to make the case to local counties for service coordination
- What about rural parity? Mix of urban, developing and rural counties in project area. Difficult to ensure that all receive appropriate level of services cost-effectively

Group 2 Legislation and Funding

The intended outcome of this breakout group was to obtain recommendations from BPT, legislators and others on the best ways to help fund regional transit, which would be included as part of the study's implementation plan. The following questions helped to guide the discussion:

1. What is BPT's perspective on a new state program for funding regional transit?

Demonstration projects are currently suspended, but the mechanism for their execution is still in place. Demonstration projects are for three years then it is up to the local sponsors to make the decision to keep the program going and compete for state and federal funding to continue the project. In order to continue, these projects must meet a prescribed set of criteria.

Due to declining sales tax revenues, overall operating dollars are down, but if revenues start to increase then there will likewise be an increase in formula funding.

In terms of continuing multiple transit operations, the Lackawanna/Luzerne/Hazleton example was cited including the potential of \$1.8M of savings per year by 2017 if these systems were to consolidate. This stated, cooperation is a good first step in terms of identifying potential cost savings, e.g., administrative services and operational coordination. Potentially, any savings from consolidating operations could be used to provide additional regional service.

There is more of a challenge for capital funds vs. operating funds.

2. What would be needed in potential legislation?

It was agreed that separate funding for facilitating regional transit coordination is needed in legislation, with local political support. However, issues such as labor pay rates and variations in unions would need to be considered, and shared administration may be encouraged.

Control would need to be with the local governments vs. the Commonwealth, such that elected officials would see the benefit in providing regional coordination. Legislation would have to reflect what the locals are interested in providing and it would be hard for the state to do this.

This legislation could potentially start off as coordination of services, and maybe in the future see the opportunities for more efficiency through regional transit consolidation in a piecemeal fashion.

3. What is the potential for enabling legislation to help support regional transit coordination?

Legislation needs to show why it is important to work together. Potential examples could include capital purchases such as unified systems (e.g. fare collection) and trip planning software. Service planning and standards could also be brought together to evaluate poor performing routes and prepare Transit Development Plans). Key staff positions could also possibly be shared.

It was agreed that a comprehensive solution is needed – one that encompasses all modes including rail freight, airports, highways and transit – and that it should be all or nothing. Ideally there would be a larger pie available for transit, with the same percentage allocated among the various transit agencies in the State.

The message of the importance of locals was made clear in that it is important to educate on the importance of local transit and its benefits. However, a local tax would not be supported due to political ramifications and even if it was it would be instead of (not in addition to) a certain portion of State funds.

4. *What is the timing or window for such an opportunity?*

There is currently a potential window to get language in a transportation funding bill for regional transit coordination in the May-June timeframe.

In any legislation there would be some form of performance measures in place, e.g., performance criteria used for Act 44 (passengers per revenue vehicle hour, operating costs per revenue vehicle hour, operating revenue per revenue vehicle hour, and operating costs per passenger). Legislators will need to be educated that farebox is not the only performance measure, particularly in less urban areas.

5. *What is the potential for P3's as related to regional transit coordination?*

The potential for P3's was seen as important and occurring between businesses and transit agencies. This would be discussed in Group 3 as part of Community Partnerships.

It was discussed that MPOs have the ability to transfer highway funds to transit (e.g., CMAQ funding), but their hands are often tied in a relatively highway-dominated state (e.g., large number of structurally deficient bridges). However, there is interest in showing the benefits of transit and traffic operational changes such as queue jumpers and operating on shoulders that could make transit faster than an auto commute. TCRPC is doing a study in Carlisle to identify potential recommendations to this effect.

6. *What is the best way to secure/encourage a local match and/or reduce the burden on the local municipalities/counties?*

Employers need to understand "what's in it for them." Suggestions included hosting an open house at their facilities with groups such as the County Commissioners and Chambers of Commerce.

Overall it was agreed that SRTP could serve as the facilitator for regional transit coordination, particularly with regard to the "look and feel" of transit services from the passenger's perspective. SRTP functions with the right attitude to make this coordination move forward, and any turf issues would need to be left at the door. The potential perception from the smaller counties losing turf would need to be addressed.

Incremental change would be most desirable for now, but this process needs to begin with the end in mind, focusing on the longer-term.

Group 3 Community Partnerships

The purpose of this session was to learn about existing partnerships for regional service that could be documented as “successes” and also identify types of partnerships needed and ways to approach businesses and local governments.

Existing Partnerships

Commuter Services of PA has many existing programs in place with area employers. These include:

- Letterkenny Vanpools
- Hershey Carpools
- East Penn Emergency Ride Home in conjunction with BARTA service

Transit agencies have partnerships with malls and large stores for park and rides:

Lebanon Transit	Walmart park and ride, express bus to Harrisburg
Lebanon Transit	Indiantown Gap park and ride
	Vanpools, carpools,
	Express service to Harrisburg—one section
BARTA	service to East Penn manufacturing plant funded by CMAQ
	Service around the clock; serves 3 shifts

CAT provides dedicated transit service to Hershey Park temporary workers every summer. CAT has purchased buses for the program that are only used for that purpose. It is worth it because Hershey Park guarantees CAT sufficient revenue to cover the costs.

Park and Rides are seen as win/win situations between the transit agencies and the malls because the parking lots are rarely full and the transit users often shop before or after work.

Transit agencies have partnerships with each other:

- Lebanon Transit-, rabbittransit, and CAT meet regularly to discuss fare structure
- Lebanon Transit and CAT are seeking funding for express service along Rt 422
- Planning for Corridor 2 did a good job of forging relationships between transit providers, Hershey enterprises (park, medical center, factory) and public officials

Future Partnerships/(ways to improve Transit Business Partnerships)

Transit agencies need to solve business' problems in order to become more effective partners.

- Increase access to employees
- Help reduce turnover
- Help reduce absenteeism

Transit agencies should work with local chambers of commerce to identify and facilitate discussions with businesses who may need service.

Transit agencies must make sure the waiting areas/bus stops are clean and safe.

Transit agencies should employ new technologies to inform riders of schedules, delays, etc.

Transit agencies/local government partnerships

Selective education about how local ordinances to be transit friendly

- Buildings close to road
- Sidewalks
- Bus pull offs
- Turning radii to accommodate buses
- Increase density to make transit a more viable choice

There are two new developments that have been designed with transit in mind.

- Shrewsbury Commons—Park and Ride
- New development in Lebanon—bus pull offs

Communication is key. Transit agencies need to recognize and celebrate businesses and local governments that are actively partnering with them. Call them out as demonstration projects. Commuter Services was identified as a potential actor in this regard. The potential for a reward ceremony was discussed to recognize these employers.

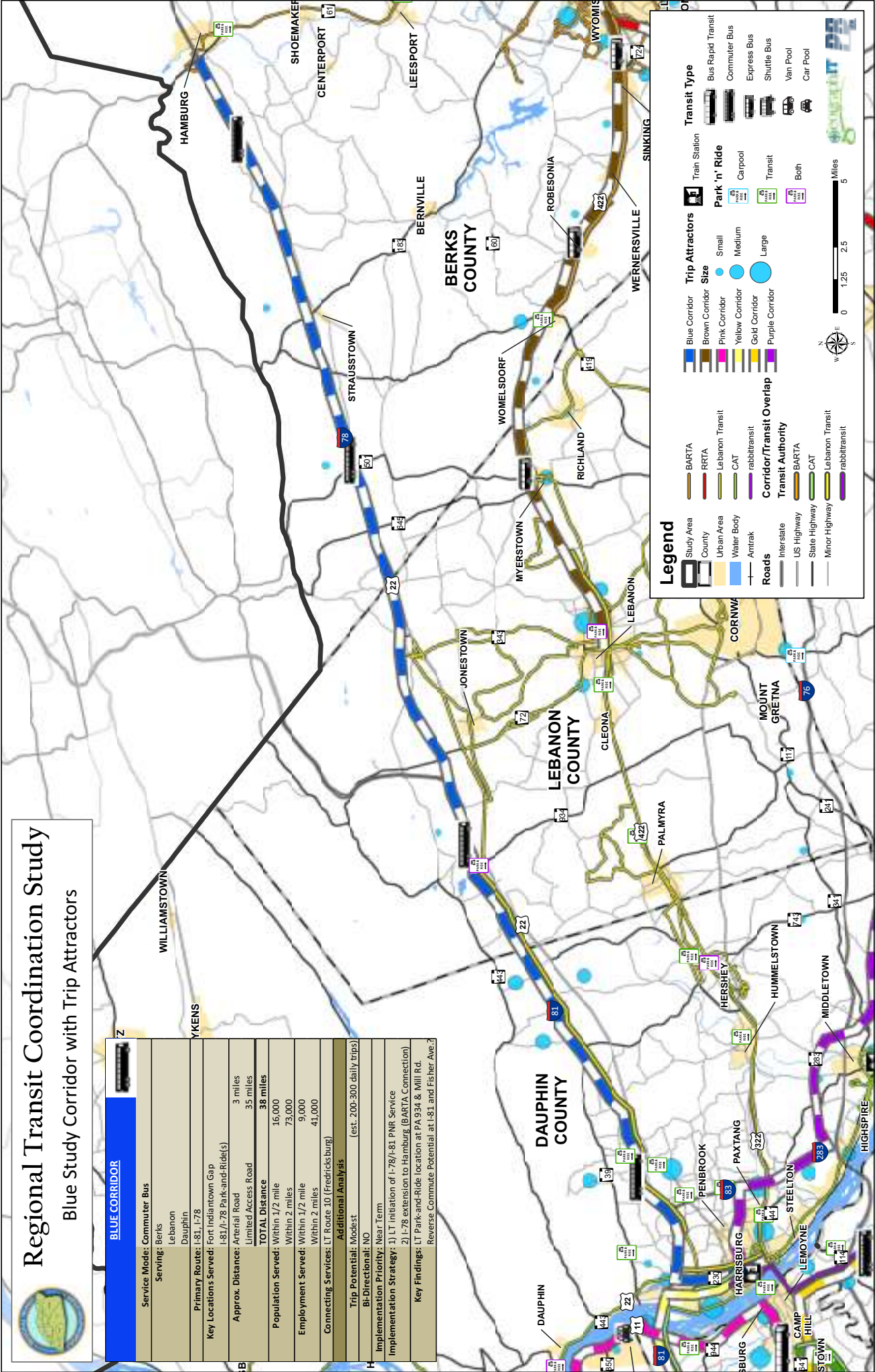
Exhibit B-1

Corridor Summaries

Regional Transit Coordination Study

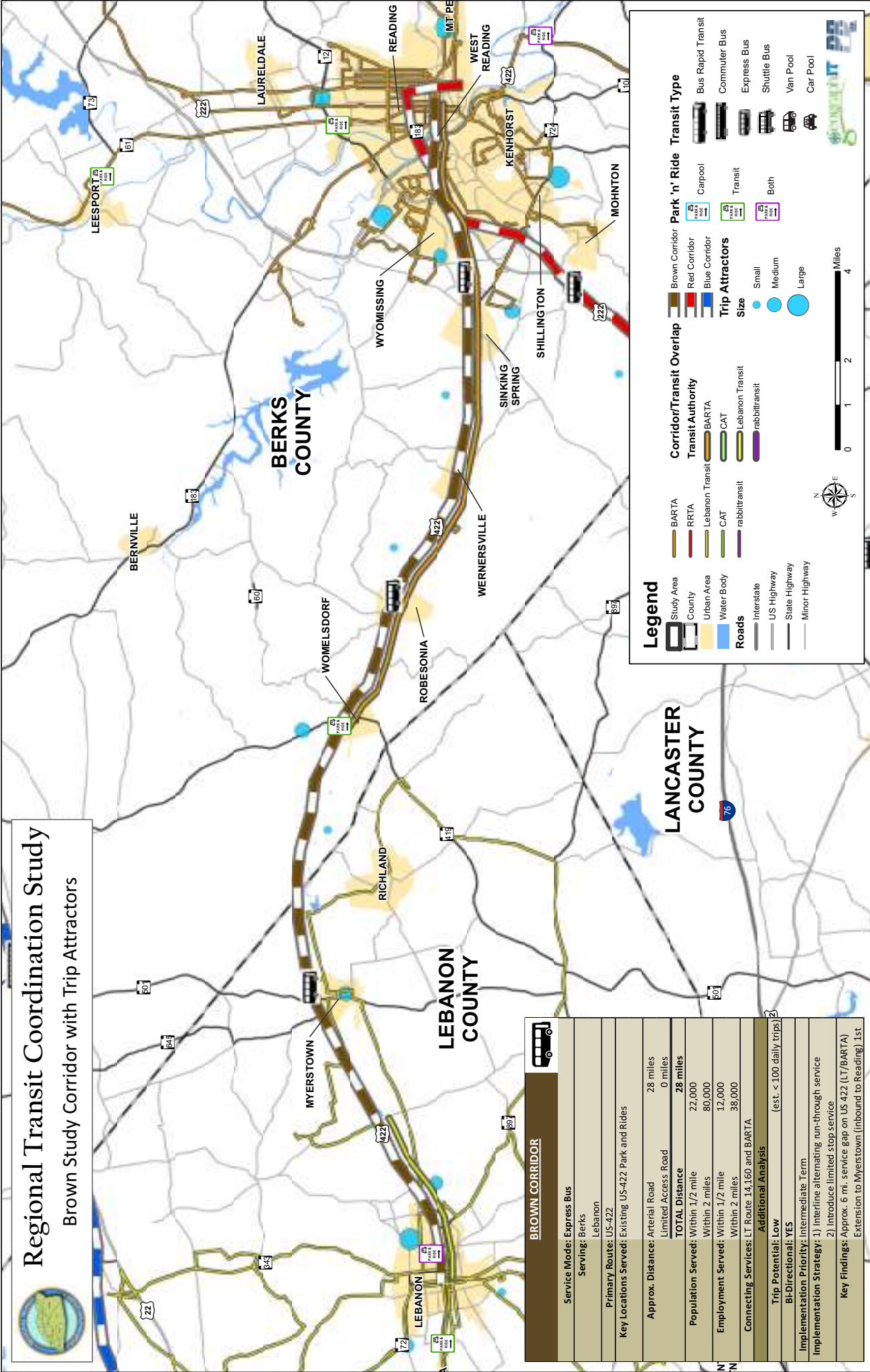
Blue Study Corridor with Trip Attractors

BLUE CORRIDOR	
Service Mode: Commuter Bus	
Serving: Berks Lebanon Dauphin	
Primary Route: I-81, I-78	
Key Locations Served: Fort Indiantown Gap I-81/I-78 Park-and-Ride(s)	
Approx. Distance: Arenal Road Limited Access Road	3 miles 35 miles
TOTAL Distance	38 miles
Population Served: Within 1/2 mile	16,000
	73,000
Employment Served: Within 1/2 mile	9,000
	41,000
Connecting Services: LT Route 10 (Fredricksburg)	
Trip Potential: Modest	(est. 200-300 daily trips)
Bi-Directional: NO	
Implementation Priority: Near Term	
Implementation Strategy: 1) LT initiation of I-78/I-81 PNR Service 2) I-78 extension to Hamburg (BARTA Connection)	
Key Findings: LT Park-and-Ride location at PA 934 & Mill Rd. Reverse Commute Potential at I-81 and Fisher Ave.3	



Regional Transit Coordination Study

Brown Study Corridor with Trip Attractors



BROWN CORRIDOR	
Service Mode: Express Bus	
Serving: Berks Lebanon	
Primary Route: US-422	
Key Locations Served: Existing US-422 Park and Rides	
Approx. Distance: Arterial Road	28 miles
Limited Access Road	0 miles
TOTAL Distance	28 miles
Population Served: Within 1/2 mile	22,000
Within 2 miles	80,000
Employment Served: Within 1/2 mile	12,000
Within 2 miles	38,000
Connecting Services: LT Route 14,160 and BARTA	
Additional Analysis	
Trip Potential: Low	(est. < 100 daily trips)
Bi-Directional: YES	
Implementation Priority: Intermediate Term	
Implementation Strategy: 1) Interline alternating run-through service 2) Introduce limited stop service	
Key Findings: Approx. 6 mi. service gap on US 422 (LT/BARTA) Extension to Myerstown (Inbound to Reading) 1st	

Legend

Study Area

- County
- Urban Area
- Water Body

Roads

- Interstate
- US Highway
- State Highway
- Minor Highway

Corridor/Transit Overlay

- BARTA
- RRTA
- Lebanon Transit
- CAT
- rabbittransit

Transit Authority

- BARTA
- CAT
- Lebanon Transit
- rabbittransit

Trip Attractors

Size

- Small
- Medium
- Large

Park 'n' Ride

- Carpool
- Transit
- Both

Transit Type

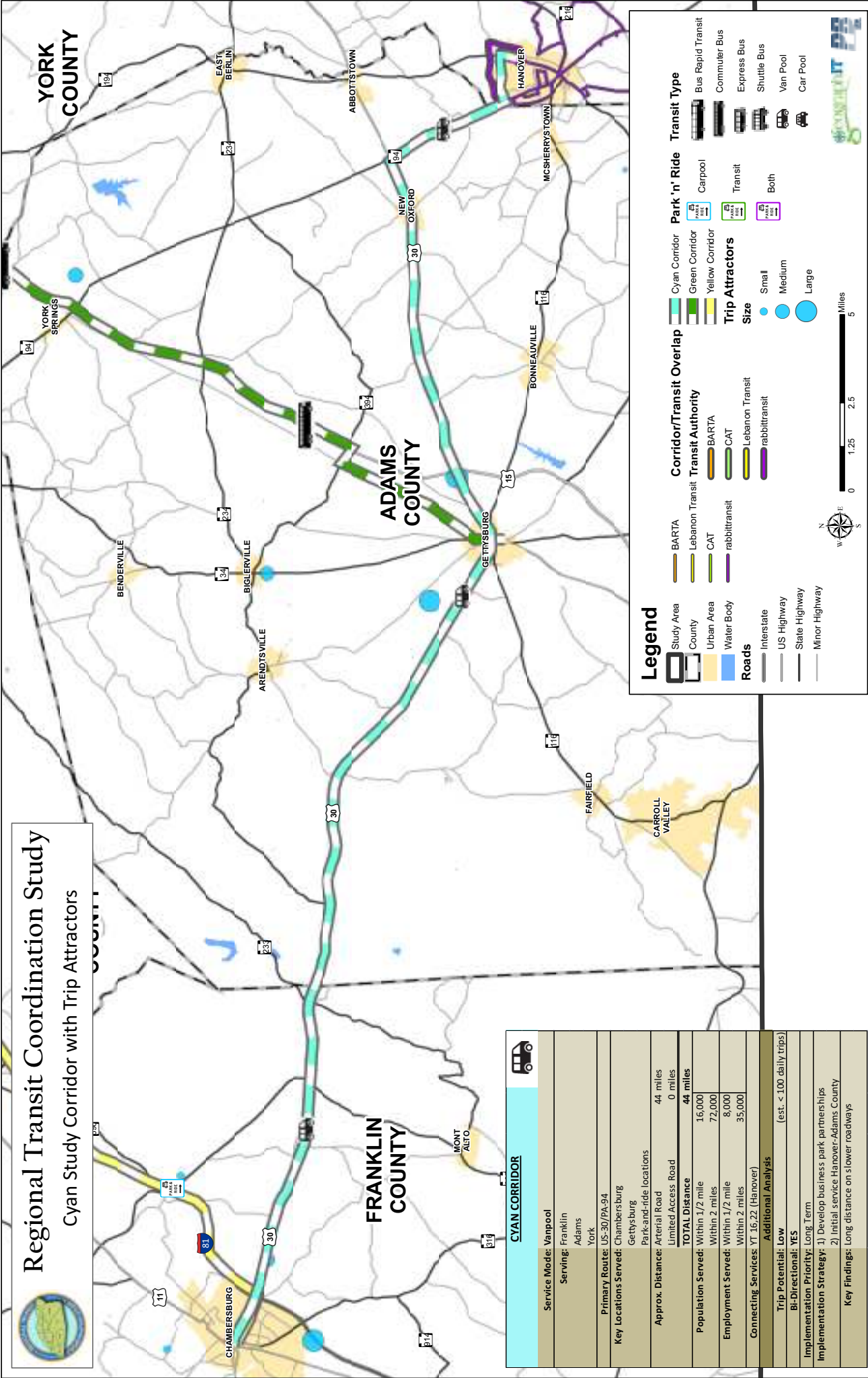
- Bus Rapid Transit
- Commuter Bus
- Express Bus
- Shuttle Bus
- Van Pool
- Car Pool

0 1 2 4 Miles



Regional Transit Coordination Study

Cyan Study Corridor with Trip Attractors



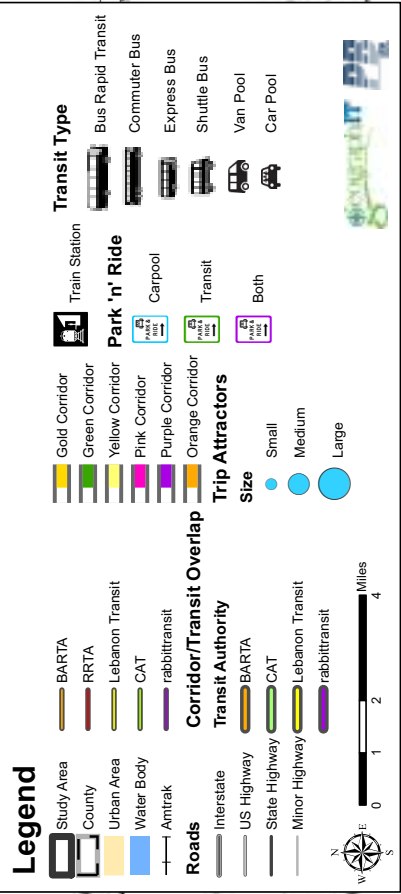
CYAN CORRIDOR	
Service Mode: Vanpool	
Serving: Franklin Adams York	
Primary Route: US-30/PA-94	
Key Locations Served: Chambersburg Gettysburg	
Approx. Distance: Arterial Road 44 miles Limited Access Road 0 miles	
TOTAL Distance 44 miles	
Population Served: Within 1/2 mile 16,000 Within 1 mile 72,000 Within 2 miles 8,000	
Employment Served: Within 1/2 mile 8,000 Within 1 mile 35,000 Within 2 miles 35,000	
Connecting Services: YT 16/22 (Hanover)	
Additional Analysis	
Trip Potential: Low	(est. < 100 daily trips)
Bi-Directional: YES	
Implementation Priority: Long Term	
Implementation Strategy: 1) Develop business park partnerships 2) Initial service Hanover-Adams County	
Key Findings: Long distance on slower roadways	



Regional Transit Coordination Study

Gold Study Corridor with Trip Attractors

GOLD CORRIDOR	
Service Mode: Commuter Bus	
Serving: York	
Cumberland	
Primary Route: I-83/PA 581	
Key Locations Served: Mechanicsburg Business/Industrial Parks	
Approx. Distance: Arterial Road	10 miles
Limited Access Road	22 miles
TOTAL Distance	32 miles
Population Served: Within 1/2 mile	21,000
Within 2 miles	92,000
Employment Served: Within 1/2 mile	13,000
Within 2 miles	55,000
Connecting Services: CAT Route M (Mechanicsburg)	
Additional Analysis	
Trip Potential: Modest	(est. 100-200 daily trips)
Bi-Directional: NO	
Implementation Priority: Intermediate Term	
Implementation Strategy: 1) Engage/survey large single site employers	
2) Develop specific route (public connections)	
Key Findings: Seems difficult to accommodate non-CBD trips	
Need to define York-Cumberland travel patterns	

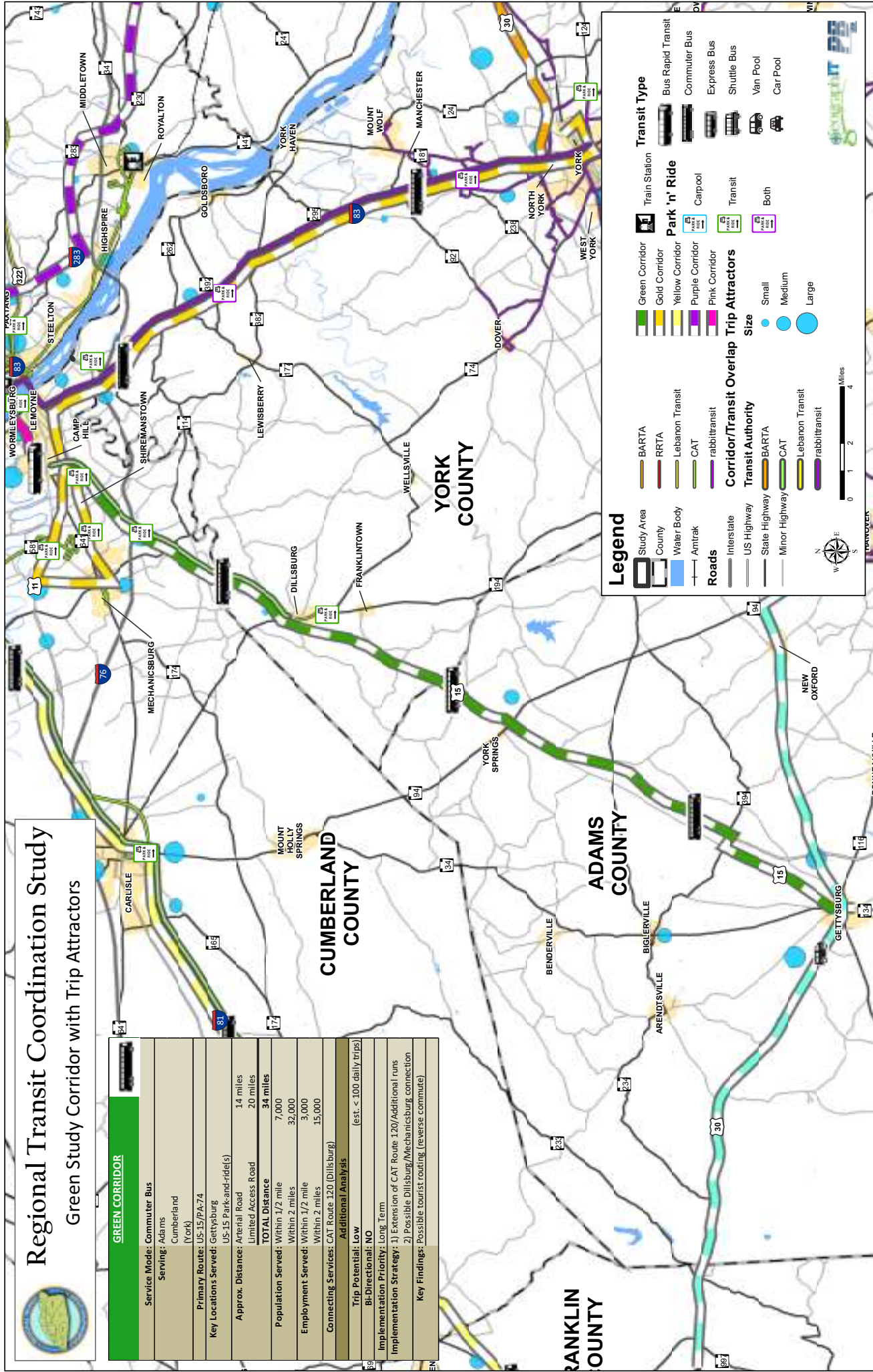


Regional Transit Coordination Study

Green Study Corridor with Trip Attractors



GREEN CORRIDOR	
Service Mode: Commuter Bus	
Serving: Adams Cumberland (York)	
Primary Route: US-15/PA-74	
Key Locations Served: Gettysburg US-15 Park-and-ride(s)	
Approx. Distance: Aerial Road Limited Access Road	14 miles 20 miles
TOTAL Distance	34 miles
Population Served: Within 1/2 mile Within 2 miles	7,000 32,000
Employment Served: Within 1/2 mile Within 2 miles	3,000 15,000
Connecting Services: CAT Route 120 (Dillsburg)	
Additional Analysis	
Trip Potential: Low	(est. < 100 daily trips)
Bi-Directional: NO	
Implementation Priority: Long Term	
Implementation Strategy: 1) Extension of CAT Route 120/Additional runs 2) Possible Dillsburg/Mechanicsburg connection	
Key Findings: Possible tourist routing (reverse commute)	

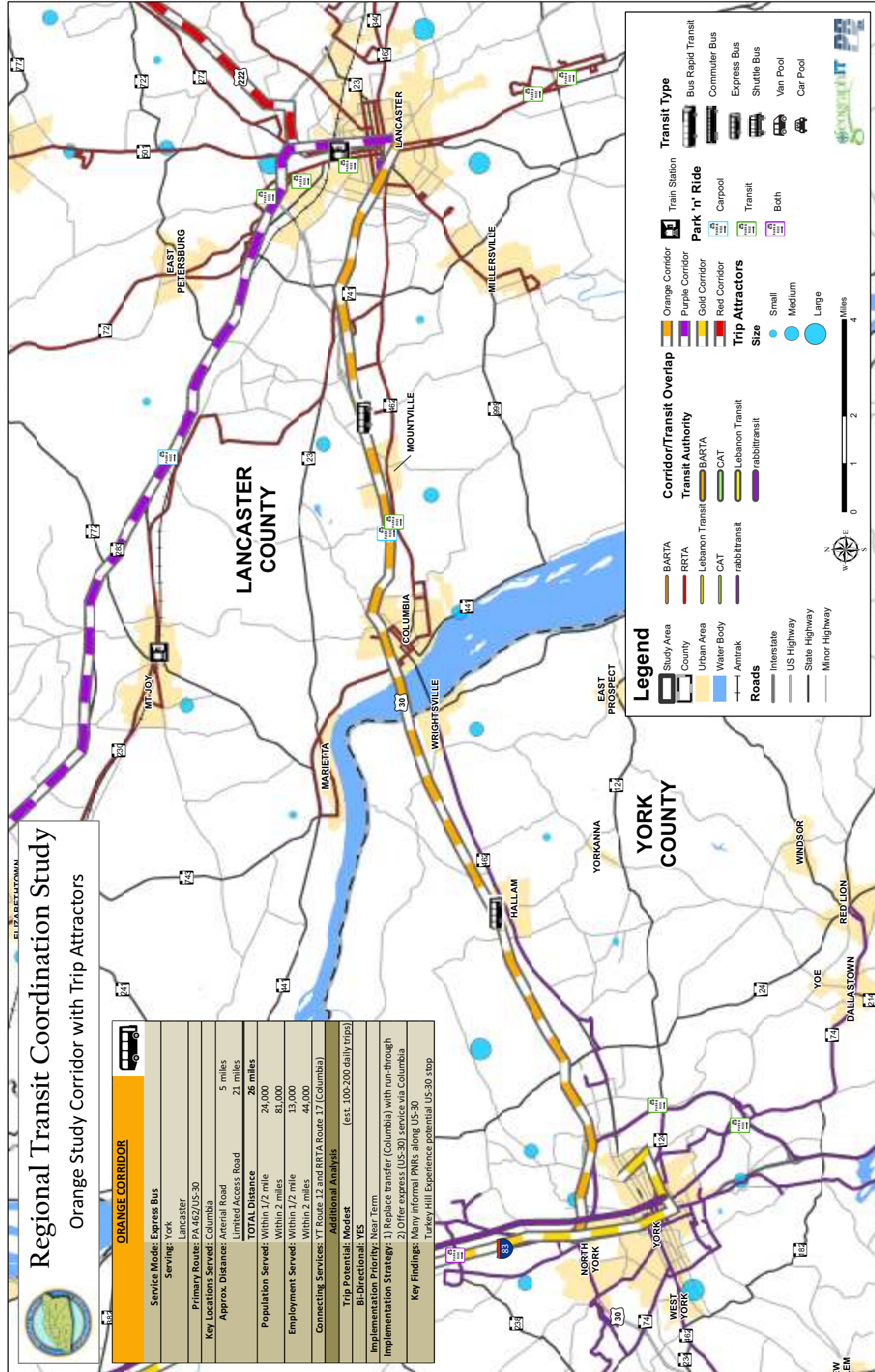




Regional Transit Coordination Study

Orange Study Corridor with Trip Attractors

ORANGE CORRIDOR	
Service Model: Express Bus	
Serving: York	
Primary Routes: PA 462/US-30	
Key Locations Served: Lancaster	
Approx. Distance: Arterial Road	5 miles
Limited Access Road	21 miles
TOTAL Distance	26 miles
Population Served: Within 1/2 mile	24,000
Within 2 miles	81,000
Employment Served: Within 1/2 mile	13,000
Within 2 miles	44,000
Connecting Services: YR Route 12 and RRTA Route 17 (Columbia)	
Additional Analysis	
Trip Potential: Modest	(est. 100-200 daily trips)
Bi-Directional: YES	
Implementation Priority: Near Term	
Implementation Strategy: 1) Replace transfer (Columbia) with run-through	
2) Offer express (US-30) service via Columbia	
Key Findings: Many informal PMRs along US-30	
Turkey Hill Experience potential US-30 stop	

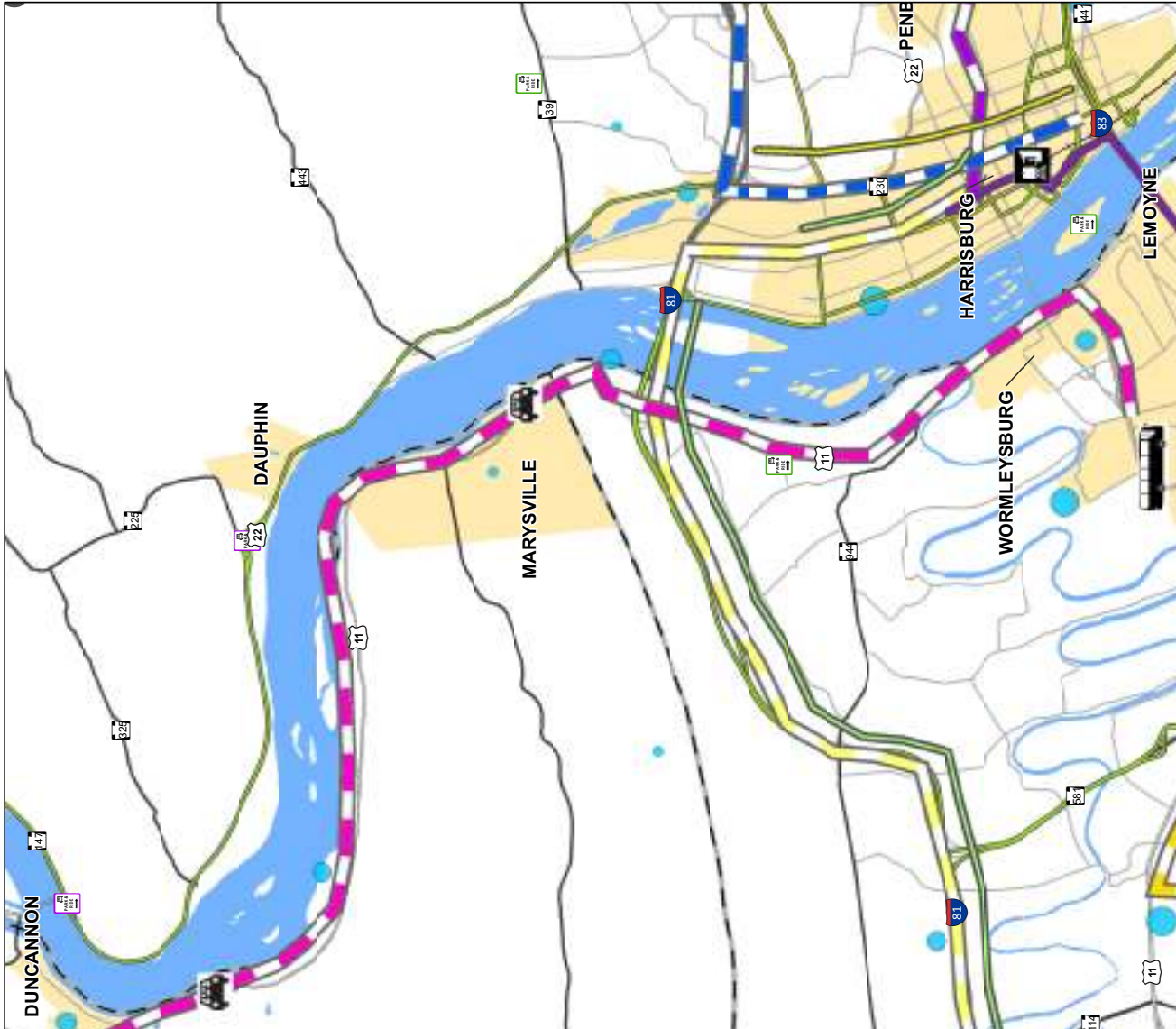
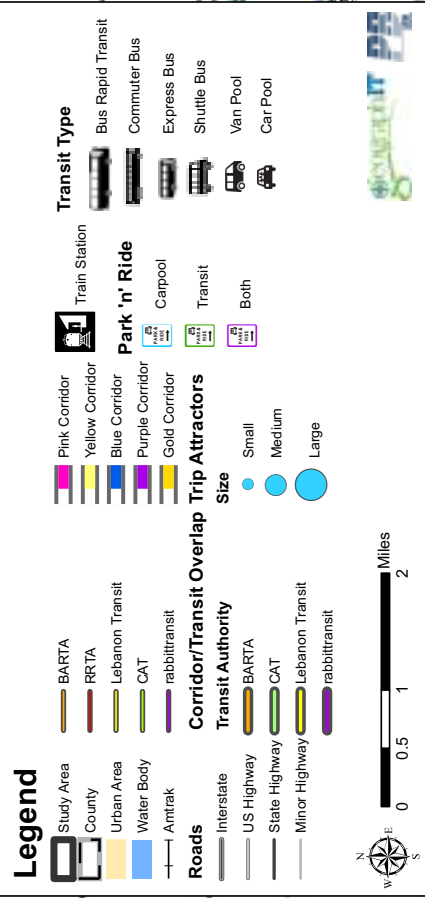




Regional Transit Coordination Study

Pink Study Corridor with Trip Attractors

PINK CORRIDOR	
Service Mode: Carpool	
Serving: Cumberland Perry	
Primary Route: US-11/15	
Key Locations Served: Duncannon Marysville Camp Hill	
Approx. Distance: Aerial Road Limited Access Road	18 miles 1 mile
TOTAL Distance	19 miles
Population Served: Within 1/2 mile	6,000
	31,000
Employment Served: Within 1/2 mile	5,000
	23,000
Connecting Services: CAT Route B.C.M	
Additional Analysis	
Trip Potential: Low	(est. < 100 daily trips)
Bi-Directional: NO	
Implementation Priority: Long Term	
Implementation Strategy: 1) Continue monitoring/expanding park and rides 2) Potential shuttle to CAT Route 23	
Key Findings: Provide park-and-ride at US-322/US-15	



PURPLE CORRIDOR

PURPLE CORRIDOR

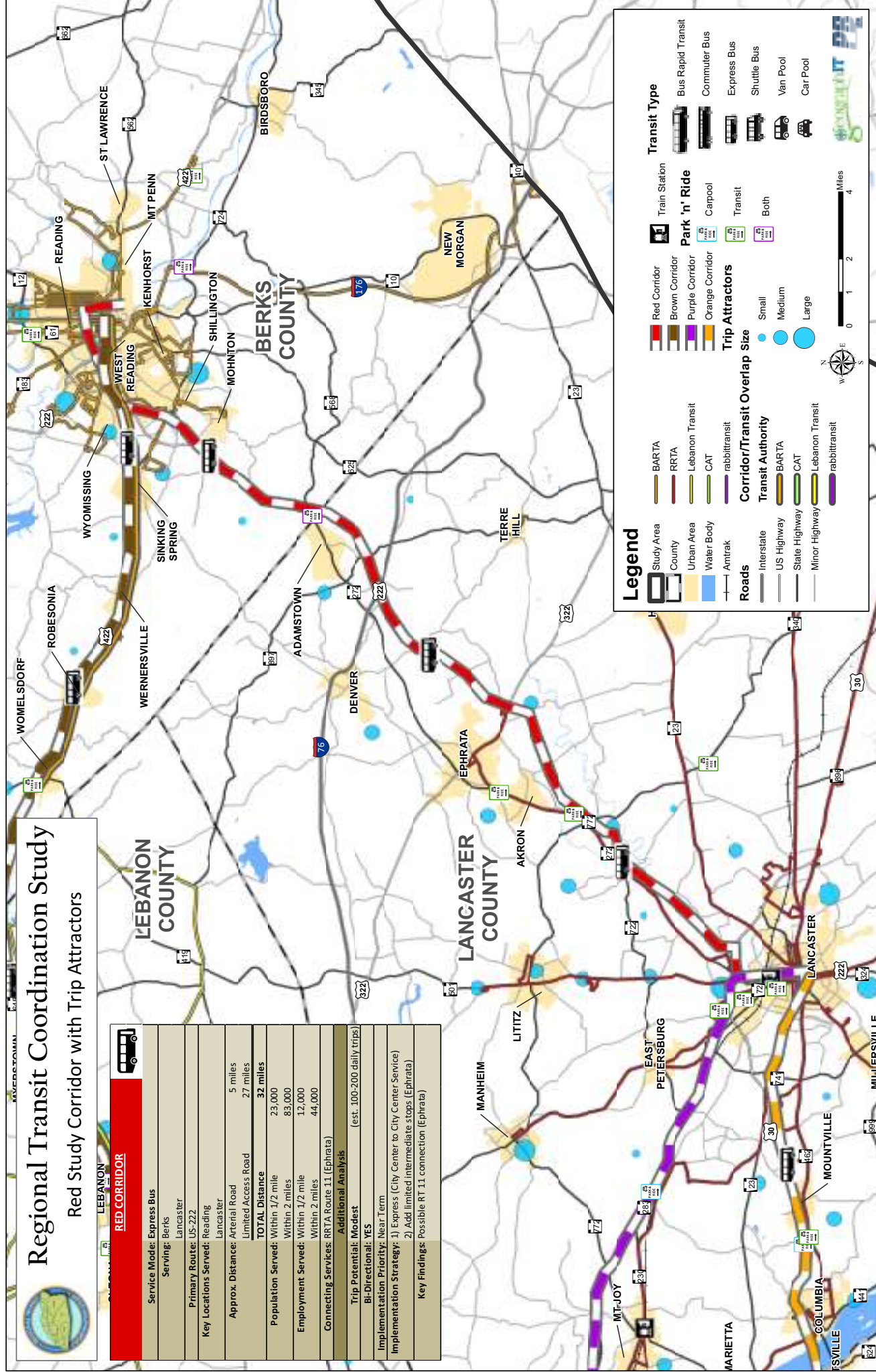


Regional Transit Coordination Study

Red Study Corridor with Trip Attractors



RED CORRIDOR	
Service Mode: Express Bus	
Serving: Berks	
Primary Route: US-222	
Key Locations Served: Reading	
	Lancaster
Approx. Distance: Arterial Road	5 miles
	Limited Access Road
	27 miles
TOTAL Distance	32 miles
Population Served: Within 1/2 mile	23,000
	Within 2 miles
Employment Served: Within 1/2 mile	83,000
	Within 2 miles
	44,000
Connecting Services: RRTA Route 11 (Ephrata)	
Additional Analysis	
Trip Potential: Modest	(est. 100-200 daily trips)
Bi-Directional: YES	
Implementation Priority: Near Term	
Implementation Strategy: 1) Express (City Center to City Center Service)	
	2) Add limited intermediate stops (Ephrata)
Key Findings: Possible RT 11 connection (Ephrata)	





Regional Transit Coordination Study

Yellow Study Corridor with Trip Attractors

YELLOW CORRIDOR	
Service Mode: Commuter Bus	
Serving: Franklin Cumberland (Dauphin)	
Primary Route: I-81	
Key Locations Served: I-81 Park-and-Rides	
Approx. Distance: Arterial Road	3 (5) miles
United Access Road	31 (52) miles
TOTAL Distance	34 miles
Population Served: Within 1/2 mile	13,000
Within 2 miles	58,000
Employment Served: Within 1/2 mile	7,000
Within 2 miles	30,000
Connecting Services: CAT Route 81 (Shippensburg), Route C (Carlisle)	
Additional Analysis	
Trip Potential: Modest	(est. 100-200 daily trips)
Bi-Directional: NO	
Implementation Priority: Long Term	
Implementation Strategy: 1) Initiate Chambersburg Shuttle to Carlisle 2) Extend CAT Route 81 to Chambersburg	
Key Findings: Long route may serve two markets Significant deadhead issues on full route (52 miles)	

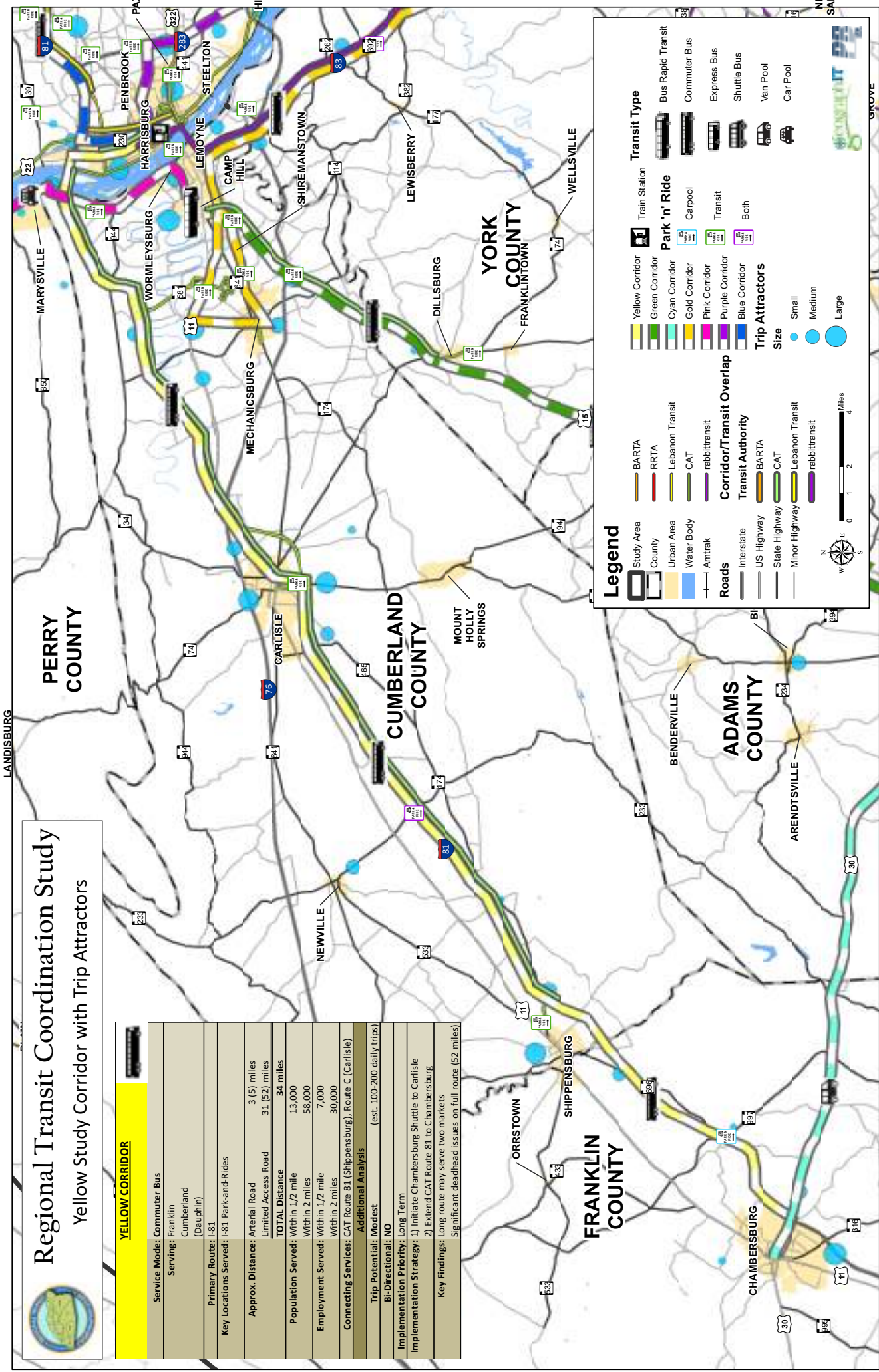


Exhibit C-1

Transit Agency Interview Summaries

Date: 3/11/2011

Agency: Red Rose Transit

Participants: Dave Kilmer

MEETING NOTES

Issues for Coordination:

- Cost recovery threshold – should such service be operating cost neutral?
 - Service cannot be seen as a subsidy drain
- Need to involve private carriers where appropriate as well as coordinate with PennDOT

Past coordinated service examples:

- Service into Chester County (coordinated with SEPTA)
- Service in Columbia, PA (coordinated with rabbitransit)
- Service to Park City Mall (Lebanon Transit)

Corridor specific comments:

Purple Corridor

- Potential issue with running parallel to Keystone Corridor
- Support of this service would require park and ride lot construction along PA 283 – informal park and rides occurring now
 - A feeder/fare coordination approach to existing Amtrak service a potential option
- Would want PennDOT concurrence

Red/Orange Corridor

- In these cases the York, Lancaster, and Reading CBD may not be a strong enough destination
- There are less incentives (lower job density, parking costs, etc.) to entice ridership to these services

Other thoughts:

- Harrisburg CBD-based service would be a priority
- The traditional Transit Development Plan process doesn't capture cross-county routes development nor design. It isn't readily known (would require a survey exercise) if out of county travel patterns from Lancaster to Dauphin County would lend themselves to these or other potential corridors

Date: 3/11/2011

Agency: Lebanon Transit

Participants: Teri Giurintano

MEETING NOTES

Issues for Coordination:

- Relationships with other transit operators has made development of informal cross-county service relatively straight forward
- Service initiatives came from a Business Plan versus a Transit Development Plan (survey tested demand of out-of-county service)
- Running “closed door” service, the currently typical example, is relatively easy to arrange. Revenue sharing would require more formalized agreements
- Technology is key – working with a fare sharing, common payment media, is key from the passengers perspective
- Allocating cost/revenue for operations not as simple as providing for the capital needs. Vehicle arrangements less straight-forward

Current coordinated service examples:

- US422 and I-81 Commuter Service into Harrisburg CBD
- Limited Saturday Service to Park City Mall (Red Rose Transit)

Corridor specific comments:

Brown Corridor

- Service type for Lebanon Transit (community) on US 422 different from BARTA (commuter)
- Service likely to only be successful as a commuter service

Blue Corridor

- Open to the idea of route expansion – expanded service would be welcomed
- Current Lebanon Transit I-81 Park and Ride, would be willing to share utilization

Other thoughts:

- Maintain excellent relationship with private providers (in case they’d want to assume service) – and do not compete with them
- Formalized agreements offer certainty, but can also be constraining for trying new service ideas

Date: 3/11/2011

Agency: rabbittransit

Participants: Rich Farr

MEETING NOTES

Issues for Coordination:

- Listening to the customer is the first priority
- Unified fare mechanism is important
- Informal agreements are good initially but more formal agreements necessary with higher levels of coordination
- Reverse commute patterns could complicate shared use of vehicles
- A plan/mechanism for maintaining performance requirements is necessary – how to hold accountable timeliness, customer service, etc. across systems
- Need a standard of technology sharing
- Need regional prioritization

Current coordinated service examples:

- I-83 service north to Harrisburg CBD and south to Hunt Valley/Towson, MD

Corridor specific comments:

Cyan Corridor

- Doesn't seem that the distance (great) or traffic congestion (minimal) between Hanover-Gettysburg would support transit operations [note - this corridor designated a vanpool]

Orange Corridor

- York-Lancaster service seems good for enhancement
- A concern would be the scattered employment sites along the route – not conducive to point to point service

Other thoughts:

- Hanover as a secondary hub has potential. Possible service to Maryland or service to Harrisburg via Gettysburg and the US 15 corridor

Date: 3/16/2011

Agency: Capital Area Transit (CAT)

Participants: Jim Hoffer
Bill Parkin
Bill Jones

MEETING NOTES

Issues for Coordination:

- Balancing perspectives – urban centers vs. localized municipalities
- Need funding partners to understand benefits in their terms
- Change to incorporation charter needed to directly serve areas beyond existing counties
- Difficulty in getting agreement on local (out of county) share for service cost
 - Especially true if another service provider doesn't exist in the adjoining county
 - Also true for vehicle costs, which were already purchased with local funding (i.e. how to recover depreciation costs, etc.?)
- Capital funding and contractual issue may also present a challenge
- Small scale route extensions more politically feasible than serving long-distances into adjoining counties
- Private operators – the role of inter-city service to be considered
- Need a common identification for shared services (color, logo, etc.)
- What is the impact of reverse commute, can shared vehicles on one route be used on an entirely different route?

Past service examples:

- Service to Dillsburg, York County
- Service to Marysville, Perry County (discontinued)

Corridor specific comments:

Purple Corridor

- Noted some service gaps exist around this corridor
- Wouldn't want to completely duplicate the Keystone Service
 - A feeder/fare coordination approach to existing Amtrak service a potential option
- Off corridor connections unlikely to be desirable – carpool service to Hershey, not timely to transfer to non-CBD destinations
- Not a high priority given existing train service

Pink Corridor

- Uncertain how this corridor mode (carpool) equates with other corridor modes (bus)

US322 corridor could show eventual potential for BRT/Transit-Oriented Development

Date: 3/30/2011

Agency: Berks Area Regional Transportation Authority

Participants: Dennis Louwerse

MEETING NOTES

Issues for Coordination:

- Need a new regional funding program so that there is no competition between local service and regional initiatives (hold local service harmless)
- Intergovernmental Agreements, while a barrier, are not insurmountable
- Branding can be approached incrementally
- Important to get demonstration grants to establish/test market for service (including vehicle leases as needed)
- Fare compatibility will be important – many agencies already coordinate with fare equipment
- Advanced coordination planning is a method to address service issues
- Receptiveness may vary by county
- May need a component of selling the idea/benefits of coordination to county commissioners/local government
- Recognize that some counties may have other regions that are also candidates for regional coordination corridors
- Toolkit approach to implementation can assure that this is a replicable process

Corridor specific comments:

Brown Corridor

- Straightforward, already have nearly adjoining services
- Buses will operate in a heavily traveled corridor (non-freeway)
- Provides additional CBD (Reading) connection for Lebanon County, mostly a bedroom community

Other thoughts:

- Need to keep communicating – especially important for transfer arrangements vs. run-through operations
- Need to demonstrate early success, then build from there

Exhibit C-2

Transit Agency Case Studies

Pittsburgh, PA	Organizational Structure	Decision-Making Authority/Political Issues	Sharing Revenue and Costs	Branding of Equipment	Fare Collection	Service Issues and Delays	Community Partnerships
Los Angeles, CA	<p>The MPO in the region, Southwest Planning Commission (SPC), has a Transit Operators Committee (TOC) which consists of representatives from each of the ten regional transit providers in Pittsburgh Region. The largest of the agencies is Port Authority of Allegheny County (PAAC).</p> <p>METROLINK Commuter Rail consists of seven commuter rail lines with an orientation primarily towards downtown Los Angeles. METROLINK was established in 1992 as a united effort, made possible by the Los Angeles County Metropolitan Transportation Authority (Metro), the Orange County Transportation Authority, the Riverside County Transportation Commission, the San Bernardino Associated Governments and the Ventura County Transportation Commission.⁴</p>	<p>The Transit Operators Committee's primary purpose is to recommend the annual allocation of federal and state funding for transit operations and capital assistance in the region; draft the transit portion the TIP; track the use of federal transit funds on the TIP and address other common transit issues of regional interest.¹ As for operations, governance and fare structures, each of the smaller systems is fairly independent and there is typically not a lot of interference with the individual agencies' operations.</p> <p>A Joint Powers Authority (JPA), the Southern California Regional Rail Authority (SCRRA), consisting of the five county transportation planning agencies, was formed in 1991. It was formed to develop a regional transit service to reduce the congestion on highways and improve mobility throughout the region.⁵</p>	<p>Through these Committee meetings, the agencies also coordinate information and resource sharing, including some purchasing activities. With PAAC operating approximately 90% of the service in the region, the other agencies work collaboratively to essentially follow their lead. An example in the region is Beaver County and Westmoreland County who use PAAC's West and East Busesways, respectively, via an agreement where these agencies credit PAAC for the use of these facilities.</p> <p>The agencies provide operating dollars based on a train mile basis.⁶</p>		<p>In 2009, the staff of SPC coordinated efforts of the ten sponsors of fixed-route transit services in the region to begin to establish a regional automated fare collection (Smart Card) system. In the last two years, progress that has been made so far in accomplishing the goal of a single smart card fare payment includes:</p> <ul style="list-style-type: none"> • Interagency agreements with seven of the transit providers for the provision of the 80% federal share of funding for the project by Port Authority of Allegheny County. • \$44 million contract agreement with project contractor Scheidt & Bachmann. • Final beta-testing acceptance of regional fare collection equipment. • Initiation of \$2 million branding/marketing contract for the region's Smart Card. • Initiation branding/marketing project for the region's Smart Card (March 2012).² <p>There is an EASY TRANSIT PASS agreement which allows for transfers among the 20 different transit agencies in the region.⁷ The JPA also sets rail fares with the tickets valid for travel on connecting bus, subway and light rail services within the METROLINK counties.</p>	<p>One of the regional initiatives the TOC is working on is a Regional Transit Trip Planner. In 2010 a work group was established to implement regional transit trip planning hosted by PAAC by March 2012.³</p>	

¹ http://www.spcregion.org/about_comm_toc.shtml
² http://www.spcregion.org/about_comm_toc.shtml
³ http://www.spcregion.org/trans_transop.shtml
⁴ <http://www.metroinktrains.com/about/>
⁵ <http://www.metroinktrains.com/about/>
⁶ <http://tti.tamu.edu/documents/0-5345-P1.pdf>
⁷ <http://tti.tamu.edu/documents/0-5345-P1.pdf>
⁸ <http://www.metro.net/projects/rapid/>

Organizational Structure	Decision-Making Authority/Political Issues	Sharing Revenue and Costs	Branding of Equipment	Fare Collection	Service Issues and Delays	Community Partnerships
<p>The Regional Transit Coordinating Council (RTCC) was created in 1988 to direct public transportation policy within the Detroit metro area. The council has four voting members, the Chief Executive Officer of the City of Detroit, Wayne and Oakland counties and the Chairman of the Macomb County Board of Commissioners.⁹ The three main transit providers in the region are SMART, DDOT and DTC.</p>	<p>The Regional Transit Coordinating Council (RTCC) is responsible for allocation of federal transit funds and planning for transit in Southeast Michigan (Macomb, Oakland, and Wayne Counties). Preparation of a Comprehensive Regional Transit Service Plan began in January 2008. The intent was to provide a more detailed analysis of the existing transit services in the region, recommend enhancements and to develop a recommended transit network for Southeast Michigan.¹⁰ These recommendations include ways to better coordinate the three current transit providers including an option to have an overarching transit authority.</p>	<p>Phased implementation of the regional transit organization is essential from both practical and pragmatic perspectives. DDOT, DTC and SMART are all limited by practical concerns of funding adequacy as well as geographical constraints. The services provided by these organizations cannot be replaced overnight. In some regions, organizations function well by combining regional services with local services. The recommended powers for a future regional transit organization varied from a new entity being the sole operator and funder of transit in the region to blending the skills and resources of the new organization with those of the existing providers.</p>	<p>There is consistent branding which is visible to customers. For example, the Hiawatha LRT and Northstar Commuter Rail are different modes but customers know they are part of the same transit network because of their branding. These are the types of issues the guidelines are intended to address as the region's transitway network continues to grow.¹⁴ This applies only to Metro Transit. Suburban routes retain own branding.</p>	<p>There is a common fare structure by which all regional providers adhere. For example, regardless of the service they use, seniors, youth and Medicare card holders, qualify for reduced fares during non-rush hours. People with disabilities qualify for a reduced rate at all times on all regular route service in the region. Express fares are the same anywhere within the Council's jurisdiction. A fare increase, which would apply to all providers, must be approved by the Metropolitan Council. Transfers are accepted by all providers. Fare collection systems are the same system-wide.¹⁵</p>	<p>When both SMART and DDOT upgraded their scheduling systems in 1999, both agencies purchased the same software for the purpose of coordinating schedules. However, the customization that was needed for the coordination to be effective was never completed. Both agencies informally coordinate schedules, but it would be more efficient for the process to be done directly by the scheduling software. By using the scheduling software, scheduling efficiencies could be better tuned to customers, especially in non peak hours to minimize wait times. An additional benefit of shared schedule information is that it could provide an opportunity to easily produce shared bus schedules.</p>	<p>Best Buy's Minnesota Commuter Program Best Buy campus incorporates transit-friendly design features, including: a bus shelter and transportation kiosk, building exits near bus stops, flex hours, and schedules to alleviate peak-period travel. The company offers interested new employees bus passes for their first week of employment. For employees who continue to ride the bus to work for a minimum of three days a week, the bus passes are subsidized at 100 percent of transportation cost.¹⁶</p>
<p>There are several organizations that have transit responsibilities in the Twin Cities region and often their roles overlap. These organizations include the Transportation Advisory Board (TAB) the Metropolitan Council, the Counties Transit Improvement Board (CTIB), the Minnesota Department of Transportation (Mn/DOT) and the University of Minnesota to develop the guidelines.¹¹ There has been some difficulty getting all partners to agree on the location of the transitways. A review of the governance of transit in the region by the State's Office of the Legislative Auditor found dissatisfaction because the members of the Metro Council are appointed and not elected. It was recommended that the legislature restructure the governance of the MC before other aspects of transit governance can be corrected.¹²</p>	<p>Currently, the Metropolitan Council is leading an effort to develop a general set of guidelines for the development of corridors where intensive transit investments are planned as identified in the 2030 RTP. The Council is working with partners in local government, Metro Transit and other transit providers, the Transportation Advisory Board (TAB), the Counties Transit Improvement Board (CTIB), the Minnesota Department of Transportation (Mn/DOT) and the University of Minnesota to develop the guidelines.¹¹ There has been some difficulty getting all partners to agree on the location of the transitways. A review of the governance of transit in the region by the State's Office of the Legislative Auditor found dissatisfaction because the members of the Metro Council are appointed and not elected. It was recommended that the legislature restructure the governance of the MC before other aspects of transit governance can be corrected.¹²</p>	<p>Like transit agencies in most metropolitan areas, Metro Transit relies heavily on state and federal money to finance its operations and capital programs. Regional guidelines suggest that a third of Metro Transit's operating budget be generated from customers. In 2010, Metro Transit expects to collect roughly 31.1 percent of its budget from fares, 47.7 percent from state appropriations and motor vehicle sales, and the remainder is from federal, county and self-generating sources. As real estate values decline, tax revenues from this source are not growing.¹³ The smaller cities in the region rely on the Met Council for local match and this creates some animosity among those areas that contribute.</p>	<p>There is consistent branding which is visible to customers. For example, the Hiawatha LRT and Northstar Commuter Rail are different modes but customers know they are part of the same transit network because of their branding. These are the types of issues the guidelines are intended to address as the region's transitway network continues to grow.¹⁴ This applies only to Metro Transit. Suburban routes retain own branding.</p>	<p>There is a common fare structure by which all regional providers adhere. For example, regardless of the service they use, seniors, youth and Medicare card holders, qualify for reduced fares during non-rush hours. People with disabilities qualify for a reduced rate at all times on all regular route service in the region. Express fares are the same anywhere within the Council's jurisdiction. A fare increase, which would apply to all providers, must be approved by the Metropolitan Council. Transfers are accepted by all providers. Fare collection systems are the same system-wide.¹⁵</p>	<p>When both SMART and DDOT upgraded their scheduling systems in 1999, both agencies purchased the same software for the purpose of coordinating schedules. However, the customization that was needed for the coordination to be effective was never completed. Both agencies informally coordinate schedules, but it would be more efficient for the process to be done directly by the scheduling software. By using the scheduling software, scheduling efficiencies could be better tuned to customers, especially in non peak hours to minimize wait times. An additional benefit of shared schedule information is that it could provide an opportunity to easily produce shared bus schedules.</p>	<p>Best Buy's Minnesota Commuter Program Best Buy campus incorporates transit-friendly design features, including: a bus shelter and transportation kiosk, building exits near bus stops, flex hours, and schedules to alleviate peak-period travel. The company offers interested new employees bus passes for their first week of employment. For employees who continue to ride the bus to work for a minimum of three days a week, the bus passes are subsidized at 100 percent of transportation cost.¹⁶</p>

⁹ <http://house.michigan.gov/hfr/pdfs/transportation%20DARTAC%20update.pdf>

¹⁰ http://www.semcog.org/uploadedFiles/Programs_and_Projects/Transportation/CRTIS%20Regional%20Transit%20Plan%20FINAL%20REPORT%20Nov%2021%2008.pdf

¹¹ <http://www.metrocouncil.org/planning/transportation/transitways/index.htm>

¹² <http://www.auditor.leg.state.mn.us/PED/pedrsp/transsum.pdf>

¹³ <http://www.metrotransit.org/about-metro-transit.aspx>

¹⁴ <http://www.metrocouncil.org/planning/transportation/transitways/TransitwayFAQ.htm>

¹⁵ <http://www.metrocouncil.org/planning/transportation/transitways/TransitwayFAQ.htm>

Organizational Structure	Decision-Making Authority/Political Issues	Sharing Revenue and Costs	Branding of Equipment	Fare Collection	Service Issues and Delays	Community Partnerships
Atlanta, GA	There are six different bus route operators in the region as well as regional rail service. The largest of these is MARTA, who along with the Atlanta Regional Commission and the Georgia Regional Transportation Authority, began a regional partnership to create the Transit Planning Board (TPB).	In 2004, the Regional Transit Institutional Analysis, which was a partnership of local governments, state agencies and current transit providers, came together to address regional transit issues. The result of this established first a Transit Planning Board followed by a Transit Implementation Board which began to establish a long-range transit vision for the Atlanta region called Concept 3. Building upon work started by the TPB, in January 2010, a Regional Transit Committee was established to focus on issues of the regional transit system's planning, funding and governance. ¹⁷	Sales taxes in the region help to support transit service, with critical corridors identified in each region to receive this funding. RTPA reports to MAG and is an umbrella agency for Valley Metro. RTPA funds regionally significant routes and assigns different carriers to an operator. They also serve to connect the routes via the TIP at the regional level. Proposition 400, a half-cent sales tax that helps fund projects in the Regional Transportation Plan (RTP) was passed by voters in November 2004. Approximately 1/3 of the tax is devoted to mass transit. ²²	MARTA became the first transit system in North America to convert entirely to a "smart card" fare collection system in 2007. The Breeze card uses smart card technology, which enables customers to store a variety of fare products on one card, offers easy tap-and-go entry and exiting and allows for the creation of a regional fare collection system with other transit providers. Cobb Community Transit (CCT), Gwinnett County Transit (GCT) and the Georgia Regional Transportation Authority regional express bus system (Xpress) will all utilize the same Breeze system. The MARTA Breeze Team is working closely with the Transit Planning Board and partners Cobb and Gwinnett Counties as well as the Georgia Regional Transportation Authority to plan and eventually implement improved fare policies for the region. ¹⁸	There is a regional trip planner on the VM website that allows customers to search by origin and destination as well as time and date of travel. The results list intercity options with fare cost.	The SmartRide program has been in operation since 1994. Daily shuttle service between two downtown company locations and the closest transit stop is available free of charge. New company hires are routinely directed to the SmartRide office to obtain information on the various commute options available to them. Prior to May 1 of each year, employees receive a notice regarding smog alerts in the region, again encouraging the use of alternative transportation to work. ¹⁹
Phoenix, AZ	Valley Metro (VM) is overseen by the Regional Public Transportation Authority (RPTA) board with members appointed from Avondale, Buckeye, Chandler, El Mirage, Gilbert, Glendale, Goodyear, Maricopa County, Mesa, Peoria, Phoenix, Scottsdale, Surprise, Tempe, Tolleson and Wickenburg. The governing board is comprised of elected officials from local governments including mayors, council members and a Maricopa county supervisor. ²⁰	By adopting the Strategic Plan Resolution 2007-04 in 2007, the board provided the executive director, staff, member agency representatives, business, media and the public with knowledge of the Board's intent to create a single regional transit agency for all modes of transit. The Regional Phoenix Transit Authority, (Valley Metro) partners with Pima County and the Arizona Department of Transportation to provide service between Apo and Phoenix. Valley Metro, Valley Rail and Tempe Transit also are a part of the coordination initiative. ²¹ Despite the unified approach to the passenger, the system remains fragmented with the Maricopa Area Governments (MAG) MPO working to bring the transit operators together informally for decision making, but each city continues to offer its own local and/or regional service. They are a powerful MPO.	The Valley Metro brand is comprised of local arterial services, certain express bus routes and dial-a-ride services. However, different branding is in place for different services. For example, light rail is branded with the METRO brand and logo and local circulators in Tempe, Glendale, Phoenix and Mesa have their own branded services. In a recent BRT study, VM has responded to branding considerations to brand that service with the name LINK which would evoke a rail-like transit system service for buses. ²³	There is a unified fare structure and the service appears seamless to the users. The Valley Metro participating agencies offer a fully integrated fare program. Tokens, tickets, or monthly flash passes can be purchased by patrons for presentation on any transit vehicle in the region. ²⁴		

¹⁶ http://www.ctaa.org/webmodules/webarticles/articles/Profiles/Profiles_Employer_Supported_Transportation_Programs.pdf

¹⁷ <http://www.atlantaregional.com/transportation/studies/regional-transit-institutional-analysis>

¹⁸ http://www.breeze-card.com/htm/regional_partners.html

¹⁹ http://www.ctaa.org/webmodules/webarticles/articles/Profiles/Profiles_Employer_Supported_Transportation_Programs.pdf

²⁰ http://www.valleymetro.org/valleymetro/regional_transportation_plan/

²¹ <http://tti.tamu.edu/documents/0-5345-11.pdf>

²² http://www.valleymetro.org/valleymetro/regional_transportation_plan/

²³ http://www.valleymetro.org/images/uploads/projects/Final_Comprehensive_BRT_Report.pdf

²⁴ http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rrd_57.pdf

Organizational Structure	Decision-Making Authority/Political Issues	Sharing Revenue and Costs	Branding of Equipment	Fare Collection	Service Issues and Delays	Community Partnerships
Chicago's suburban bus systems, IL	The RTA oversees local transportation operators in the six-county Chicago metropolitan area. These agencies include CTA, Metra (the suburban rail system), and Pace (the suburban bus system).	Recently the Regional Transportation Authority laid out plans to better coordinate service between its three transit agencies (Metra, Pace and CTA). This system is still in its infancy, and has to-date not made much substantial progress in terms of coordination. The proposal includes concepts that could improve customer's experience such as implementing a universal fare card, adding amenities such as Wi-Fi as well as a trip-planning system. By integrating the systems RTA could prioritize capital projects across all services on a cost-benefit analysis. ²⁵	Fare sharing is based on the number of riders or trips divided by the percentage of population residing in a particular community; the number of actual riders or trips is calculated based on headcount by driver or farebox counts. Illinois state law requires the three RTA service boards - CTA, Metra and Pace to recover collectively at least 50 percent of operating costs from farebox and other systems. The RTA provides public funding for the agencies' remaining operating expenses.		Recently, interagency signage has been put in place in four locations with maps, route diagrams and schedules. There are plans to adopt design standards for informational products at more interagency locations throughout the RTA transit system.	Sears Headquarters, located in suburban Chicago, has nine fixed-route buses and 30 vanpools traveling to the property daily. Pace, the suburban bus division of the Regional Transportation Authority in Chicago, in partnership with the Prairie Stone Transportation Management Association (TMA), provides the bus and vanpool services from various locations throughout the Chicago Metropolitan Area to the business park where headquarters is located. ²⁶
San Francisco, CA	The Metropolitan Transportation Commission (MTC) is the MPO for the nine-county San Francisco Bay Area, leading transportation planning, coordinating and financing efforts. The MTC oversees eight primary transit providers and 20 other local systems. ¹⁵	MTC is strong MPO that receives a large amount of federal funding. MTC works to set performance targets for each of the transit agencies and also establishes work rules to coordinate service via timed transfers and other operational details. MTC also serves as a forum for institutional arrangements and provides economy of scale benefits such as unified marketing and human resources services.	Per the requirements of SB 602, each transit agency in the region has a revenue sharing agreement with every connecting agency. In some cases, this takes the form of a reciprocal agreement to accept each other's passenger fare. The BART/Muni Fast Pass is an example of a joint fare instrument that can now be loaded onto a Clipper fare card and addresses SB 602 requirements. Each transit agency in the region is required to maintain these reciprocal agreements as a condition of receiving State Transit Assistance (STA) funds. ²⁷	The Clipper card, formerly the TransLink, is the new transit card which allows for a convenient way for riders to manage their fares and transfers in the Bay Area. This system is seen as a pioneer for fare collection in the US. A 25-cent discount is available when transferring from BART to Muni when the Clipper Card is used to purchase BART fare. There are several Muni fare products available to load to a Clipper or TransLink card as well as fare products of other Bay Area agencies including BART, AC Transit, SamTrans, Golden Gate Transit and Ferry, Caltrain and, soon, VTA. ²⁸	In order to improve the transit customer experience when transferring between operators, the Transit Coordination Implementation Plan (Res. 3866) was adopted in 2010. This documents coordination requirements for Bay Area transit. It requires efforts such as improvements to designated regional transit hubs, including way-finding signage and transit information, real time transit information, schedule coordination, last-mile services and hub amenities, and system wide connectivity improvements, including 511 information and TransLink. It is expected that transit operators and MTC would be able post and disseminate connecting transit information for free within their facilities. ²⁹	Apple connects to regional transit providers Caltrain, ACE train and VTA light rail with 16 passenger shuttles, further extending the region's transit network. In 2007, the company implemented a shuttle service for its employees to transport workers between strategic points in the Bay Area and the Cupertino, CA campus. The shuttle service includes 12 stops in the city of San Francisco and 14 additional stops at points around the Bay Area including: Santa Cruz, Berkeley, Oakland, Pleasanton, Fremont and Gilroy. ³⁰

²⁵ <http://www.mtsstransitmag.com/news/10243991/ta-aims-to-put-metra-pace-cta-on-same-track>

²⁶ http://www.ctaa.org/webmodules/webarticles/articles/Profiles_Employer_Supported_Transportation_Programs.pdf

²⁷ http://www.mtc.ca.gov/planning/tc/p/RES-3866_approved.pdf

²⁸ <http://www.mtc.ca.gov/services/clipper/>

²⁹ http://www.mtc.ca.gov/planning/tc/p/RES-3866_approved.pdf

³⁰ http://www.ctaa.org/webmodules/webarticles/articles/Profiles_Employer_Supported_Transportation_Programs.pdf

Seattle, WA	Organizational Structure	Decision-Making Authority/Political Issues	Sharing Revenue and Costs	Branding of Equipment	Fare Collection	Service Issues and Delays	Community Partnerships
	<p>Operates as a single agency, Sound Transit - the Central Puget Sound Regional Transit Authority. When it was created Sound Transit was comprised of four separate local bus systems in the Central Puget Sound area, which include Everett Transit, Community Transit, King County Metro Transit, and Pierce Transit.</p>	<p>The State of Washington established a Joint Transportation Committee as a legislative body responsible to evaluate the role of transportation in the state. A stakeholder group consisting of legislators, businesses and transit agency leadership works to establish laws and other governance-type activities.</p>	<p>One of the unique aspects of the Sound Transit plan is that it delivers a fair share of investments to each of Sound Transit's five geographic areas:</p> <ul style="list-style-type: none"> • East King County • Snohomish County • South King County • North King County • Pierce County³¹ <p>The region has been successful in passing ballot measures for regional transit to support the region's express bus, commuter rail and light rail services. The law that created Sound Transit also authorized the agency to levy and collect voter-approved local option taxes to pay for building and operating a high capacity transit system.</p>		<p>The ORCA smart card is a regional fare system involving seven transportation agencies. ORCA stands for One Regional Card for All. ORCA has replaced many of the region's transit passes. Benefits and features include:</p> <ul style="list-style-type: none"> • Riders who purchase their own monthly transit pass online or by mail likely have already been converted to an ORCA card. • Riders who purchase passes in person now receive their pass loaded on an ORCA card. • Riders who get their transit pass from their employers are being converted to ORCA as their employers' annual contracts come up for renewal.³² • A rider can either preload fare value onto the OCRA card or can purchase a pass product. The ORCA card is a plastic smart card containing a microprocessor. ORCA cards come equipped with an "e-purse" function that allows a rider to load the fare option on the card. 		

³¹ <http://developer.soundtransit.org/About-Us/Sound-Transit-District.xml>

³² <http://projects.soundtransit.org/x1854.xml?txt>

Exhibit C-3

Business and Community Partnerships

Business Community - Alternative Transportation Incentives

Employers throughout the United States have been partnering with transportation providers to encourage employees to use alternate means of transportation to work. There are several ways that employers have been promoting the use of existing transportation services including

- Covering the cost of transit passes/Providing pre-tax transit benefits,
- Providing information on the available options of transit,
- Offering shuttle service to nearby transit connections

The list below highlights several companies and what they are currently doing to address the transit needs of their employees.

San Francisco Bay Area

Apple Commute Alternatives Program - Apple connects to regional transit providers: Caltrain, ACE train and VTA light rail with 16 passenger shuttles, further extending the regions transit network.

Barnes Jewish and St Louis Children's Hospital – Transit Tax Benefit Program (St. Louis, MO)

There is a shuttle system that connects local transit station to the hospital campus. There are six different routes that travel to the mail campus which includes a transit hub.

Best Buy's Minnesota Commuter Program

Company headquarters are located in the southwest quadrant of the Twin Cities of Minneapolis-St. Paul. The Best Buy campus incorporates transit-friendly design features, including:, a bus shelter and transportation kiosk, building exits near bus stops, flex hours and schedules to alleviate peak-period travel, and preferential parking for carpools. The company offers interested new employees bus passes for their first week of employment. For employees who continue to ride the bus to work for a minimum of three days a week, the bus passes are subsidized at 100 percent of transportation cost.

Bluegrass Industrial Park Transportation Options

A new express bus route was established to the Industrial park through a partnership between the Bluegrass Industrial Park employers, Kentuckiana Regional Planning and Development Agency and the Transit Authority of River City. This eliminated the number of bus transfers and provided new opportunities for commuters to access the industrial park.

Commuter Programs for Tyson Foods and Beaumont Refineries (Central, Beaumont/Port Arthur, TX)

The Brazos transit district is partnering with Tyson Foods and refineries in the Beaumont/Port Arthur area, union representative and a bus company to transport workers to jobs they might otherwise not be able to access by providing affordable transportation along the interstate. The funding for this is provided by a combination of fare box revenues and subsidies from the major employers involved.

Charlotte Area Hotel Association

The Employment Transportation Coordinator (ETC) program allows eligible hotels to purchase and provide bus passes to their employees at a 25 percent discount.

Duke Energy's Transit Subsidy Program (Charlotte,NC)

To minimize the impact of the need to drive to work some days, the company offered two free parking passes each month in addition to the transit subsidy which would cover 100% of the monthly bus passes, light rail passes or van pools.

Chevron's Commuter Benefits Program (San Ramon, CA)

The company offers shuttle bus service between its San Ramon facility and BART stations in Dublin and Walnut Creek, California.

Cincinnati Children's Hospital Medical Center - Smart Commuter

The hospital operates a shuttle system that travels between campuses, to off site parking and into downtown Cincinnati, connecting with a major public transportation hub. Employees are encouraged to purchase their transit passes via the internet at the respective sites of the partners.

Georgia Power – SmartRide

The SmartRide program has been in operation since 1994. Daily shuttle service between two downtown company locations and the closest transit stop is available free of charge. New company hires are routinely directed to the SmartRide office to obtain information on the various commute options available to them. Prior to May 1 of each year, employees receive a notice regarding smog alerts in the region, again encouraging the use of alternative transportation to work.

Humana, Inc. (Louisville, KY)

A partnership between Humana and the Louisville Kentucky's Transit Authority enable Humana to launch a program which allowed associates to ride city buses and trolleys at any time and place at no cost to them by showing their company id card. This is funded by Humana which pays TARC an upfront premium for the service. The program is promoted through various internal communications including daily Intranet newsletters, plasma screen message boards.

Lockheed Martin Corporation (Bethesda, MD)

There are shuttle services available to employees in the suburbs.

Merck and Company, Inc (Boston, MA and Rahway, NJ)

In Boston, employees who commute to work by subway or city bus get a subsidy which is funded by onsite garage parking fees.

There is subsidy offered to employees who use New Jersey Transit. There is also free shuttle services to and from the Rahway train station during the peak community hours provided by company security services.

Microsoft Corporation Transportation Benefits and Connector Program

Microsoft implemented the Connector program in September 2007. Currently, 48 Connector buses provide transportation to and from work for over 3,000 riders each day. The coaches are equipped with Wi-Fi and power outlets. Another transportation option available to employees is a free ORCA (One Regional Card for All) card. The cards, purchased from King County Metro, provide unlimited rides on 7 regional transit agencies at no cost to the cardholder.

Nike (Beaverton, OR)

Incentives to use public transportation include TriMet passes for \$25 a year and a shuttle service that connects the World Headquarters with nearby leased buildings and the nearest light rail station.

REI Transit Subsidy Program (Kent, WA)

Employees who commute to work via public transit (bus, train, ferry and vanpool) are covered 100%. A VanShare program allows participants to connect to one of three vans from the regional train station which has pick up and drop off times staggered throughout the day allowing for flexible work hours.

Rejuvenation - Re-Cycle (Portland, OR and Seattle, WA)

The location of the office is easily accessed by public transportation and provides an annual bus pass free of charge.

Sears - Prairie Stone Business Park Commuter Program

Sears Headquarters, located in suburban Chicago, has nine fixed-route buses and 30 vanpools traveling to the property daily. Pace, the suburban bus division of the Regional Transportation Authority in Chicago, in partnership with the Prairie Stone Transportation Management Association (TMA), provides the bus and vanpool services from various locations throughout the Chicago Metropolitan Area to the business park where headquarters is located. In addition, Sears partners with WageWorks and Pace to manage and monitor the company's participation in the federal Qualified Transportation Fringe Benefit program. Costs are deducted from payroll on a pre-tax basis.

Texas Instruments (Dallas, Ft. Worth)

TI provides free shuttles between the LBJ/Central Expressway and Paker Rd DART stations and the TI campuses.

Walgreens Distribution Center (Windsor, CT)

Walgreens partnered with area transportation planners in CT to ensure that local mass transit providers are aware of shift time and other related travel information that impact employee commuting needs.

Yahoo Commute Alternative Program (Sunnyvale, CA)

A shuttle service to nearby transit hubs and subsidized vanpools is provided as well as free rides on Santa Clara County, CA local transit agency vehicles. A 25% discount is offered on other transit and vanpools. Commuter tax benefits are also available through the Federal Qualified Transportation Benefit program. There are also company events designed to connect employees with local transit agencies.

Source: Transportation to Work: A Toolkit for the Business Community "Profiles of Employer-Sponsored Transportation Programs" March 2011.

<http://www.ctaa.org/webmodules/webarticles/articlefiles/Profiles_Employer_Supported_Transportation_Programs.pdf>



Transit Roundtable 2: Community Partnerships

Bus service to regional employers/destinations
Picture of airport



Shuttle services



Train Shuttle



Park and ride lots



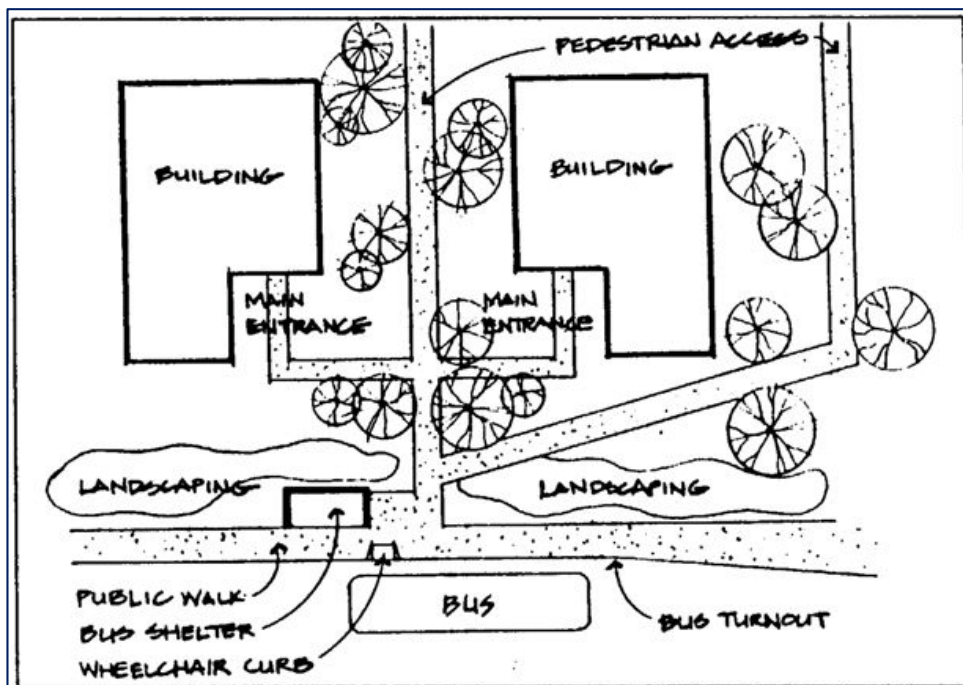


Transit Roundtable 2: Community Partnerships

Premium Parking for Carpools, Vanpools



*Design for transit
Site plan*



*Other ideas
Employer subsidized bus passes
Service planning input*

Exhibit D-1

Additional Operating Assumptions

<u>ASSUMPTIONS:</u>		
<i>BARTA Origin Location</i>	8th & Cherry St. - Reading	
<i>LT Origin Location</i>	7th & Willow - Lebanon	
Annualization (operating weekdays per year):		255
New Service - Target Farebox Recovery		25%
<i>BARTA Route 14 Farebox Recovery</i>		35%
<i>SPEEDS (mph):</i>		
Avg. Auto		38
Bus Urban Transition (all stops)		15.5
Bus Rural Running (all stops)		22
Express Running Urban (limited stops)		17
Express Running Rural (limited stops)		33
<i>COSTS/OPERATING DATA:</i>		
Operating Cost per Service Hour (BARTA)	\$	78.00
Operating Cost per Service Hour (LT)	\$	72.00
Total Route 14 Annual Service Hours		13547
Daily Route 14 WEEKDAY Service Hours		47.5
Total Route 14 Annual WEEKDAY Service Hours		12113
Average Fare	\$	1.53
Average Daily Ridership		860
<u>Annual WEEKDAY Cost</u>	\$	944,775
Est. Annual Revenue	\$	335,529
Est. Subsidy Required	\$	609,246
Estimated Transit Vehicle Cost		
30' Conventional Bus	\$	300,000
40' Conventional Bus	\$	350,000
Over the Road Coach	\$	450,000