

ARLINGTON COUNTY COMMUTER SERVICES

PROGRAM RESEARCH AND EVALUATION PLAN

06 - 08



This plan outlines a comprehensive research program to assess the success of travel assistance services offered by Arlington County Commuter Services (ACCS) to residents, employees, and visitors and to identify service improvements that enhance the effectiveness of Arlington's transportation system.



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Executive Summary

Background

This plan outlines a research and evaluation process to collect and analyze data to assess the performance of Arlington County Commuter Services (ACCS) and to enhance ACCS' effectiveness in providing travel assistance services in Arlington County. The plan establishes a series of performance indicators related to objectives and expectations established for ACCS, defines data needed to assess progress in the indicators, recommends data collection and analysis tools, presents a schedule for implementation of the research and evaluation activities, and suggests protocols to report results periodically..

The objective of the research and evaluation process is to provide timely, useful, and meaningful information on ACCS' performance and impact to County decision-makers, program funders, ACCS staff, and local and regional transportation program partners, to assist them in future transportation planning and decision-making. This includes information on service participation and satisfaction, as well as the outcomes of the services and their impacts on travel behavior.

ACCS has indicated its desire for the research and evaluation process to provide information to serve three broad purposes:

- 1 Document the results of the ACCS program
- 2 Explore and enhance customer service and satisfaction.
- 3 Identify and pilot test new service opportunities

The intent of the process is to support and guide future decision-making about funding priorities to ensure resources are allocated to services and functions that will produce the highest level of benefits to Arlington County, reinforce existing clients' participation and attract new clients, and ensure that ACCS continues to respond to market demand with desirable program enhancements.

ACCS currently collects data on many aspects of service delivery, tracks usage of its services, conducts research on various ACCS services, and participates in various local and regional evaluations performed by the Metropolitan Washington Council of Governments, the Washington Metropolitan Area Transit Authority, the Virginia Department of Transportation, and the Virginia Department of Rail and Public Transportation. But ACCS believes additional information is needed about the effectiveness of its services to support more efficient and effective program operation.

This plan outlines a process to assess performance of six categories of ACCS services:

- 1) Sales – Arlington Transportation Partners (ATP)
- 2) Retail Commuter Information and Support
- 3) ACCS Marketing
- 4) Operations and Support
- 5) Special Initiatives
- 6) Planning and Research

These programs are targeted to individual audiences but are designed to present a unified environment in which all parts work together to facilitate travelers' choice of non-Single Occupant Vehicle (SOV) modes for travel to and within the County. Some of the services can be evaluated independently of the others, but most are inter-related, with the combination of multiple services needed to realize their full potential.

The plan also takes into account the influences of the Urban Villages development policy and the extensive transit, HOV, and bicycle-pedestrian infrastructure that exists in Arlington County. ACCS believes this policy and infrastructure contribute to Arlington’s high non-SOV mode split, but it is important to explore how they support use of non-SOV modes and, as much as possible, quantify the separate contributions of the policy, transportation infrastructure, and ACCS’ services toward High Occupancy Vehicle (HOV) use. In essence, does the ACCS “software” make the Transit Oriented Development policy and infrastructure “hardware” more successful?

Process of Plan Development

The plan was developed with substantial involvement of ACCS staff and input from documents, data, and reports provided by ACCS staff and other County staff. Additionally, documents available through other published sources (e.g., websites and other resources) also were reviewed to identify previous research performed by or for ACCS and current efforts by ACCS to track or assess program performance.

To ensure that the research outlined in the plan will collect information useful for future decision-making, the consultants interviewed all ACCS staff to learn more about program functions, objectives, and operations. The consultants also interviewed key County staff responsible for programs that involve, rely on, or intersect with transportation services and infrastructure. The policy-maker/stakeholder interviews addressed issues related to transportation strategic focus and objectives, transportation performance and accountability, and perceptions and expectations of ACCS.

Organization of the Plan

The plan includes seven sections:

- Section 1 Introduction
- Section 2 ACCS profile
- Section 3 Overview of customer-centric approach
- Section 4 Performance indicators
- Section 5 Approach for assessing performance and impacts and evaluating new service ideas
- Section 6 Data collection needs, sources, and tools
- Section 7 Performance reporting

Section 1 - Introduction – The first section of the plan presents an overview of the research and evaluation process, the purpose and objectives of the plan, the scope of the proposed research, and the organization of the plan document.

Section 2 - ACCS Profile – The primary purpose of the plan is to establish an objective and straightforward research approach to developing and evaluating ACCS’ services. But the plan will serve a secondary function as an introduction to audiences unfamiliar with ACCS’ functions, services, roles, and contributions to the County’s transportation system and quality of life of citizens. For this reason, the plan includes an ACCS introduction section to acquaint readers with the context in which ACCS operates, the customer audiences served by ACCS, and the services offered by ACCS.

Section 3 – Overview of Customer-Centric Approach – This section presents an approach through which ACCS can deepen its understanding of its customers, leading to a more effective program. “Who are ACCS’ customers, how well are they being served, who is being missed, and what do they need?” The section details a two-tier approach to incorporating meaningful customer-centric assessment techniques. The first tier is strategic, that is, understanding how transportation and mobility are related to overall qual-

ity of life and how satisfaction with specific services and utilization of those services drive overall satisfaction with the transportation system. The second tier is tactical, defining the specific features and performance of any service that drive the overall satisfaction with that service. This section also presents a “touch points audit” process designed to highlight key points at which ACCS service staff interact with customers and on which customer satisfaction is built.

Section 4 – Performance Indicators – Section 4 presents performance indicators, quantitative and qualitative measures by which ACCS can measure its success. How well is the program doing in meeting customers and stakeholders expectations? What contribution is ACCS making to supporting efficient travel within and to Arlington County? And, equally important, are there any areas in which the program falls short of its expectations and needs additional attention?

The specific indicators recommended are presented in five categories. The first four represent steps necessary for social behavioral change. The remaining indicators relate to external impacts resulting from behavior change:

1. Awareness and attitudes
2. Participation in ACCS services
3. Satisfaction with services and repeated use
4. Travel behavior change
5. Transportation and air quality impacts

The section also describes measurement levels, such as County-wide or by customer group, and time-frames for measuring each indicator.

Section 5 – Approach for Assessing Performance – Section 5 presents conceptual approaches to assessing performance and details specific methodologies to measure quantitative and qualitative performance indicators. This section also outlines, in conceptual terms, research efforts to collect data needed to measure the indicators. Section 5 also details a new service development process based on a customer-centric approach to address ACCS’ desire to “identify new service opportunities to expand market share.” This approach brings both current and future customer into the transportation planning process to:

- 1) Document existing satisfaction with transportation services
- 2) Pinpoint unmet needs
- 3) Assess the feasibility and potential for new service ideas – concept testing
- 4) Explore different ways of packaging mobility choice in a manner that more closely aligns with how trip decisions are made beyond the conscious mind.

Section 6 – Data Collection Needs, Sources, and Tools – Section 6 recommends tools to collect performance indicator data. ACCS staff and other County staff agreed that ACCS needs better data on the reach of services, customers’ satisfaction with services used, behavior change following service use, and the impacts of behavior change on community goals. The plan concentrates on collecting these data. This section defines four basic categories of needed data, roughly parallel the performance indicator categories described above:

- Data on travel awareness, attitudes, and needs of clients and non-clients in various audience groups: residents, employees, visitors, employers, retail businesses/hotels, and property managers
- Data on customer/client participation in and use of ACCS services
- Data on customer/client satisfaction with ACCS services
- Data on actions taken by travelers after using ACCS services

This section summarizes ACCS' existing service tracking activities and proposes and defines new county-wide benchmark and follow-up surveys and customer feedback data collection activities, such as surveys of residents, employees, and business leaders, needed to collect additional data. The section also notes opportunities to utilize data collected by other organizations, such as the Metropolitan Washington Council of Governments and the Washington Metropolitan Area Transit Authority, that compile data on Arlington as part of regional evaluations, and from developers/employers and others required to develop site plans.

Section 7 – Performance Reporting and Schedule – This section outlines tools to convey information about ACCS' results to various internal and external/public audiences that could be interested in knowing of these results. The section first defines various audiences, including ACCS and Arlington County staff, funders and other regional and state organizations, and major traveler and employer customer groups. The section then proposes six categories of reporting tools that document and present data on satisfaction of customers with the services used, the behavioral change resulting from outreach or service use, and the impacts of behavior change on community-level goals such as vehicle trips and VMT reduced. These tools include:

- Service Level Reports
- Program Annual Report
- ACCS Report Card
- ACCS “Best Hits”
- State of Arlington Transportation
- ACCS “Road Show”

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Section 1 Introduction

Purpose and Overview of the Plan

This plan outlines a research and evaluation process to collect and analyze data to assess the performance of Arlington County Commuter Services (ACCS) and to enhance ACCS' effectiveness in providing travel assistance services in Arlington County. The plan establishes a series of performance indicators related to objectives and expectations established for ACCS, defines data needed to assess progress in the indicators, recommends data collection and analysis tools, presents a schedule for implementation of the research and evaluation activities, and suggests protocols to report results periodically.

The objective of the research and evaluation process is to provide timely, useful, and meaningful information on ACCS' performance and impact to County decision-makers, program funders, ACCS staff, and local and regional transportation program partners, to assist them in future transportation planning and decision-making. This includes information on service participation and satisfaction, as well as the outcomes of the services and their impacts on travel behavior.

ACCS has indicated its desire for the research and evaluation process to provide information to serve three broad purposes:

- 1 Document the results of the ACCS program – A fundamental objective of the evaluation is to assess and examine, quantitatively and/or qualitatively, the impacts the program has and to estimate the contribution the program makes to County and regional goals related to transportation. This information will be relevant to County policy makers, program funders, and others who make decisions about transportation priorities and the needs for transportation infrastructure and services to support other County functions.
- 2 Explore and enhance customer service and satisfaction – Since its inception, ACCS has had a customer focus in service selection and delivery and has striven to provide a high level of customer service. The process will support this basic ACCS principle by establishing a protocol to define critical customer needs and expectations, identify levels of customer satisfaction, and highlight services and customer service functions that ACCS should improve.
- 3 Identify and pilot test new service opportunities – Finally, ACCS wants to develop new products and services to meet additional needs of current customers and expand its market share to new customers. The research efforts of this process are designed to assist ACCS in identifying needed and desirable new services and projecting levels of participation and outcomes of those services.

The intent of the process is to support and guide future decision-making about funding priorities to ensure resources are allocated to services and functions that will produce the highest level of benefits to Arlington County, reinforce existing clients' participation and attract new clients, and ensure that ACCS continues to respond to market demand with desirable program enhancements.

ACCS currently collects data on many aspects of service delivery and tracks usage of its services. Further, ACCS and other organizations have conducted research in the past on various aspects of ACCS' services, such as transit riders' perception of transit. ACCS also participates in the regional evaluation of Transportation Emission Reduction Measures (TERMs) conducted by the Council of Governments' Commuter Connections Program. This research evaluates transportation, air quality, and energy consumption impacts of commute assistance services offered throughout the Washington Metropolitan region, including in Arlington County.

But ACCS believes additional information is needed about its services to support more efficient and effective program operation:

- Are the existing programs meeting the needs of travelers and employers?
- Are significant services missing from the program mix?
- How much are ACCS' services contributing to County and regional transportation goals?
- How much is each ACCS service component contributing to the overall impacts?
- Does ACCS deliver services cost-effectively?
- Do other commuter services and strategies offer the possibility for even greater benefits?
- What is the cost of the programs relative to benefits received?
- What is the revenue generating potential of market-based services?

This plan outlines a process to assess performance in the following ACCS services:

- Employer Services
- Residential Services
- Visitor Services
- Site Plan Requirements/Development Services
- Commuter Stores/Mobile Commuter Store
- Commuter Information Center/CommuterDirect.com Sales Support Center
- Distribution and Logistics Program
- Bus Stop Information Program
- Web Sites
- ACCS Marketing
- BIKEArlington program
- WALKArlington program
- Arlington Carsharing program
- Arlington Retail marketing program – point of purchase program
- ART and Arlington Metrobus – especially ACCS marketing thereof

These programs are targeted to individual audiences but are designed to present a unified environment in which all parts work together to facilitate travelers' choice of non-Single Occupant Vehicle (SOV) modes for travel to and within the County. Some of the services can be evaluated independently of the others, but most are inter-related, with the combination of multiple services needed to realize their full potential. For example, Employer Services is designed to encourage employees' use of commute alternatives through services offered by employers, but many other services also target employees, by providing information and assistance directly to commuters. The plan addresses the individual influences of each service, but also recommends an approach to avoid double counting benefits of overlapping programs.

The plan also takes into account the influences of the Urban Villages development policy and the extensive transit, HOV, and bicycle-pedestrian infrastructure that exists in Arlington County. ACCS believes this policy and infrastructure contribute to Arlington's high non-SOV mode split, but it is important to explore how they support use of non-SOV modes and, as much as possible, quantify the separate contributions of the policy, transportation infrastructure, and ACCS' services toward High Occupancy Vehicle (HOV) use. In essence, does the ACCS "software" make the Transit Oriented Development policy and infrastructure "hardware" more successful?

Finally, the plan acknowledges that other programs and factors outside of ACCS, such as regional advertising programs and economic conditions, also influence travel behavior and provides limited recommendations for methods to estimate non-program impacts.

Process of Plan Development

The plan was developed with substantial involvement of ACCS staff and input from documents, data, and reports provided by ACCS staff and other County staff. Additionally, documents available through other published sources (e.g., websites and other resources) also were reviewed to identify previous research performed by or for ACCS and current efforts by ACCS to track or assess program performance. These existing data and reports are summarized in Section 7 (Data Collection, Needs, and Sources) and Appendix 1 – Existing Data and Research Reports.

A major expectation of the plan is that it will collect information that will be useful for future decision-making by staff and various non-staff stakeholder audiences, including County policy-makers and program funders, among others.

Therefore, the consultants interviewed all ACCS staff to identify:

- Program functions and activities (e.g., Employer outreach, Commuter Stores, bicycle promotion activities)
- Objectives of each service/function
- ACCS' customer groups and staff's current understanding of customers' needs
- ACCS-customer touch points
- Past and present data collection and analysis efforts focused on performance assessment
- Qualitative assessment of program strengths and weaknesses
- Need and opportunities for future data collection and analysis

To develop a clearer understanding of the expectations that County policy-makers hold for ACCS, the consultants also interviewed key County staff responsible for programs that involve, rely on, or intersect with transportation services and infrastructure. These departments and organizations included: within the Department of Environmental Services the Transportation Division, including, Traffic Engineering, Transportation Planning, and Transit Services; the County Manager's Office; the County Public Affairs Office; the Arlington Economic Development Department; and the Department of Community Planning, Housing, and Development.

The policy-maker/stakeholder interviews addressed the following issues:

Arlington transportation strategic focus & objectives:

- Transportation issues and opportunities in Arlington County
- Vision of County transportation functions, objectives
- Expectations of traveling public and businesses/commercial interests and the County's success in meeting transportation needs
- Role of County's development pattern in shaping transportation priorities
- Role of transit and other "alternative" modes in overall transportation system

Transportation performance & accountability:

- Relevant measures / indicators for assessing transportation system success
- County's understanding of performance - where does the County lack data / results
- Measurement of effects of land use vs transportation policies and services
- Transportation agencies/organizations with operational or policy role – position, resources, coordination, contribution to County transportation success

Perceptions and expectations of ACCS:

- Value of ACCS programs and services to overall transportation picture
- Appropriate / desired ACCS functions and expected / desired ACCS results
- Degree of ACCS accountability – performance measurement
- ACCS role relative to transit operators
- Role of ACCS in development and business support activities
- Opportunities for ACCS to improve performance / be more responsive to customers

A summary of these interviews is presented in Appendix 2 – Stakeholder Interviews. Additionally, themes identified in the interviews are presented in appropriate sections of this plan.

Organization of the Plan

The plan includes six sections following this introduction:

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Section 3 – Overview of Customer-Centric Approach – This section presents an approach through which ACCS can deepen its understanding of its customers, leading to a more effective program. “Who are ACCS’ customers, how well are they being served, who is being missed, and what do they need?”

Section 4 – Performance Indicators – Section 4 presents performance indicators, quantitative and qualitative measures by which ACCS can measure its success. How well is the program doing in meeting customers and stakeholders expectations? What contribution is ACCS making to supporting efficient travel within and to Arlington County? And, equally important, are there any areas in which the program falls short of its expectations and needs additional attention?

Section 5 – Approach for Assessing Performance – Section 5 presents conceptual approaches to assessing performance and details specific methodologies to measure quantitative and qualitative performance indicators. This section also details a new service development process based on a customer-centric approach. This addresses ACCS’ desire to “identify new service opportunities to expand market share.”

Section 6 – Data Collection Needs, Sources, and Tools – Section 6 recommends tools to collect performance indicator data. ACCS staff and other County staff agreed that ACCS needs better data on the reach of services, customers’ satisfaction with services used, behavior change following service use, and the impacts of behavior change on community goals. The plan concentrates on collecting these data.

Section 7 – Performance Reporting and Schedule – This section recommends types of information to include in periodic reports and a proposed schedule for summarizing and reporting performance results.

Section 2 ACCS Profile

One of the characteristics of quality of life is mobility – the unrestricted freedom to go anywhere at any time. Ironically, this seemingly inalienable right is threatened in many metropolitan areas. Many Americans are finding their mobility constrained by sprawling suburban residential developments served by transportation systems that predominately support vehicular travel, with ensuing traffic congestion and lack of mobility for those without vehicles.

A notable exception is Arlington County, located across the Potomac River from the District of Columbia in the core of the Washington metropolitan region. More than 30 years ago, Arlington County leaders embarked on an alternative development path of coordinated urban planning and transportation design, investing in multi-layered, mixed-use land development combined with an inter-connected multi-modal transportation system of train and bus services, bike trails, and walking paths. Arlington planners focused high-density commercial and residential development around Metrorail stations in the Rosslyn-Ballston and Jefferson Davis Metrorail Corridors, while maintaining lower density residential neighborhoods in the rest of the County.

What resulted were Arlington's *urban villages* – walkable, mixed-use neighborhoods well-served by public transportation and pedestrian facilities. Residents and visitors in these neighborhoods can walk to shopping or restaurants and hop on Metrorail, Metrobus or Arlington Transit buses (ART) when they need to go elsewhere in the metro Washington area. Consequently, Arlington County residents, employees, and visitors spend more time enjoying the attractions of the region, and less time trying to get places. This mobility, within a region known for gridlock, makes the County an exciting destination, with the advantages of urban living, but few of the urban liabilities.

Arlington County Commuter Services (ACCS)

While County visionaries deserve tremendous credit for their foresight in creating an environment that fosters mobility, many present-day initiatives and organizations help ensure the Arlington dream is and remains a reality. One such organization is Arlington County Commuter Services (ACCS).

Building walkable, mixed-use neighborhoods well-served by public transportation in the middle of a vehicle-dependent region does not ensure success in, and of, itself. Supplying alternative travel choices does not always guarantee utilization. While a “build it and they will come” approach is almost certain to attract socially and environmentally-conscious citizens and economically-constrained users, it is not certain to nurture a sustainable community that will embrace alternatives to vehicular travel – ridesharing, walking, and biking - *as a way of life*.

To bring about a meaningful travel behavior change and encourage wide-spread utilization of non-SOV choices, residents and other travelers must first understand the options available in the multi-modal transportation system, how it works, and how to incorporate travel options into their personal trip decision-making process. For many people accustomed to a car-dependent community, this conversion requires education and often incentives – in short, a level of information and support that demystifies travel options and makes them rational and desirable alternatives to the car.

ACCS performs this important task for Arlington County. ACCS promotes mass transit, walking, biking, carpooling, vanpooling, telecommuting, and other options that reduce the demand for vehicular travel, lessen congestion and air pollution, and improve accessibility within the County. These non-SOV travel

options are part of an overall Transportation Demand Management (TDM) approach. Providing services that promote and support these options, ACCS' vision is:

“To improve the quality of life and economic sustainability of Arlington by reducing traffic congestion and improving air quality.”

As the transportation information and educational resource center, ACCS provides information and services that educate transportation system users from the basics on what services and facilities the system offers and how to use them, to individual and customized support for planning trip solutions to get from point A to point Z. ACCS also facilitates delivery of transit fare media and travel incentives, such as transit fare discounts, that are available to residents and employees from employers and other organizations.

On a “wholesale” level, ACCS works with Arlington businesses, property managers, and hotel managers who, in turn, work with their respective employees, tenants, and guests on advancing travel options. On a direct end-user, “retail” level, ACCS provides public information and education via County-wide information campaigns, commuter websites, direct mail, and at bus stops and commuter retail stores.

History of ACCS

ACCS traces its roots back to 1989 with the introduction of the Ballston Transit Store and the 1990 launch of the Ballston Area Transportation Association (BATA).

BATA's staff was responsible for operating the Ballston Transit Store as well as providing staff support to its Board and some Transportation Management Association (TMA) outreach activities. In 1990, the Arlington Department of Public Works formally instituted a “Commuter Assistance Program” (CAP), which was made responsible for coordinating and directing TDM/rideshare/transit promotional activities across the County. The CAP provided the bulk of BATA's funding through a contract to provide the transit store, outreach, and other TDM services.

Building on this modest beginning, ACCS has expanded to serve Arlington's transportation system further by advancing the development and promotion of alternative transportation choices. As the County's travel option infrastructure has grown, so, too, have ACCS' products and services and its active participation in Arlington County's transportation planning process.

Today, ACCS is part of the Department of Environmental Services, Transportation Division, Planning Bureau and provides a comprehensive framework of travel assistance services, incentives, and promotions funded primarily through state and some Federal grants and a small amount of County funding. ACCS' activities and services ease travel for the hundreds of thousands of residents, workers, and visitors who travel to, through, and within Arlington County.

ACCS's initiatives also have garnered the attention of the national transportation planning industry and have been nationally recognized for their innovative TDM programming, positioning Arlington County as a prime example of how coordinated land use planning, transportation infrastructure, and TDM programming combine to build a sustainable community.

(Note: A detailed, year-by-year history of ACCS, since 1989, can be found on ACCS' Web site at www.commuterpage.com/ACCS/caphis.htm)

ACCS' Audiences & Services Today

ACCS currently serves two distinct audiences: 1) internal and 2) external/public. Internally, ACCS staff works with Arlington County planners and agencies such as transportation groups within the Arlington County Department of Environmental Services (DES), the Department of Community Planning, Housing, and Development (CPHD), Arlington Economic Development (AED), and the Transportation Commission. In this supporting role, ACCS represents the “voice of the customer,” providing end-user insights and customer-oriented programming concepts. Externally, ACCS assists residents, employers and workers, visitors, and residents with travel to and within the County.

Audiences – ACCS' customers include numerous audiences. Arlington County residents and employees working in Arlington County are the two primary traveler audiences. Visitors, both from other parts of the Washington metropolitan region and outside the region, comprise a third traveler audience group. ACCS serves these groups directly by providing information via mail, internet, on-site events, and phone and delivering other services through the Commuter Stores and other outlets.

ACCS also provides services to “wholesaler” audiences, such as Arlington County employers, property and building managers of multi-unit housing buildings, leaders of homeowners' associations, retail business owners, and hotels and tourism service organizations. These groups serve as intermediaries between ACCS and travelers and extend ACCS' outreach beyond what ACCS can accomplish with direct contacts.

Services – ACCS services can most easily be thought of as travel mode or TDM option, such as mass transit, walking, biking, carpooling, vanpooling, telecommuting, etc., but ACCS organizes its services and activities by operational function – how it provides its services. These include:

7) Sales – Arlington Transportation Partners (ATP):

Business-to-business outreach sales and services that “wholesale” ACCS information assistance to businesses' employees, residents, and visitors

- Employer Services – commuter benefits, information, services for employees
- Residential Services – information for multifamily complex residents
- Visitor Services – information services for hotel guests and employees
- Site Plan Assistance/Development Services – assistance for developers and managers in fulfilling TDM site plan requirements

8) Retail Commuter Information and Support:

Direct information, assistance, and transit pass sales for commuters, residents, visitors

- Commuter Stores – three stationary and one mobile store for fare sales, personal help
- CommuterPage.com – family of Internet sites with interactive information and services (incl. BikeArlington.com, WalkArlington.com, Arlingtontransit.com)
- CommuterDirect.com – online fare sales for individuals and companies
- Commuter Information Center – 228-RIDE information

9) ACCS Marketing:

- Transit marketing – comprehensive marketing and promotions for ART, Arlington Metrobus, other transit and transportation options
- Bus Stop Information Program – outfitting all stops with maps, schedules

10) Operations and Support:

- CommuterDirect.com Support Center – fulfill, mail online fare sales orders
- Distribution and Logistics Program – distribute brochures to all outlets, support for bus stop information program

11) Special Initiatives:

- BIKEArlington program – promotions, information, BIKEArlington.com
- WALKArlington program – promotions, information, WALKArlington.com
- Arlington Carsharing program – support and marketing partnership with private providers Flexcar and Zipcar
- Arlington Retail marketing program – retail partnerships, sponsorships, and point of purchase transportation info

12) Planning and Research:

- TDM Site Plan Requirements – negotiation and enforcement of TDM conditions for properties
- Articulation of TDM policies and documentation of benefits

While these functions are presented as separate initiatives, they optimally work together in a seamless manner to facilitate travelers’ awareness, appreciation, and selection of non-drive alone modes for travel to and within the County.

ACCS’ Audiences and Services for The Future

Since its inception 15 years ago, ACCS has become the quintessential needs-based organization, evolving to a multimodal marketing operation focused on serving the travel needs of County residents and employees, encouraging the highest utilization of the County’s transportation infrastructure, and advancing the Urban Villages’ development policies.

Until now, many of the advances in the County’s transportation plan and overall success of the Urban Villages’ concept have been possible with little concern for outside influences or internal, County-based constraints – there was, in essence, a clean slate. Several major demographic and regional forces, however, are now ushering in a new, more complicated TDM program planning and implementation era. These include:

1. Underserved Population Needs: The County is now recognizing a need to explore needs of non-commute travel populations, such as youth, seniors, and populations such as immigrants, young professionals, “transient” populations, and students, that that have not been well-represented on the advisory boards. Are any of these groups underserved by Arlington’s multimodal system?
2. Minority Population Growth: The growth in minority population segments is creating new customer segments. More than 40% of Arlington’s residents are Hispanic/Latino, African- American, Asian or multi-racial. More than one-quarter of residents were born outside the United States. Arlington County public school children speak more than 60 different languages. Is language a barrier in understanding and identifying transportation needs and in providing relevant and meaningful transportation services?
3. Resident turnover: Arlington County has extremely high resident turnover. Every five years the County turns over 50% of its population base – 100,000 residents leave the County, and 100,000

new residents arrive. The fundamental job of providing information and education on the transportation options available and how to use them must be significant and ongoing.

4. External Impacts: The County is both a significant generator (residential and tourist travel) and attracter (workers traveling into the County for jobs) of trips. Further, the transportation infrastructure of Arlington County serves through-travelers, headed for destinations in Washington, DC, or other jurisdictions adjacent to the County. The large volume of travel within and through the County places great strains on the infrastructure, emphasizing the need for transportation services to encourage high use of non-SOV travel modes.
5. Resource Limitations: The majority of Arlington County's public land is already developed. The option to simply expand the road infrastructure as a means of expanding the capacity of the existing transportation system is off the table. The current multi-modal system must just get better – move even more people, with little new infrastructure investment.

If all of these challenges were not enough, Arlington County's own projected long-term growth could exacerbate each of these issues. The County is currently one of the most densely-populated jurisdictions in the country with a population density of about 7,700 persons per square mile – higher than Seattle, Minneapolis and Pittsburgh. Arlington now has more private office space than downtown Los Angeles, Atlanta or Seattle. And more is on the way – X million square feet of office space and Y residential units are under construction or have been approved for construction.

As the county approaches build-out and as lower density older properties are converted to higher density, parking and traffic pressures are increasing. It is essential that residents, workers, and visitors use non-SOV means of travel to ensure that the transportation system functions smoothly and that traffic and parking demand do not reduce the quality of life or dampen the economic vitality of Arlington.

It is against this backdrop that ACCS must continue its work – to educate and inform Arlington County residents, employers and workers, and visitors about their travel options, help ensure their transportation needs are being addressed, while encouraging the greatest possible utilization of non-SOV travel modes to promote sustainable communities in Arlington County.

With this research plan, ACCS is focusing more intently than ever on end users' needs and evaluating progress toward meeting those needs. Through needs assessments and innovative customer satisfaction and performance measurement research studies, ACCS will continue to represent the voice and needs of the traveler in the County's transportation system planning efforts and continue to enhance service delivery concepts to address unmet needs and support Arlington County residents mobility.

Section 3 Overview of Customer-Centric Approach

The staff and stakeholder interviews described in Section 1 demonstrated a clear consensus that Arlington County has a mandate to provide a high level of mobility and travel options for County residents and other travelers. There also is an apparent acceptance that ACCS is an important part of this mandate and that ACCS is doing a good job in its role. However, the interviews also suggested that ACCS and the Arlington County Transportation Department know less about their customers than they should know or would like to know.

Further, numerous interviewees believed that the current system could be under-serving some population segments such as Hispanics, senior citizens, the physically challenged, and high school and university/college students. The impression of interviewees was that a more thorough understanding could lead to a program that fulfilled its potential and utilized all opportunities to meet the needs of travelers in the most efficient way.

To answer this call, Arlington County transportation leaders and planners want to know:

Who is ACCS serving today and what needs are being addressed? How satisfied are customers with the current system? What audiences are underserved and what needs have not been met? What services should be expanded or created to serve those in need?

In essence, ACCS needs to answer the question “who are our customers and how well are we serving them...and who are we missing and what do they need?” This customer-centered perspective puts priority upon the needs of existing and potential end users, not the transportation services currently in place, as the central focus of transportation planning and service delivery. It is the hallmark of a customer-centric approach.

Top management buy-in, often the most challenging aspect of implementing a customer-centric approach, exists in Arlington County. The missing element is a meaningful assessment program to drive this approach and help ACCS deliver on management’s philosophical orientation.

Existing Information:

In past years, ACCS and other organizations have undertaken some significant customer-oriented research, which has provided valuable customer insights. But most of this research has focused on outputs, rather than outcomes. The 2004 and 2005 Public Perception of Transit Studies and the ATP Newsletter Study conducted in May 2001 are two examples.

The 2004 and 2005 Public Perception of Transit Studies assessed the general impressions of Metrorail and Metrobus held by residents on a variety of attributes such as “available when you need it,” “is a comfortable way to travel,” and other features. For the most part, service perception scores for Metrobus were low. In 2004, less than one-fourth of Arlington County residents agreed with the statements that Metrobus “is easy and convenient to use” (23%), “goes to places I need to go” (21%), “meets transportation needs of people like me” (19%), “is a comfortable way to travel” (18%), “is available when you need it” (17%), and “fits into my lifestyle” (14%). But these studies stop short of measuring how much these attribute ratings influenced customers’ overall satisfaction and current and future use of the services. Is ACCS doing everything possible to drive use of this service?

As a second example, the ATP Newsletter *Solutions* Study, conducted in May 2001, found that 73% who received the newsletter rated the information useful, especially information on Metrochek. More than eight in ten (85%) said they wanted to continue to receive *Solutions*. And of those who recalled receiving the newsletter (82%), more than 4 in 10 reported that brochures and inserts, posters and giveaways were valuable (rated as 4 or 5) and 69% said they have displayed the poster that is included in the newsletter. When asked whether the newsletter has ever prompted them to call ATP, 29% said yes. But the study stopped short of exploring the impact of the newsletter information on travel choice. How do we know if *Solutions* and ATP made a difference?

Customer –Centric Approach:

The research and evaluation plan details a two-tier approach to incorporating meaningful customer-centric assessment techniques:

- 1) strategic: understanding how transportation and mobility are related to overall quality of life and how satisfaction with specific services and utilization of those services drive overall satisfaction with the transportation system, and
- 2) tactical: which specific features and performance of any service drive the overall satisfaction with that service.

Strategic – From a strategic level, a comprehensive model of how transportation services and mobility (and de facto, ACCS) affect the overall quality of life of Arlington County residents must be developed. The closest the County has come to exploring links between transportation and quality of life was through its Citizen Satisfaction survey, last conducted in 2004 (Arlington County Direction Finder Survey, conducted by the ETC Institute). This survey found that the “flow of traffic on County streets” was the most important County issue; half of all respondents (49%) felt it should receive the most emphasis over the next two years – ahead of parks, police, fire and emergency services, and other County services.

The “gap” between this expectation and the County’s performance is extreme. In the same survey, resident satisfaction with “flow of traffic on County streets” came in last of thirteen variables tested (48% were satisfied whereas satisfaction of most other categories of service ranged from 53% to 89%). Further analysis of transportation services suggested similar gaps in specific service areas:

	One of top 3 choices to improve		Satisfaction (top 2 boxes)	
	<u>% agree/rank</u>		<u>% agree/rank</u>	
Availability of sidewalks	32%	1	58%	6
Ease of traveling within AC	31%	2	68%	2
Ease of traveling from city to other areas	31%	3	64%	4
Pedestrian safety in neighborhood	30%	4	60%	5
Use of traffic calming measures	27%	5	51%	8

But again, what was not measured was how transportation and these transportation issues factor into perceptions of quality of life. The scores transportation issues received showed them to be significant issues, but how significant, particularly in light of the extensive transportation options Arlington residents have compared to residents of many other Washington area jurisdictions

To explore levels of service attribute influence, the plan proposes the use of multivariate statistical modeling on future survey data, particularly data from a comprehensive County-wide transportation services survey we recommend be conducted. Multivariate analyses are sophisticated analytic techniques that allow researchers to examine data in more depth than can be obtained from basic cross-tabulations. Multivariate analyses identify relationships among multiple variables or factors. Multivariate analyses can be used to identify the primary drivers of specific attitudes, perceptions or behaviors. They can also identify “underlying” dimensions or themes in perceptions and behavior.

Using multivariate analyses, we can pinpoint the beliefs or key expectations and performance variables related to transportation that drive overall positive ratings of the transportation system. It may turn out that perception of safety is ultimately THE transportation or mobility choice driver by a factor of x. It might be something else. This type of analysis will help us identify where to focus our attention – resources, partnerships, messages, etc. It will also help us model the role and impact Arlington County’s transportation system and its associated mobility benefits have on overall quality of life ratings.

Tactical – An example of the tactical customer-centric assessment techniques can be expressed by exactly what is missing in the Public Perception of Transit Studies - “why” these beliefs are held and how they relate to overall satisfaction with Metro bus or Metrorail. This and other studies should include various satisfaction ratings – overall satisfaction with service, specific feature satisfaction ratings, intent to use more in future, and the degree someone recommends the service to a friend or family member. With these overall measures in place, rating scores on attributes and features can be cross-tabulated with high levels of satisfaction to identify the key drivers and areas of focus. This can be taken even further with the application of multivariate statistical modeling outlined in a preceding paragraph.

The same is true for the ATP Newsletter *Solutions* Study example. Outcome impact measures and assessment techniques should be incorporated, such as adding questions that measure the practice of specific TDM-related activities that respondents learned about from the newsletter. In addition, this type of study should be conducted longitudinally to ascertain the “lift” that *Solutions* and ATP have over time – showing changes in pro-TDM attitudes and supportive corporate behavior over time across all recipients. Ideally, this type of study should also have a control group of non-subscribers as an additional check on impact.

Specific Customer-Centric Plan Guiding Tenets:

The Customer-Centric elements of the plan present this two-tiered approach, incorporating meaningful strategic and tactical customer-centric assessment techniques, in a comprehensive, long-term planning perspective based on the following guiding tenets:

- Useful, yet practical focus
- Cost-effective approach
- Customer centric audit
- Identify and understand ACCS’ distinct user/non-user groups
- Identify the right variables
- Utilize common satisfaction rating score card

Useful, yet Practical Focus – The plan lays out a model that attempts to correlate how specific actions influence human behavior – a change in X service or feature will generate Y type of human behavior. It should be understood from the outset that predictions of human behavior are bound to be imperfect. But as practitioners, we need to think in terms of a model’s usefulness to the ACCS marketing team and all of the people across ACCS’ customer touch points. To this end, the plan is driven by useful, yet practical

information and insights. And, in the end, the plan will help ACCS deliver insights everyone can understand and use – “tell me how I am doing and tell me how I can get better.”

Cost-effective Approach – Whenever possible, the plan recommends utilizing existing resources as cost-effective ways to gather and analyze missing information rather than conducting new surveys for customer feedback. A range of programming possibilities are outlined – ACCS’ objectives for the research, methodologies, implementation timeframe, and preliminary budget impact.

Customer Centric Audit – The plan presents a Customer Centric Audit in which all key customer touch-points will be assessed by audience across all of ACCS’ existing programs (ART, transit stores, ATP outreach –business and residential, Metrochek fulfillment packages, etc.). The plan will prioritize the most important points of contact and audiences and provide an assessment of each major customer touch-point, examining what messages ACCS is sending out, what feedback is being collected from customers, and what critical information is missing to measure ACCS impact. This will include an approach to mapping the major touch-points by audience and the identification of “customer relation systems” that potentially have the greatest impact on overall customer satisfaction.

Identify and Understand ACCS’ Distinct User/Non-User Groups – Arlington County’s population encompasses numerous distinct customer groups. ACCS needs to understand better why they became customer and what factors will impact their likelihood to remain customers over time. For a customer-centric focus, it will be imperative that these segments be identified, measured and understood in order to help ACCS formulate tactics that can meet the needs of specific segments, and, more importantly, address the key requirements of those customers ACCS is missing.

Identify the Right Variables – The plan outlines a method to identify "operating" variables that "drive" customer satisfaction across key segments, so the service delivery and related communications / promotion plan have specific areas to work on to improve overall customer satisfaction scores.

ACCS “Touch Point” Marketing: Make Every Contact Count

ACCS has put in place an impressive array of programs and services all designed to cultivate a greater appreciation and use of transportation alternatives to SOV travel.

- Sales Services, Arlington Transportation Partners (ATP) - Employer Services, Residential Services, Visitor Services, Site Plan Assistance/Development Services
- Retail Commuter Information and Support Services – Commuter Stores, CommuterPage.com (incl. BikeArlington.com, WalkArlington.com, Arlingtontransit.com), CommuterDirect.com, and Commuter Information Center (228-RIDE information)
- Operations and Support Services – CommuterDirect.com Support Center and Distribution and Logistics Program
- ACCS Marketing Services – Urban Villages/Way To Go, Transit marketing and Bus Stop Information Program
- Special Initiatives – BIKEArlington program, WALKArlington program, Arlington Carsharing program, Arlington Retail marketing program

While these programs and services are designed for different audiences and offer a wide range of benefits, all have one thing in common – *they serve people*. When all is said and done, ACCS is in the customer service business. Its core competency is the creation and dissemination of meaningful transportation-

related information and assistance designed to help people improve their mobility. ACCS is the software that runs Arlington County’s significant TDM-related transportation infrastructure investment.

Improving this core competency – *information dissemination and assistance* – will come from improving all major aspects of ACCS’ marketing mix, the array of products, how it delivers products, how it communicates the presence and related benefits of its products, and how customers are treated and served once they interact with ACCS. Improvements in most of these areas will come from continuous improvement in ACCS’ customer service performance – its ability to become more and more customer-centric driven in its focus and execution.

One of the most practical ways to do this is to understand and appreciate the component parts of the entire customer experience; that is, the individual and distinct points of contact an ACCS customer has with ACCS, ACCS staff, and ACCS services. These contact points, commonly called customer “touch points,” are most often thought of as the actual interpersonal or person-to-person contact (e.g., between a sales associate and a customer). Customer touch points, however, can include everything from an organization’s advertising to its invoice. A touch point is, in short, any point through which the organization “touches” its customer. Some common touch points are listed in the chart below.

Common Customer Touch Points

- Web site
- Voice Mail Messages
- Personal service by phone
- Phone transfers
- Quality of voice messaging system
- Online real time help
- Word of mouth
- Signage
- Point of Purchase
- Greeter
- Parking lot signage
- Rest rooms
- Advertising
- Collateral materials
- E-mail correspondence
- Trade shows

It is often customers’ collective set of experiences across numerous touch points that create and build a lasting emotional connection and the overall customer relationship. And, it is the quality of this relationship that, in turn, directly influences repeat usage of a service, active referrals, and overall positive word-of-mouth advertising.

As an organization dedicated to continuous improvement, ACCS should always seek to improve the overall customer experience. To this end, this Plan includes a 5-Step Customer Touch Point Analysis process and takes ACCS/ATP through several touch point audit examples.

While all of ACCS’ programs and services from the 228-RIDE to the Bike Arlington Program comprise hundreds of important customer touch points, ACCS management selected the Commuter Store, ATP Employer and Residential Outreach Sales Programs, and ACCS online properties as the service areas for initial touch point audits. Blueprints for these services are provided in Appendix _____. It is envisioned that ACCS; internal staff can follow this approach for other audits as needed.

The five steps for any individual audits that help make this tool easy to appreciate and implement, and monitor. They include:

- **Step 1:** Examine one ACCS product or service line such as ATP’s customer sales efforts or transit store and trace each customer segment through the entire audit process. Keep in mind what the overall program is trying to accomplish. The optimal place to start a customer touch point audit is

at the end – where you want a customer to end up or the specific action you want them to take. ACCS overall program goal is for customers to gain a greater appreciation of transportation alternatives to SOV travel and for the services to encourage customers’ use of an SOV alternative for every trip decision. Every ACCS program is designed to support this goal and present numerous touch points along the way.

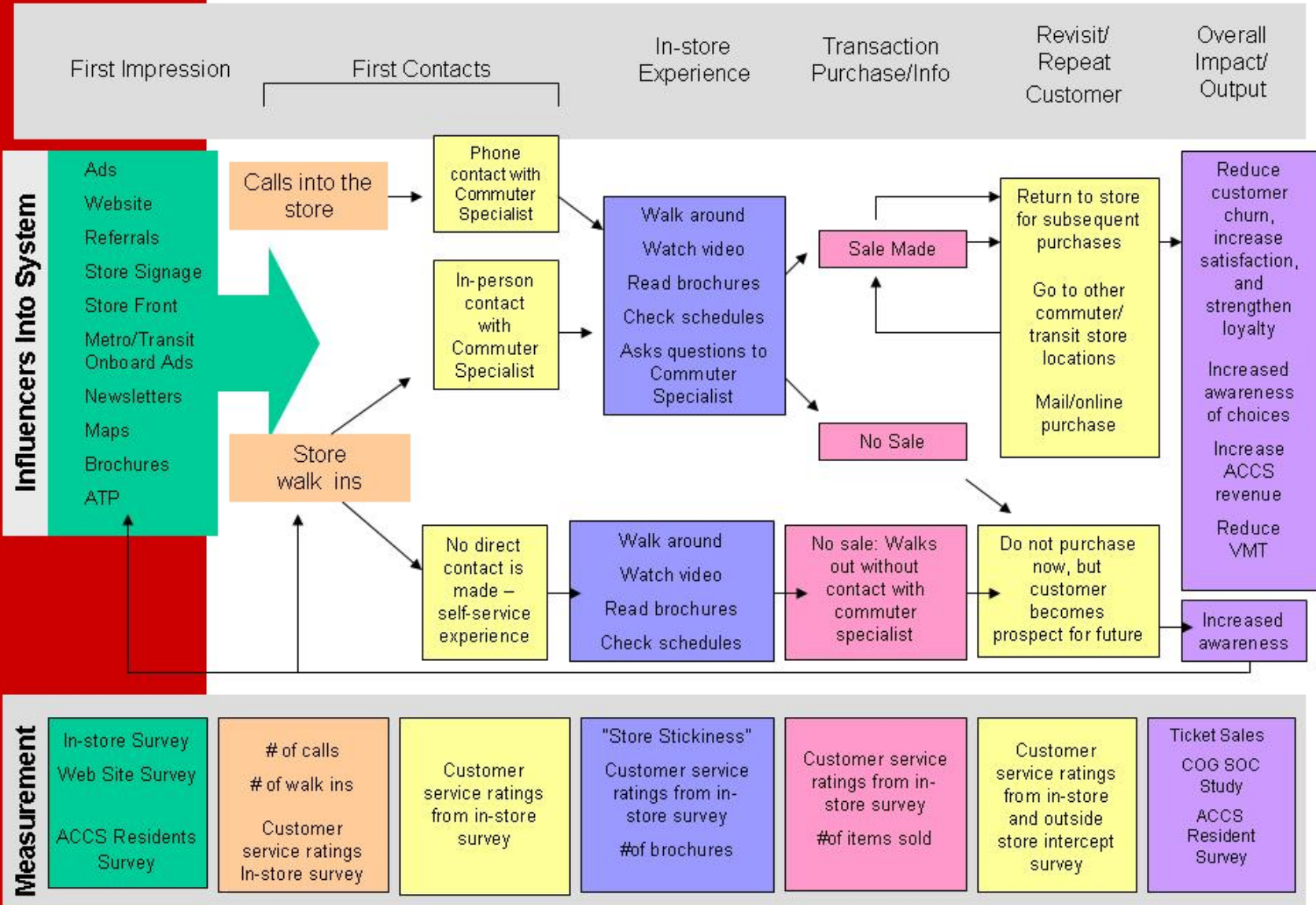
- Step 2: Detail the current customer experience in an overall Customer Experience Blueprint flowchart - profile the perceived customer interface at each point of contact.
- Step 3: Assess actual current customer experiences at each point of contact. When examining each touch point, ask, “is this an important touch point?” and “what impression am I leaving?”
- Step 4: Based on this assessment, refine or re-design an optimal customer experience model – starting with each touch point. This involves looking for improvements that can be easily made and measured. Once these improvements are considered, consideration should be given to update the Customer Experience Blueprint flowchart to incorporate any significant changes to customer touch points. This step culminates with the necessary action steps to implement changes/refinements.
- Step 5: Institute ongoing monitoring mechanisms to track performance and improvements at each step. This can include specific measures already being tracked such as sales receipts, store traffic or new highly customized information from customer satisfaction studies.

Through ongoing measurement, high and low performing touch points can be identified and decisions can be more easily made on which touch points should be improved. This entire touch point audit process will afford ACCS the ability to track and follow the customer experience throughout their use of ACCS’ services. It will help to determine what methods are successful in retaining customers and what factors are responsible for causing a customer to lapse.

To illustrate this approach, the Commuter Store Customer Experience Blueprint, a relatively straightforward example of this multi-step process, is presented on the following page. Six key touch points have been identified for a customer’s Commuter Store experience. These key touch points include: first impression, first contacts, in-store experience, transaction / purchase / information, revisit / repeat customer, and overall impact/output.

- First Impression: Common to most ACCS programs and services, the first point of contact with the retail stores is often ACCS’ broad communication vehicles: ads, Web site, referrals, store signage, store front, metro/transit onboard ads, newsletters, maps, brochures, and ATP. The influence of these initial impressions or touch points will be measured through the ACCS Residents’ Study.
- First Contact: The first contact is the call or initial store visit. Important here is the fact that walk-ins may or may not have any direct contact with store staff thereby creating a self-service experience. Informal estimates place this self-service experience incidence at 10% to 20% of all store visitors. The impressions made at this “first contact” will be measured by customer impressions and ratings collected through an in-store and outside store surveys.
- In-Store Experience: This is based on customers’ experiences in the store – what they do while they are physically in the store. For example, how much they walk around, view the monitor, read brochures, check schedules, ask questions of the commuter specialist, etc. The key here is the level of engagement and how much the store’s layout holds people’s attention and helps convert them into a customer. In Internet terminology, this is the store’s “stickiness.”

Commuter Store Customer Experience Blueprint



This will be measured with the customer service ratings from the in-store survey, as well as potentially sitting up measures to track the ratio of brochures disseminated and total products sold to the number of store visitors.

- Transaction Purchase/Information: This touch point is marked by whether or not a sale is made. It will be measured by customer service ratings from the in-store survey and by the number of items sold.
- Revisit/Repeat Customer: This touch point is marked if a customer returns to a store for subsequent purchases, goes to other commuter/transit store locations, makes mail/online purchases, or if a customer does not purchase now but becomes a prospect for the future. Customer service ratings from in-store and outside store intercept surveys will help measure this.
- Overall Impact/Output: Everything the customer has experienced up to this point will influence the impact/output of the retail store. Specific output measures include store customer churn, overall customer satisfaction with the store, awareness and consideration of alternative travel choices, ACCS store-related revenue, and reduction in SOV vehicle miles traveled (VMT) that can be attributed to the store. Customer service ratings from in-store and outside store intercept surveys will help measure these impacts. Other impacts will be measured by ticket sales, Commuter Store customer feedback research, and the ACCS resident survey.

Again, a detailed diagram of ACCS' customer experience as it relates to ACCS' retail commuter stores is included in the Appendix of this document. This diagram effectively takes readers of this Evaluation Plan through Step 2 of the audit process. As they are conducted, the research components (specific studies and information) outlined in this document will help complete the touchpoint analysis process.

ACCS is the de facto software that runs Arlington County's significant investment in its TDM-related transportation infrastructure. As an organization dedicated to continuous improvement, ACCS can use the 5-Step Customer Touch Point Analysis process to find ways to increase the organization's overall impact in helping people understand their transportation options and make smarter trip decisions.



Section 4 Program Performance Indicators

Key Performance Expectations and Themes

As noted in Section 1, one objective of the research and evaluation process is to document the results and outcomes of the program. How successful is ACCS? And, equally important, are there any areas in which the program falls short of its expectations and needs additional attention? Answering these questions requires first that ACCS define what “success” means – performance indicators by which ACCS can measure its progress toward goals and objectives.

ACCS’ vision is:

To improve the quality of life and economic sustainability of Arlington by reducing traffic congestion and improving air quality.

ACCS’ mission is:

To provide the most accurate, timely and useful information and services to residents, workers and visitors in Arlington to increase use of public transportation and alternatives to driving alone.

As this mission indicates, a major ACCS function is to provide information to several customer groups. Further, the information must be “accurate, timely, and useful,” thus the quality of the information and quality of the interaction with ACCS also are important. This suggests that at least two functions: 1) extent of information dissemination and 2) customer service quality will be important indicators of ACCS’ performance. The mission further states that the information is provided for the purpose of encouraging greater use of non-drive alone modes of travel. This indicates that a third objective: travel behavior change, also should be used to assess ACCS’ performance.

But travel behavior change is desirable not as an end in itself, but because it might support myriad objectives of the County: improving mobility of County residents, enhancing access to County destinations, reducing traffic congestion and air pollution, supporting economic stability, and promoting healthy and vibrant communities. The research proposed in this plan is designed to collect information that will be useful for future resource allocation decision-making by various stakeholder audiences, including County policy-makers and program funders, among others. Thus, indicators that estimate ACCS’ contribution toward these goals also could be useful to demonstrate ACCS’ value to various stakeholders.

For this reason, as described in Section 1, the consultants interviewed ACCS staff and other County stakeholders during the development of this plan to develop a clearer understanding of the expectations County policy makers hold for ACCS. These interviews addressed the following issues:

- Arlington transportation strategic focus & objectives
- Transportation performance & accountability expectations and assumptions
- Perceptions and expectations of ACCS

Appendix 2 summarizes notes from these interviews on all topics covered, but key themes informing the development of performance indicators are presented below.

- Role of Transportation in Creating a Vibrant and Attractive Arlington – Interviewees presented a clear and consistent vision of the role transportation plays in making the County a desirable destination. All agreed that transportation is an integral part of planning and community development. The



County offers a vast array of transportation infrastructure and services, integrated with a dense, mixed-use land development pattern. This enables residents and employees to access County destinations easily without a car and contributes to the image of the County as an exciting location with the advantages of an urban setting. Indeed, several interviewees suggested Arlington residents “expect” a transportation system that allows them a high level of personal mobility. It was also indicated that Arlington’s diverse transportation options and superior access are among the County’s selling points for businesses considering relocating to the County. *This suggests that performance indicators related to mobility, access, community satisfaction, and quality of life could be useful for ACCS to document its contribution to these goals.*

- *County as a Sub-Regional Transportation Hub* – Numerous interviewees cited the volume of travel in the County and the inability to expand the road infrastructure as a significant current and future transportation challenge. The County is both a significant generator of trips (residential and tourist travel) and attractor (employment travel). Further, the transportation infrastructure of Arlington County serves through-travelers, destined for locations in Washington, DC or other jurisdictions adjacent to the County. The large volume of travel within and through the County places great strains on the infrastructure, emphasizing the need for transportation services to encourage high use of non-SOV travel modes. This pressure will continue to grow as the significant new housing and commercial development now in the pipeline is constructed. *Interviewees cited reducing SOV use as a major objective for ACCS, reinforcing the sense, noted earlier, that measures of mode choice and behavior change are important performance indicators for ACCS.*
- *ACCS Focus on Encouraging Use of Non-SOV Modes* – Most interviewees said their primary expectation of ACCS was for the program to educate and inform Arlington County travelers about travel options and to encourage use of non-SOV modes. In general, interviewees believed ACCS was effective, although this view was primarily drawn from their knowledge of participation levels in ACCS’ program, rather than from data they had seen documenting either awareness levels or mode change. *This indicates a need for ACCS to measure levels of awareness and levels of non-SOV mode use (e.g., mode split) as primary performance indicators. But it also implies a need to measure shifts to non-SOV modes that can be attributed to ACCS’ activities.*
- *Acceptance of ACCS as Valued Resource and Partner in Making Transportation Work* – Interviewees were unified in their view that ACCS also was a valued resource making transportation work and thus supporting various County missions (access, mobility, economic development, community planning, citizen satisfaction, etc.). But interviewees had realistic expectations for the degree to which ACCS could influence change in community-level goals.

ACCS was viewed as a necessary part of the complete transportation-land use package, but the package also included a dense urban form, inner/core location within the region, extensive road and transit infrastructure, and a pedestrian and bicycle-friendly environment. Interviewees believed it would be difficult to separate the influences of these various components and did not seem to find it necessary for ACCS to document its portion of the benefit. *Thus, while it could be useful to quantify ACCS’ role in, for example, businesses’ satisfaction with the County as a business location, it does not seem to be necessary to persuade County stakeholders of ACCS’ value. It would, however, reinforce ACCS’ position and acceptance among County stakeholders and provide information to demonstrate the breadth of ACCS’ benefits. But indicators, such as numbers of employers participation in ACCS services and businesses’ satisfaction with ACCS services used, could be acceptable intermediate indicators.*

- Population Diversity and Turnover – Another recurring theme related to information dissemination was the broad cultural, economic, and “life phase” diversity of County residents. The County is home to residents of many nationalities, young and mature residents, and high income and low income households. The County also includes long-time residents who remember Arlington as a “neighborhood” environment outside the city, as well as a large contingent of young residents who select Arlington County for its close-in location and urban amenities. Additionally, nearly all interviewees noted the high turnover among County residents. Interviewees cited the need for continued and broad outreach, using multiple media, to ensure high levels of understanding of the links between transportation and community goals and a high awareness of transportation services and options. *This suggests measurement of awareness levels and attitudes about County transportation options will be relevant indicators to numerous stakeholders, and that these indicators should be assessed for various customer groups.*
- Employers and Property Managers as ACCS Customers – Although ACCS’ primary customer groups consist of travelers (residents, employees, visitors, etc.), several interviewees noted the importance of employers and property managers as ACCS “wholesale” customers. By serving as bulk distribution outlets for information materials, these groups multiply ACCS’ outreach efforts. And by sponsoring the cost of non-SOV travel incentives for employees and residents and implementing other TDM services at the worksite, they provide persuasive motivators that can influence travelers mode choice decisions. *Indicators that show employers and property managers participation in ACCS’ services and involvement in TDM strategies will be important in documenting ACCS’ performance.*
- Targeted Customer Needs – Interviewees generally agreed that ACCS had several customer groups, including: residents, employers/retail businesses, employees, and visitors/tourists. But interviewees felt it would be helpful to have more information on what customers needed and wanted. This was particularly the case for non-commute travel populations (youth, seniors, physically challenged) and populations that were not well-represented on the advisory boards (immigrants, young professionals, “transient” populations, students). Interviewees believed this information could help focus ACCS’ services to solidify existing user populations and to attract new customers. *This suggests ACCS should measure awareness, participation, and behavior change among multiple customer groups, not just among all customers collectively.*
- Customer Satisfaction – The ACCS staff and stakeholder interviews illustrated a concern of many unknowns, including key information or “inputs” on customer satisfaction performance measures. The best assessment of overall customer satisfaction includes both direct and indirect measures. Direct measures include the classic questions that probe satisfaction such as “*how satisfied are you, on a 1-7 scale, with xyz service.*” Indirect measures of customer satisfaction further explore “relationship strength.” Indirect customer satisfaction measures include questions such as “*intent to use xyz service again*” and “*how much one recommends xyz service to others.*”

But customer satisfaction measurement does not stop here. The real power of a customer-centric orientation comes from identifying and measuring the key performance drivers that impact these direct and indirect satisfaction measures. This comes from carefully identifying, understanding, and tracking users’ perceptions of key service attributes such as “*being on time,*” “*cleanliness of the bus,*” “*feeling of security,*” etc. The identification of this “linkage” between overall satisfaction and key attribute drivers provides the roadmap for achieving meaningful improvements in overall customer satisfaction.

When it comes to a review of ACCS’ existing performance data, however, there are gaps in this type of information – direct and indirect satisfaction measures – as well as key attribute performance driv-

ers. This suggests that optimal “performance indicators” cannot be listed at this time. The final report will detail an audit of all the past studies and present a matrix of existing and missing customer performance satisfaction measures across each ACCS service.

Proposed Performance Indicators

The mission statement and the themes highlighted above suggest that ACCS should consider implementing a range of indicators to document its performance in several key areas. Primary attention should be given to measures of customer awareness and attitudes, service participation, customer satisfaction, travel behavioral change, and impacts of the changes on the transportation system.

Based on the comments of the stakeholders interviewed, it does not appear essential for ACCS also to translate these results into indicators of impacts on economic and community vitality, or other social or community goals. Further, it will be difficult to measure a quantitative impact for ACCS for some of the social/community goals, because ACCS’ influence is intertwined with those of infrastructural and planning functions and peripheral to these other functions. But we believe it would be useful to ACCS to document the breadth of its benefits, to the extent possible, as evidence for both internal stakeholders and parties outside Arlington County.

The specific indicators recommended are listed below in five categories. The first four represent steps necessary for social behavioral change. The remaining indicators relate to external impacts resulting from behavior change:

Customer Behavior Change Indicators

6. Awareness and attitudes
7. Participation in ACCS services
8. Satisfaction with services and repeated use
9. Travel behavior change

External Impact Indicators

10. Transportation and air quality impacts

Customer and Behavior Change Indicators – Incorporating travel choice into one’s daily trip decision-making thought process is not easy. Most Americans have been conditioned to “*think auto first.*” This includes work trips as well as short neighborhood shopping trips. Changing this mindset requires people to go through an educational process supported by positive process experiences before the desired behavior can be permanently adopted. The classic social marketing model outlines this multi-step transformation:

- | | |
|-----------------------|---|
| ▪ Awareness | Build initial awareness of travel option concept |
| ▪ Familiarity | Increase appreciation and understanding of specific alternatives |
| ▪ Consideration/Trial | Try one or more options / have a favorable experience |
| ▪ Desired Behavior | Adopt the behavior – i.e. a travel alternative – in everyday living |
| ▪ Advocate for Cause | Person becomes an apostle for the cause |

The indicators included in categories 1 through 4 will document ACCS’ progress in advancing this model for travel behavior change in Arlington County. Further, because ACCS serves “wholesale” customers (employers, hotels, and property managers) in addition to traveler customers, indicators are established for these groups as well.

1 – *Awareness and Attitudes* – indicators assessing travelers’ awareness, familiarity, and consideration of ACCS services and travel modes as precursors to behavior change. These indicators also assess the impacts of travel choices and behavior change on perceptions of community vitality and business vitality

Travelers

- Percentage of residents/employees who are aware of various travel options in the County (by customer group and source of info)
- Percentage of residents/employees who know of ACCS and its services (by customer group and source of info)
- Residents’ and employees’ favorability ratings toward transportation options in the County
- Percentage of residents/employees who would consider using or increasing their use of non-SOV modes for various trips
- Percentage of residents who choose not to own a personal vehicle
- Percentage of residents who rate the County as “easy to get around in”
- Percentage of residents who rate the County (or specific areas of the County) as “walkable” or “pedestrian/bicycle-friendly”
- Percentage of residents who believe transportation options and mobility in Arlington support a high quality of life

Employers/Retail Businesses/ Building Managers

- Percentage of employers and retail businesses that know of ACCS and its services
- Percentage of building managers that know of ACCS and its services
- Employers’ rating of desirability of Arlington as a business location – “business quality of life”
- Percentage of employers that believe transportation options and mobility in Arlington support business operations (recruitment, retention, productivity, etc.)

2 – *Participation in ACCS’ Service* – indicators focusing on travelers’ use of various ACCS services; also indicators focusing on the involvement of employers, other businesses, and property managers in ACCS’ services and transportation support programs:

Travelers

- Number of service/program inquiries (web, phone, other contacts)
- Number of travelers who use ACCS services (by service and by customer market – resident, employee, visitor)

Employers/Retail Businesses

- Employers and retail businesses participating in ACCS services by service type (percentage of employers/employees covered)
- Percentage of relocating employers (100+ employees) that utilize ACCS’ services
- Percentage of employers providing TDM services to employees (by level of TDM service)

Building Managers

- Buildings participating in ACCS services by service type (percentage of buildings/residents)
- Percentage of buildings providing TDM services to residents

3 – *Satisfaction with ACCS’ Services and Repeated Use* – indicators focusing on customers’ satisfaction with the services ACCS provides:

- Percentage of customers (travelers, business/employers, building managers) who rate ACCS' services favorably (by service type and customer group; perhaps use satisfaction index, also rate motivating attributes individually)
- Percentage of customers who use ACCS' services repeatedly
- Percentage of customers who would recommend ACCS' services to friends, colleagues, peers

4 – Trial and Ongoing Travel Behavior Change – indicators assessing extent and duration of shifts to non-SOV modes:

- Trial placement rate – percentage of travelers who try non-SOV modes
- Continued placement rate – percentage of service users who maintain shifts to non-SOV modes after assistance from ACCS (overall and by service type)
- Placements – total number of travelers who shifted to non-SOV modes after assistance from ACCS (overall and by service type)
- Rideshare retention rate (longevity of non-SOV mode use)

External Impact Indicators – Travel behavior change and the process leading up to it are significant objectives of the ACCS' program, but they are ultimately desirable for the benefits they offer to the community. To this end, indicators were selected to translate measures of behavior change into indicators of external impacts – how does travel behavior change benefit Arlington County.

5 – Travel and Emissions Impacts – indicators assessing the impacts of behavior change on the transportation system and on air quality and utilization of transportation infrastructure:

- Mode split (percentage of trips made by each travel mode) – County-wide and ACCS client sites vs non-client sites, perhaps also by trip purpose and customer type
- Vehicle trip generation rates (vehicle trips arriving at a location per 100 person arrivals) – ACCS client sites vs non-client sites
- Parking utilization rates (percentage of available parking spaces used for short- or long-term use) – ACCS client sites vs non-client sites
- Number of vehicle trips reduced
- Number of VMT reduced
- Pounds of emissions eliminated
- Percentage fewer vehicles traveling during a.m. and p.m. peak periods (compared to if all travel was in SOV)

Measurement Levels

Measurement for ACCS Overall vs Individual Programs/Services – With a few exceptions, we assume that ACCS will measure the performance indicators described above for the ACCS program as a whole or for a sub-segment of the program that would be applicable. But some of the indicators also note that they could or should be measured on multiple sub-levels, such as, “by customer group,” “by service type,” “client sites vs non-client sites,” etc. These sub-assessments are suggested to examine performance of individual programs and services, for purposes of both evaluation and future program or service planning.

Examining performance indicators at the program or service level will be important for assessing service use and customer satisfaction, but also for estimating program impacts. Most of the performance indicators are designed to identify what changes were made, for example, how many commuters started riding the bus? But why the changes were made is equally important. Which message motivated a resident to



consider using the bus? What information source informed the customer about ACCS, ART, or Metro-bus? What motivated them to contact ACCS? Which services did they try and why? Which services did they not try and why not? And for what reason did a commuter finally make the mode change?

Measurement for All Arlington County vs ACCS Clients – For some of the indicators in group 5 (Travel and Emissions Impacts), we do not recommend basing these analyses on change across Arlington County as a whole, because many factors influence change in these indicators. Rather, we suggest comparative assessments of indicators among ACCS’ clients versus non-clients. For example, mode split at worksites or apartment buildings that participate in ACCS services and at non-participating locations. Or parking utilization at a site planned building compared to utilization at other buildings. This will illustrate the ACCS’ contribution to the overall impact and help separate influences of other factors on mode choice.

Further, because it will be difficult, and perhaps not conclusive, to measure differences in these impacts, even with a client versus non-client approach, we recommend also assessing indicators of intermediate performance in educating travelers and employers and influencing their attitudes toward travel and the role transportation, access, and mobility play in community quality of life. These secondary indicators do not offer clear evidence of impacts, but can suggest possible future impacts. These indicators are primarily listed under group 1 – Awareness and Attitudes.

Measurement by Time Frame – The plan assumes that each performance indicator presented in this section will be assessed “periodically,” but the period between measurements will not be the same for all indicators. The time between measurements will depend on the type of measure, the difficulty of collecting the data to measure the indicator, and the likelihood of change between measurements. Indicators that are counts of common activities (e.g., calls to the Commuter Information Center) would be measured more frequently than would be indicators for less common activities (e.g., number of relocating employers assisted). Indicators for which data are difficult or expensive to collect (e.g., resident opinions) will be measured less frequently than data that are easier to collect (e.g., number of employer clients). Similarly, measurement would be less frequent for indicators that are not likely to change quickly (e.g., County-wide mode split). Measurement frequency should be balanced to minimize the cost of data collection but capture change or progress in indicators.

Table 1, on the following page, shows recommended frequencies for measuring each indicator: monthly/quarterly, annually, or triennially/biennially. In general, counts of activities that occur daily or weekly, such as service participation or use, are measured on the most frequent schedule, either monthly or quarterly. Customer satisfaction and service impacts are assumed to be measured once per year. And measures of opinions, attitudes, needs, would be measured once every two or three years.

Table 1 – Recommended Time Frame for Assessing Performance Indicators

Performance Indicator	Biennial / Triennial	Annual	Quarter / Month
Traveler Awareness and Attitudes			
-- % residents/employees who are aware of travel options in Co	X		
-- % residents/employees with favorable rating on travel options in Co	X		
-- % residents/employees who consider HOV for commuting	X		
-- % residents/employees who consider HOV for non-work trips	X		
-- % residents who choose not to own personal vehicle	X		
-- % residents who rate Co as “easy to get around in”	X		
-- % residents who rate Co/neighborhood as “walkable / ped friendly”	X		
-- % residents who believe travel options support high QOL in Co	X		
-- % residents/employees who know of ACCS and its services	X		
Employers/Business, Building Manager (E/B/BM) Awareness and Attitudes			
-- % E/B/BM with favorable rating towards travel options in Co	X		
-- % E/B/BM that say travel options support high business QOL in Co	X		
-- % E/B/BM that know of ACCS and its services	X		
Traveler Participation in ACCS Services			
-- Number of traveler service inquiries (web, phone, other)			X
-- Number of Commuter Store visits and sales			X
-- Number / percentage of residents using ACCS services		X	
-- Number / percentage of employees using ACCS services		X	
-- Number of visitors using ACCS services			X
Employers/Business, Building Manager (E/B/BM) Participation in ACCS Services			
-- Number of E/B/BM service inquiries (web, phone, other)			X
-- Number / percentage of employers/business clients			X
-- Number / percentage of employees at ACCS client sites			X
-- % relocating employers using ACCS services			X
-- % Co employers providing TDM services to employees			X
-- Number / percentage of building manager clients			X
-- Number / percentage of residents at ACCS building client sites			X
-- % buildings in Co providing TDM services to residents			X

Table 1 (continued) – Recommended Time Frame for Assessing Performance Indicators

Performance Indicator	Biennial / Triennial	Annual	Quarterly/ Monthly
Satisfaction with ACCS' Services and Repeated Use			
-- % resident/employee customers with favorable ratings on services		X	
-- % visitor customers with favorable ratings of services		X	
-- % employer/business clients with favorable ratings of services		X	
-- % building manager clients with favorable ratings on services		X	
-- % resident/employee ACCS' customers who are repeat customers		X	
-- % ACCS' customers who would recommend services		X	
Trial and Ongoing Travel Behavior Change			
-- % travelers who try non-SOV modes (trial placement rate)		X	
-- % travelers who maintain shifts to non-SOV modes (continued placement rate)		X	
-- Number of new non-SOV users (placements)		X	
-- Rideshare retention rate (longevity of non-SOV mode use)		X	
Travel and Emissions Impacts			
-- Number of transit riders (ART, Metrobus, Metrorail)			X
-- Mode split (Co-wide and ACCS client sites vs non-client sites)			X
-- Mode split of residents (work trips and non-work trips)			X
-- Work trip mode split of employees		X	
-- Vehicle trip generation rates (ACCS client sites vs non-client sites)		X	
-- Parking utilization rates (client sites vs non-client sites, adjusted for parking/building ratio)		X	
-- Number of vehicle trips reduced		X	
-- Number of VMT reduced		X	
-- Pounds of emissions reduced		X	
-- % vehicle reduction during peak periods (compared to all SOV)		X	

Section 5 Strategic Approach for Assessing Performance and Impacts and Evaluating New Service Ideas

Assessing Current Performance and Impacts

This section of the plan details methodologies recommended to assess progress in performance indicators. These will fall into five main categories, following the performance indicator categories defined in Section 4:

- 1) Awareness and attitudes
- 2) Participation in ACCS services
- 3) Customer satisfaction
- 4) Travel behavior change
- 5) Impacts from travel behavior change

Awareness and Attitudes

Travelers – The performance indicators listed in Section 4 included in this group relate to travelers' awareness of travel options available in Arlington County, their attitudes about the options and about travel and mobility in the County, and their awareness of the services ACCS offers. The first two indicators are straightforward measures of ACCS' effectiveness in disseminating information. Arlington County has an extensive transportation network. How much do residents and employees know about the options that exist? What transit routes operate? What shopping areas are accessible by Metrorail? How much do travelers know about ACCS? Have they heard the name? Do they know that travel information services are available? Do they know these services are offered by ACCS? Do they distinguish ACCS and its component operations (e.g., Commuter Stores) as County services?

The third and fourth indicators explore ACCS' success in shaping travelers' attitudes about various travel options. How do residents and employees rate the availability and convenience of transit in the County? How do they rate the cost of carpooling, compared to the cost of other modes? Do they rate Arlington's pedestrian facilities as being of high quality? Would they consider using non-SOV modes?

The final four traveler awareness and attitude indicators were selected to examine residents' perceptions of Arlington as a transportation-rich community. These indicators, which measure community mobility attributes, include the percentages of residents who: 1) choose not to own a personal vehicle, 2) rate the County as "easy to get around in," 3) rate the County (or specific areas of the County) as "walkable" or "pedestrian/bicycle-friendly," and 4) "believe transportation options and mobility in Arlington support a high quality of life."

These were chosen because they offer specific transportation objectives within ACCS' program, but a travel/mobility quality of life index that combines multiple aspects of personal mobility, also could be developed for this purpose. This index would identify and weight the travel/mobility priorities held by residents into a single measure of the community's performance on residents' travel and mobility expectations.

Obviously ACCS cannot be held wholly responsible for attitudes about travel options because ACCS does not control how all the options are provided. But part of ACCS' job is to educate travelers on the benefits each option provides and the role transportation and mobility play in making Arlington a desir-



able place to live. So assessment of residents' and employees' opinions on the feasibility and desirability of modes is relevant to assessing ACCS' performance. Additionally, collecting information on these opinions – why mode options are or are not feasible or desirable and how residents rate Arlington's transportation system – is a critical step in planning for services that will meet travelers' needs and expectations.

Because the indicators in this category assess knowledge and perceptions, they can only be assessed through direct feedback from residents, employees, visitors, and other populations of interest. The plan proposes a residents' survey as a central research tool in this effort. This survey would capture input from all potential resident customers, both users and non-users, and would explore a range of resident travel needs and attitudes. Information from this survey also could be used to develop the travel/mobility QOL index and to track residents' ratings of the index over time. Through probing questions about why residents rate the County as they do, ACCS also could estimate its contribution to the ratings. With an adequate sample of respondents, the survey also could permit analysis of various sub-populations, such as seniors, students, Hispanics, and other groups, to identify differences in travel needs and opinions.

Similar feedback also should be solicited from employees, as part of a general employee survey implemented at client sites. Employee surveys might be attempted at non-client sites, but this likely would be more difficult to implement due to the need to obtain permission of the employers to undertake worksite surveys. If budget allows ACCS also could conduct special surveys to explore awareness and attitudes of visitors, shoppers, and other potential customers who are not residents or employees in the County. However, these would be secondary research priorities, except in the case of a new initiative.

Employer/Business/Property Managers – The Awareness and Attitude indicator category also presents indicators to explore awareness and attitudes of business entities that could be or are involved in ACCS' programs. First do these potential customers know about ACCS? Are they aware of the services ACCS offers? Do these services appear valuable to potential customers?

The last two indicators in this category, "employers' rating of desirability of Arlington as a business location" and "percentage of employers that believe transportation options and mobility in Arlington support business operations," explore employers' perceptions of Arlington's business vitality or "quality of business." These two indicators could be examined individually, or combined with other transportation-related attributes, into an index of Arlington's quality of business.

The plan proposes that a business survey, which could include many non-transportation questions also, would be an efficient tool to target Arlington County employers to assess and benchmark the business community's perceptions of Arlington County's transportation system, the degree that mobility and access contribute to Arlington County's desirability and rating as a business location, and the level of satisfaction with how the County is currently serving business' and their employees' transportation needs. Arlington Economic Development (AED) has offered to help ACCS conduct this study through access to its comprehensive list of senior level corporate contacts across Arlington County.

This survey will provide one means of measuring the impact and outcomes of awareness of and participation in ACCS' employer-based TDM education and programs. To this end, ACCS' targeted business clients will be "coded" to distinguish clients from non-clients.

Participation in ACCS Services

Program participation refers to the number of customers who receive services from ACCS, for example, the numbers of employer clients, property manager newsletter recipients, commuters who access CommuterPage.com, and counts of users of other ACCS services.

Participation will largely be tracked through on-going program tracking, much of which ACCS is currently performing. For example, ACCS now tracks numbers of employer and retail business clients, commuters reached through events held at worksites, employers with transit benefits, website hits, transit fare media distributed through Commuter Stores, brochures and transit schedules sent by the distribution center, transit ridership, use of carsharing vehicles, attendees at WalkArlington promotions, and participation in many other program activities. The plan assumes that ACCS will continue collecting most of these data items, as well as participation levels in other activities.

Customer Satisfaction

The next group of indicators relates to measures of customer satisfaction. How satisfied are travel customers – residents, employees, visitors – and “wholesale” customers – employers and property managers – with the information and incentive services ACCS’ provides?

At the most simplistic level, satisfaction can be measured in customers’ ratings on ACCS’ services overall and on specific attributes of service, but the best assessment of overall customer satisfaction includes both direct and indirect measures. Direct measures include the classic questions that probe satisfaction such as *“how satisfied are you, on a 1-7 scale, with xyz service.”* Indirect measures of customer satisfaction further explore “relationship strength.” Indirect customer satisfaction measures include questions such as *“intent to use xyz service again”* and *“how much one recommends xyz service to others.”*

But customer satisfaction measurement does not stop here. The real power of a customer-centric orientation comes from identifying and measuring the key performance drivers that impact these direct and indirect satisfaction measures. This comes from carefully identifying, understanding, and tracking key service attributes such as *“being on time,” “cleanliness of the bus,” “feeling of security,”* etc. The identification of this “linkage” between overall satisfaction and key attribute drivers provides the roadmap for achieving meaningful improvements in overall customer satisfaction.

The plan recommends establishing a common language for assessing customer-centric results across ACCS’ service lines. For example, one very common approach is to build an index from attitudinal survey scores across several questions – overall satisfaction rating; rating on the extent to which ACCS is doing everything possible to make it a great experience; likelihood to recommend to a friend or colleague; and likelihood to increase utilization (business: increase use of ATP services; residents: increase % transit trips make of total trips). This could be presented in a “satisfaction rating score card” showing both the results on the index and results on various service attributes.

It is difficult to define at this time the specific attributes that should be included in a satisfaction index, because it is not known what attributes are significant to customers - which drive attitudes and behavior. These drivers would be weighted by their relative importance to develop an index that accurately reflected the myriad attributes customers consider. Thus, optimal “performance indicators” cannot be listed at this time.

The data for both the development of the customer service index or other measurement tool and for future checks of satisfaction must come from feedback from current customers. But to enable ACCS to expand



its markets, non-users also should be included in this process to ensure that future services meet the expectations of both current and potential customers.

Travel Behavior Change

In the context of ACCS' performance, travel behavior change refers to changes travelers make in how they travel as a result of information or services they received from ACCS. Travelers could include residents, employees, or visitors, traveling to, within, or from Arlington County. ACCS' services are focused primarily on travel to work, but also could motivate travelers to use non-SOV modes to travel for school, shopping, personal errands, recreation, entertainment, or other purposes. Four indicators of travel behavior change are recommended: trial and continued placement rates, non-SOV placements, and rideshare retention rate.

The first two indicators, trial and continued placement rates, refer to the percentage of a targeted population (residents, employees, service users, etc.) who were influenced to a travel change by some type of intervention (e.g., new service/facility, promotion, etc.). The third indicator, non-SOV placements, equals the total number of targeted population who made a change to a non-SOV mode. The fourth indicator, rideshare retention rate, measures the duration of a new rideshare arrangement – how long does the benefit last when a member of the targeted population makes a change.

The plan recommends assessing these indicators by surveying a sample of the targeted population to ask about their travel patterns for whatever time period and trip purpose are appropriate. Depending on the situation and the intervention, the survey can be done twice, before and after an intervention, such as the introduction of a new service, or done once, after the intervention. In the first case, the change in travel is measured as the difference between the “before” and “after” survey patterns. In the second case, survey respondents are asked to report current patterns, then to recall “retrospectively” travel patterns from a previous time. Here, the change is assessed by comparing the current to the past situation for each respondent and identifying respondents who reported changes.

The advantage of the “before” and “after” survey combination is that actual behavior is measured at both points in time, eliminating bias from respondents' poor recall of past activities. But the disadvantage is that it is impossible to identify individual respondents who have made changes and probe for how or why they made the changes or to explore the influence of factors outside the intervention. Thus, while the overall behavior change might be more accurately measured, why it occurred is unknown. Because many factors influence travel behavior change and change motivation is often an important consideration, retrospective surveys are frequently used for this purpose. However they can be combined with before surveys and/or direct observation (e.g., counting vehicles entering a worksite parking lot) to provide a check of the past behavior reported retrospectively.

Impacts from Behavior Change

The list of performance indicators includes several indicators traditionally used in commute service evaluations to translate travel behavior change into transportation and air quality benefits. The first three of these indicators, mode split, vehicle trip generation rates, and parking utilization rate, represent benefits related to utilization of transportation networks and facilities.

Mode split is most commonly assessed through a survey of a targeted population. For example, the mode split of commuters arriving at a worksite might be assessed by surveying the employees about how they



traveled to work on one or more days during a week. Mode split over a larger geographic area might be estimated by asking similar questions in a telephone survey of a random sample of residents.

Vehicle trip generation rate is assumed in this plan to be a site-specific measure. It could be assessed by counting vehicles arriving at a site and comparing to the number of people arriving (if the total number of arrivals is known). But it is expected that some employees and residents at the sites park off-site, thus this is likely to under-count vehicle access to the site. An alternative would be to conduct a survey of people arriving at the site, asking how they traveled to the location and asking about both on-site and off-site parking. Parking utilization could be either site-specific or area-wide. It would likely be measured by counts of vehicles parked at a particular time of day and compared to the total number of parking spaces available.

Methods to estimate the remaining four indicators, number of vehicle trips and VMT reduced, emissions eliminated, and percentage fewer vehicles traveling during a.m. and p.m. peak periods compared to SOV travel, all are well-established in the transportation and TDM industry. These are typically measured by surveying a sample of travelers who might be influenced by a service, facility, or other TDM strategy and asking how they currently traveled to a location or for some purpose and how they traveled before the strategy was implemented.

Multiplier factors that represent the average change per traveler who makes a change are then derived for each indicator from these survey data. For example, a commuter who shifts from driving alone to carpooling for a work trip would reduce one vehicle trip per day (0.5 trips in the morning and 0.5 trips in the evening), while a commuter who shifts from driving alone to transit would reduce two vehicle trips per day. On average, these two commuters together would reduce 1.5 trips per day $((1+2) / 2$ commuters).

This “vehicle trip reduction factor” can then be multiplied by the total number of placements (new non-SOV users) to estimate total vehicle trips reduced by all placements. Similar multiplier factors can be derived for average distance traveled and average emissions eliminated by a new non-SOV user. Appendix 4 presents an example of how such a calculation would be made for a hypothetical ACCS service.

Valid, credible assessment of these indicators for ACCS assumes several important principles:

- Base estimates of travel and air quality impacts on measured, actual travel change, rather than on assumed change. Use of a non-SOV alone mode does not always indicate that an SOV trip was eliminated. A walk trip might be substituted for a bus trip, for example, or a carpool trip for a train trip. In assessing the impact of a service, compare how trips are currently being made with how they were made or would have been made when the service was not available. This requires that travelers be queried about their travel both before and after a service was provided.
- As much as possible, separate the impacts of individual ACCS services to avoid double counting benefits. For example, a commuter might start using transit as a joint result of employer outreach and transit marketing. These impacts must either be wholly credited to one of the two services or the impact divided between the services. Program benefits are not necessarily additive, thus services where overlap is likely to be found must be evaluated in combination. Additionally, survey questions about the use of travel assistance services can help to identify where and how much overlap exists. For example, a new transit rider might indicate that he received a transit pass through CommuterDirect.com, but also obtained transit information from CommuterPage.com. If the services were analyzed separately, two new transit trips might be counted. By analyzing these services together, it is clear that the new transit trip should only be counted once.

- Similarly, separate the impacts of ACCS services from the impacts of infrastructure and land use structure. Measure all travel choice impacts that can be attributed to ACCS’ efforts, but be conservative in measuring impacts that could be influenced by multiple factors or services.
- And, when possible, account for the possible impacts of exogenous factors that also can influence travel decisions, for example, traffic congestion, travel distance, fuel prices, and other factors. User surveys must carefully query commuters who shift to non-drive alone modes to define the relative importance of various services and factors in influencing mode choices.

Bottom Up and Top Down Assessments

Due to the complexity of ACCS’ package of services and the varied customer groups, we anticipate recommending that surveys be performed on two assessment levels. The first is a “bottom up” approach, in which services are assessed separately or in closely-related groups of services (e. g., Employer Services). These assessments will estimate behavior change for the target services, but also examine motivation of users and customer satisfaction. Data from these evaluations can be used to document benefits and serve as feedback to identify improvements for individual services. Several customer surveys are likely to be useful for the bottom up approach, but surveys of the general population (e.g., all Arlington residents) also will be included, to assess program awareness and attitudinal information.

But the need to avoid double counting of benefits and to segment ACCS’ influence on mode choice from the influences of other factors, such as urban form and transit availability, will require a second type of “top down” assessment that would explore the combined effects of all ACCS services, coupled with infrastructure and land use initiatives. The top down assessment will estimate synergies and interactions among services on mode choice and facilitate identification of the relative influences of various factors on mode decisions. It also will, depending on the surveyed population, enable assessment of change among travelers who have not used ACCS’ services and among those who have used self-service services, such as the web and information kiosks, for which user follow-up is difficult or impossible.

Approach for Evaluating New Service Ideas

ACCS has defined as one of three objectives for this evaluation, to “identify new service opportunities to expand market share.” Thus, the plan details a service development process based on a customer-centric approach that brings the current and future customer into the transportation planning process to:

- 1) Document existing satisfaction with transportation services
- 2) Pinpoint unmet needs
- 3) Assess the feasibility and potential for new service ideas – concept testing
- 4) Explore different ways of packaging mobility choice in a manner that more closely aligns with how trip decisions are made beyond the conscious mind.

To this end, the plan presents a customer-centric new service development planning process based on:

1. Best Practices and Transferable Results: The plan includes a method and process to examine the service experience and offerings of other commuter service organizations to assess their feasibility and potential value for Arlington County. This process uses a broad net to identify possible service candidates, but targets services applied in communities with travel, land use, employment, and demographic characteristics similar to those of Arlington County. The method and process to examine the service experience and offerings of other commuter service organizations includes the following:



The designated ACCS Project Team and /or designated consultant team will identify a preliminary list of leading U.S. and international “TDM thinkers”- leading experts from both the consultant and client sides of the transportation industry. This list will be assembled in a “snowball” fashion where experts will be asked to recommend others “who are in the know. “ In addition, possible contacts will be identified through a comprehensive online search of TDM leaders, organizations, and communities. We envision over 100 potential leader contacts will be identified.

Once this list is finalized, ACCS will send out a formal letter inviting all of the identified experts and organizations to “nominate” the most innovative or advanced commuter service organizations / communities around the world with travel, land use, employment, and demographic characteristics similar to those of Arlington County. As an incentive for their active participation in this process, a copy of the final “Best Practices” report will be shared once all of this information is collected.

ACCS will then research the names of the appropriate contact person in the nominated commuter service organizations/communities. Once this master list is created, ACCS will send a direct appeal letter and possibly follow-up with a phone call to request any available case study information and related sample communication materials from each organization/community.

Once these materials are received by ACCS, all of the best practices and insights on transferable results will be organized and “packaged” in an easy to use *PowerPoint* presentation – “*Best Practices from Around The World & Lessons For Arlington County’s Transportation Program.*” This report will include key implications or lessons from communities that should be positioned as input into Arlington County’s long-term transportation planning. To this end, the final “*Best Practices*” report will ultimately be shared with Arlington County officials and transportation planners. ACCS will also provide copies of this final *PowerPoint* document to everyone who participated in this process – the initial top 100 experts and the localities that provided information.

If warranted, the final recommended step in this process is for ACCS to include Arlington County’s transportation program in this “*Best Practices*” report as a means to further advance Arlington County’s reputation as a world class urban community that is served by one of America’s most integrated transportation system. With the inclusion of Arlington County as a “case study,” this report could be sent to a broader list of constituents and opinion leaders both within and outside of the Arlington County – business leaders, economic development prospects, Federal Highway, as well

2. County-wide Resident Survey: The plan details how to conduct an Arlington County-wide resident study using a combination of telephone and on-line/mail research as a cost-effective way to assess and benchmark current transportation choice behavior, current needs and interests, and the degree in which needs are being served. The basic questions to answer: Are we currently meeting current customers’ needs, and if not, what needs are unfulfilled?

This survey is envisioned to include participation of several thousand Arlington County households. Every effort should be made to ensure participation across every identifiable resident segment including populations that might be missed by other outreach techniques, such as Hispanics and other key immigrant groups, seniors, the physically challenged, and high school and university/college students.

3. County-wide Employee Survey: This survey would be similar to the resident survey, but administered to commuters who work in Arlington County. The information collected would include data on employees’ mobility needs, expectations, and satisfaction, their awareness and use of non-SOV travel options for commuting, and their awareness and use of travel assistance services.

Due to difficulties in identifying the total population of employees, for purposes of sampling, ACCS would not be able to conduct a valid random sample survey of employees. Rather, the plan proposes that ACCS conduct a County-wide survey of employees of as many employers as are willing to assist with survey administration and supplement the results with existing statistical-level employee data on travel patterns and availability of employer-provided TDM services from a recent regional State of the Commute (SOC) survey conducted by the Metropolitan Washington Council of Governments.

4. County-wide Business/Employer Survey: The Arlington County Business/Employer Study is the recommended business complement to the Resident Survey. This study will target Arlington County employers to assess and benchmark the business community's perceptions of Arlington County's transportation system, the degree that mobility and access contribute to Arlington County's desirability and rating as a business location, and the level of satisfaction with how the County is currently serving business' and their employees' transportation needs. A wide range of employers throughout the County would be asked to participate in this on-line survey and the results would be weighted to ensure the survey closely reflects the make up of Arlington County's business community. This Study will provide one means of measuring the impact and outcomes of awareness of and participation in ATP's employer-based TDM education and programs.
5. Innovative and Ongoing Customer Input Panel: The plan outlines ways to leverage the benchmark study through the creation of an inexpensive, ongoing County-wide resident panel to aid in future service development brainstorming and concept testing. This panel will be recruited through the resident survey described above. The panel members, through their answers to the survey, can be segmented into specific types of service users, underserved audiences, or any other imaginable organization scheme (by residence area, by commute time, by existing transit line, etc.). As new service ideas are conceived to potentially meet the needs of different audience segments, they can be quickly tested, using focus groups or on-line surveys, among qualified members of each targeted segment. Input from the panel will help ACCS identify services that offer the greatest potential for producing the desired effects, assess the risks and benefits for each service, define promotion and implementation issues, and identify potential implementation partners.
6. Next-Generation Research: The plan includes ideas Arlington County could use to launch next-generation research new to the transportation planning industry. Cognitive scientists, using new brain scanning technology, have found that most of our decision-making takes place in an unconscious mode. Yet, most consumer research concentrates on conscious minds.

Understanding the roots of trip decisions and motivations lies beyond what respondents can always tell us – beyond the conscious minds. When people tell researchers why they do something, they can only recite rational thoughts, and these thoughts may be at odds with real motivations. To get beyond language and other distractions, the plan lays out steps to study trip mode decision- behavior using a blend of diary keeping and ethnographic or observational research. The key to this study will be in the careful selection of participants using the panel to recruit the ideal subjects.

These six approaches will serve as the foundation of major service development – how ACCS can better serve existing and new customers, and further expand market share non-SOV market share.

Section 6 Data Collection Needs, Sources, and Tools

Introduction and Overview

Section 5 of the plan described suggested approaches to assess ACCS' performance on a range of performance indicators. These approaches require ACCS to obtain and analyze data on awareness and use of, satisfaction with, and results following receipt of ACCS services. This section describes types of data that will be needed for these analyses and proposed sources of the data.

The data needed for ACCS' research and evaluation purposes fall into four basic categories that roughly parallel the performance indicator categories described in Section 4:

- Data on travel awareness, attitudes, and needs of clients and non-clients in various audience groups: residents, employees, visitors, employers, retail businesses/hotels, and property managers
- Data on customer/client participation in and use of ACCS services
- Data on customer/client satisfaction with ACCS services
- Data on actions taken by travelers after using ACCS services

A review of data currently collected by ACCS through its current service tracking systems indicates that most data fall into the second of these four categories, "input" and "participation" data; that is, what activities is ACCS expending (e.g., employer newsletter distribution count) and how many customers are using ACCS services. These efforts stop short, however, of measuring the reach of ACCS services, satisfaction of customers with the services used, the behavioral change resulting from outreach or service use, or the impacts of behavior change on community-level goals.

For these categories, ACCS needs new data collection tools, such as surveys of residents, employees, and business leaders who are existing or potential customers. Additionally, ACCS should continue to explore opportunities to utilize data collected by other organizations, such as the Metropolitan Washington Council of Governments and the Washington Metropolitan Area Transit Authority, that compile data on Arlington as part of regional evaluations, and from developers/employers and others required to develop site plans. These data collection opportunities also are noted in this section.

The key sources of ACCS data proposed for this plan include the following:

ACCS Service Tracking

- Employer Services participation tracking
- Residential Services participation tracking
- Commuter Store participation and transaction tracking
- CommuterDirect.com participation and transaction tracking
- CommuterPage.com and other websites server statistics
- Walk Arlington and Bike Arlington program statistics and website server statistics
- Customer Information Center participation and transaction tracking
- Carsharing service tracking

County-wide Benchmark and Follow-up Surveys

- Resident survey
- Business/Employee survey
- Employee survey
- Site plan building occupant survey



Customer Feedback Data Collection

- Visitor intercept and/or feedback card with follow-up survey
- Commuter Store customer feedback cards distributed at the time of Store transactions
- Commuter Store customer intercept surveys of customers
- Customer information line referral and satisfaction follow-up survey
- On-line follow-up survey of CommuterDirect.com customers
- On-line pop-up survey of random sample of CommuterPage.com customers

Other New Data Collection

- Relocating employer/employee survey
- Resident panel research

Several of these data collection tools were described in Section 5, but all of the tools are recapped or described below.

The plan also notes that ACCS could have opportunities to obtain useful data from other organizations, such as the Metropolitan Washington Council of Governments (Commuter Connections), WMATA, and other regional groups, that compile information on Arlington as part of regional evaluations, and from developers/employers and others required to develop site plans. ACCS also might be able to coordinate collection of new data for Arlington County with regional entities, such as COG, that are conducting region-wide research. A sample of past studies conducted outside ACCS includes:

- Arlington County CPHD – Arlington Commuting Census Report, 2000 Census Profile Arlington
- MWCOG – State of the Commute surveys, Metrochek employer survey, Guaranteed Ride Home survey, Commuter Connections Database Placement Survey, regional household travel survey
- WMATA – Ridership statistics, Public Perceptions of Transit, Development-Related Ridership Study

ACCS Service Tracking Data Collection

Most of the needed data on program participation are collected now by ACCS staff for their respective programs and services. These data include for example the numbers of employers contacted and employer clients, information requests received by the Commuter Information Center, types and value of transit fare transactions fulfilled by the Commuter Store, visitors to ACCS websites, and other data related to the use of and participation in each ACCS service.

The information gathered in these ongoing tracking processes are summarized in various monthly and quarterly reports, prepared by each ACCS service unit. These summaries are used primarily by ACCS staff as a check of progress in various activity areas. Data from these reports also are compiled in an ACCS Annual Report. The plan assumes that ACCS will continue to collect these data for program management purposes.

But some of the data also will be useful for estimating travel and air quality impacts of the services. As noted in Section 5, the estimation of impacts is generally performed by multiplying behavior change “factors” obtained through surveys of a sample of a targeted population, to the total population. Thus data on the size of a targeted population and the number of participants using a specific service will need to be captured through service tracking. The specific data tracked will vary by service and should be reviewed periodically to ensure that data necessary for program management and impact evaluation are being tracked but that time and resources are not expended on data that do not perform a useful function.



County-Wide Benchmark Surveys

As noted in Section 5, data on some performance indicators, such as travel awareness, attitudes, and needs of commuters and other travelers can be obtained only through direct contact with members of the targeted population. This will ensure that the views and needs of all targeted populations, both customers and non-customers, are included.

To collect these data, this plan proposes initial surveys of members of four audience or population groups to develop baseline measures for relevant performance indicators and periodic follow-up surveys at later times to determine changes in these measures. Three baseline surveys have been defined as high priority due to the size and importance of the audience: 1) Resident survey, 2) Employee survey, and 3) Business/employer/property manager survey. These surveys were briefly described in Section 5 and are recapped here. Additional details on the objective and methodologies for each survey also are provided in Appendix 4. A fourth survey, not described earlier, is a survey of occupants, either residential or commercial, of site plan buildings.

- **Resident Survey** – The Arlington County-wide resident survey will be conducted to assess current awareness, attitudes, expectations, and needs of Arlington County residents and the degree in which needs are being served. The basic questions to answer: Is the County meeting current customers' needs? If not, what needs are unfulfilled? And what role is ACCS playing in meeting information and travel service needs of residents? This survey also will be used to benchmark current travel patterns for commuting and some non-work travel.

Because the resident population is comprised of many different demographic and social groups, member of which might have very different travel needs, the survey will include participation across every identifiable resident segment including populations that might be missed by other outreach techniques, such as Hispanics, seniors, the physically challenged, and high school and university/college students.

The survey will be conducted through a combination of telephone and internet/mail survey methods. The telephone survey, conducted in June 2006, interviewed 500 residents County-wide to define statistical incidence of opinions, awareness, travel patterns, and other critical topics of interest to ACCS. To minimize the overall cost of the resident research, this small sample survey will be supplemented by an internet/mail survey completed by several thousand Arlington County residents. The internet/mail survey will provide more robust information about sub-group populations that might not be represented adequately in the telephone survey. It will not produce statistical results on its own, but in combination with the telephone survey, can be weighted to the full resident population.

- **Employee Survey** – The second of the three County-wide benchmark surveys would be administered to commuters who work in Arlington County. The information collect in the survey would be similar to that in the resident survey: data on employees' mobility needs, expectations, and satisfaction, their awareness and use of non-SOV travel options for commuting, and their awareness and use of travel assistance services.

As with the resident survey, ACCS wants to be able to draw valid conclusions from the survey across the entire employee population. But unlike the resident survey, it would extremely difficult to survey a random sample of employees because ACCS could not efficiently obtain names and telephone or postal contact information for either all employees or a random sample of employees. As a substitute, the plan recommends utilizing both existing statistical-level data from a recent regional State of the

Commute (SOC) survey and new data collected from employees through on-line/paper surveys at a large sample of worksites where employers are willing to assist with survey administration.

The 2004 SOC telephone survey of regional workers, conducted by the Metropolitan Washington Council of Governments, was a random survey. It included interviews with 552 Arlington County employees and offers statistically valid data, but on a limited set of topics of interest to ACCS, such as commute travel patterns and access to and use of employer-sponsored TDM services. It did not include questions about employees' travel attitudes and needs, awareness or use of ACCS' services, or many other key issues essential to ACCS in setting future direction.

Thus, ACCS will need to conduct additional employee research on these other topics specific to ACCS' research needs. This survey will be conducted at individual sites, as ACCS staff can obtain employers' cooperation, and will target a broad sample of both client and non-client sites. Because employers' cooperation will be needed, the new survey likely will not result in a statistically valid sample, in either the distribution of the employers (client, type, size, etc) or employee respondents. But as more sites are surveyed, the results will include a larger proportion of the potential population, thus the reliability of the results will improve over time.

- Business/Employer Survey – The Arlington County Business Employer Study is the recommended business complement to the resident and employee surveys. This study will target Arlington County employers to assess and benchmark the business community's perceptions of the County's transportation system, the degree that mobility and access contribute to Arlington County's desirability and rating as a business location, and the level of satisfaction with how the County is currently serving business' and their employees' transportation needs. The survey also will assess employers' awareness and use of and satisfaction with ACCS employer assistance services and the types and level of TDM services that employers are providing to employees at the worksite.

Arlington Economic Development (AED) has offered to help ACCS conduct this study through access to its comprehensive list of senior level corporate contacts across Arlington County. AED may also include some other pro-business questions on this survey project. An on-line methodology is recommended as the most cost-effective way to conduct this study, with telephone follow-up to non-respondents to increase participation. Alert letters from AED and County leaders also are recommended to generate wide-spread participation.

Specific participation quotas will be established and the final survey data will be weighted to ensure it accurately reflects the make up of Arlington County's business community – a proportional representation by business size and type based on actual distribution as suggested by available records.

This survey will provide one means of measuring the impact and outcomes of awareness of and participation in ATP's employer-based TDM education and programs. To this end, ACCS' ATP targeted business clients will be "coded" in order to view this audience as a separate group. ATP program contacts and participants, if different from the senior contact list provided by AED, may be included in this Study as well.

- Site Plan Building Occupant Survey – A fourth general population of interest to ACCS is the occupants of site plan buildings. Developers of these buildings are required as a condition of the development permitting process to implement travel services or facilities for occupants and to collect data to document trip generation rates, parking utilization, and other travel characteristics of occupants. The occupant population would overlap with either or both of the resident and employees populations, depending on whether the building is a commercial or residential building.

The data collected by developers of these buildings vary. Most provide some observed data on vehicle counts but do not at present conduct surveys of building occupants to assess non-observable characteristics, such as use of travel services or travel mode. In this research, ACCS would encourage or, if possible, require developers to assist with administration of building occupants. If the building is a commercial building, the survey would be similar to the employee survey described above, but would include additional questions related to facilities or services included in and around the building. If the building is a residential building, the survey could also include elements from the resident survey.

Traveler Customer Feedback Data Collection

An important component of the data collection plan is feedback from current travel customers through surveys or other direct means of contact. These feedback tools would collect the following primary data that assessed use of and satisfaction with the services and behavior change following use of the services:

- Sources of information/referral to ACCS services
- Satisfaction with features of existing services
- Desired improvements to existing services and desired new services
- Use of non-SOV travel options before and after obtaining services
- Influence of ACCS services relative to influence of other services used and other decision factors

The specific tools and methodologies for customer feedback efforts would vary by the type of service being evaluated and the characteristics of the customer audience. But the plan recommends ongoing input/feedback mechanisms using methods that reach either a random sample of customers or, if that is not practical to administer, the largest possible segment of non-random customers. We note that some customer feedback also will be obtained through the general resident and employee surveys that are described later in this section. Feedback for ATP employer clients will be collected through the employer/business leader survey and/or ATP employer client satisfaction surveys.

Specific recommendations are provided below for collecting feedback on five key ACCS services: visitors/tourists, Commuter Store, Customer Information Center, CommuterDirect.com, and Commuter-Page.com. The proposed feedback methods for these services are summarized below. Additional details on these methods are presented in Appendix 4. Feedback on other County services, such as transit service and bike/walk facilities, and information displays/kiosks also is assumed to be collected through other research efforts, such as the resident and employee surveys described elsewhere in this plan or special surveys targeted to potential users of the service.

Questionnaires would be tailored to the specific services being assessed, but identical or substantially similar questions should be used in all the feedback surveys to collect data on current and past travel, frequency of service use, information/referral sources, levels of satisfaction, and service influence. Using consistent wording and rating scales will enable cross-service comparisons and facilitate estimates of double-counting of impacts, when more than one service is used.

- Visitor Information Feedback Cards – An efficient method to obtain feedback from visitors would be through a brief (four to six question) postcard survey that asks about sources, types, and use of travel information and the travel modes used for trips within Arlington and to other regional destinations. Staff at hotels and other organizations that distribute tourist information would be asked to distribute the cards to guests/visitors to complete and hand back immediately or mail-back to ACCS. Because the cards would be distributed when information is provided but before travel takes place, this feed-

back might need to exclude questions about use of the information and its influence on travel. But the card also could solicit respondents for a follow-up telephone survey after their travel is completed.

- Visitor Intercept Surveys – Another option to collect visitor feedback would be to coordinate with the Arlington County Convention and Visitor Services to collect feedback from visitors at their main tourism office or at tourist destinations in Arlington County. This could include intercept surveys with phone or internet follow-up with visitors who are willing to provide contact information.
- Commuter Store Feedback Cards – This option would be similar to that described under visitor feedback; Store staff would distribute cards to customers at the time of the sale/transaction either for immediate completion and return or mail-back return. Because many Store customers are repeat users, these cards could include not only questions about the type of information/products obtained and the satisfaction with the Store's features, but also how the services or information have been used, for what trip purpose, and the influence of the services on travel choices.
- Intercept Surveys of Commuter Store Customers – ACCS also could conduct intercept surveys with a sample of Commuter Store customers. ACCS previously conducted intercept surveys to examine users' perceptions of the Stores. The new intercept surveys would ask about frequency of Store use, how customers heard about the store, trip purposes for information/services obtained, and satisfaction with the services received. Because the sample of respondents is likely to be small for this survey and it is important to keep the surveys very brief, this would not likely be used as a primary method to collect before/after travel mode data.
- Customer Information Center Telephone Inquiries – For this service, ACCS could ask callers a few brief questions during the course of the call about how they heard about the service, if they previously used the service, and how satisfied they were with the past information they received. To minimize the additional time for the calls, ACCS should limit the number of questions, but could ask callers if they would be willing to complete a follow-up questionnaire about use of the information, travel changes, and influence of information on changes. ACCS also should, as part of ongoing tracking, record the types of information requested and other information about the request, such as the purpose of the travel for which information is requested, and origin and destination of a specific trip to be made, which could be noted in the course of the call.
- CommuterDirect.com On-line Follow-up Survey – CommuterDirect.com users provide mail and/or email contact information to receive information or products, thus feedback for this service can be accomplished through an on-line follow-up survey sent to all individual users. CommuterDirect.com corporate sales would be assessed separately. The on-line survey offers a cost-effective method to collect in-depth data on users' satisfaction with the services/products received, how they used the services, travel changes made after receiving the services, and the role of the services in influencing/facilitating the changes.
- CommuterPage.com Pop-Up Survey – Unlike the other services described above, the services of CommuterPage.com are delivered anonymously, thus it would be impossible to conduct a follow-up survey of a random set of users. ACCS could, however, develop an on-line pop-up survey that asks a few brief questions of a random sample of customers who access the website (e.g., every 10th user). To collect data on more than three questions, ACCS could rotate questions so that all questions are asked, but not all are asked of all respondents. Questions that might be asked include, for example, how the user heard of the website, reason for seeking information at this time, home location (city and state), past use of the website, rating on ease of use of the site, desired information that is not available, etc. Users also could be asked if they were willing to participate in a follow-up survey.

Other New Data Collection

Finally, it is likely that ACCS will want or need to conduct occasional “special purpose” data collection to assess events or activities that do not occur on a periodic/regular schedule.

- **Relocating Employer/Employee Survey** – One service provided by ACCS is assistance to employers that are relocating to an Arlington County site. ATP staff provide guidance to employers and employees on travel needs of the employees and transportation services available at the site. One tool that would be useful to staff in this effort is a relocation survey to be administered to employees. The survey would share some characteristics with the employee survey described earlier in this section, but because these employees would not be working in Arlington County at the time of the survey, it would collect data primarily on travel patterns, needs, and interests. Some information could be collected on awareness of travel assistance services, if ACCS/ATP staff have provided these services at the old worksite. But a follow-up survey could be conducted at the new site following the move to assess the travel patterns at the new site and the use and value of the information and assistance provided during the move.
- **Resident Panel Research** – Section 5 outlined an option for an ongoing County-wide resident panel to aid in future service development brainstorming and concept testing. This panel will be recruited from among a broad segment of Arlington residents, who can be segmented into specific types of service users or sub-group populations (e.g., residence area, commute mode, etc.). In large transportation studies currently being conducted, SIR is experiencing 33% to 55% of invited respondents agreeing to serve in this ongoing, on-line capacity. The real power of the panel, however, is in its subsequent and highly targeted use.

The panel members, through their answers to the survey, can be segmented into specific types of service users, underserved audiences, or any other imaginable organization scheme (by residence area, by commute time, by existing transit line, etc.). As new service ideas are conceived to potentially meet the needs of different audience segments, they can be quickly tested, using focus groups or on-line surveys, among qualified members of each targeted segment. This works for both current customers and non-customers (hopefully future customers). With direct targeted input, ACCS can identify services that offer the greatest potential for producing the desired effects, assess the risks and benefits for each service, define promotion and implementation issues, and identify potential implementation partners.

Coordination with Other Organizations Outside ACCS on Data Collection

Finally, the plan recommends that ACCS continue to utilize data collected by other organizations, such as the Metropolitan Washington Council of Governments and the Washington Metropolitan Area Transit Authority, that compile data on Arlington as part of regional evaluations, and from developers and employers required to implement site plans for new buildings. ACCS already is using or exploring data from some of these studies, which provide data to supplement ACCS-collected data.

Additionally, ACCS should coordinate with these organizations on future opportunities to collect new data. ACCS can take maximum advantage of regional data collection opportunities through this multi-year evaluation plan, which schedules data collection such that ACCS might be able to piggy-back on other organizations’ efforts. ACCS could arrange discussions with WMATA, MWCOG, the Virginia Department of Rail and Public Transportation, and the immediately adjacent jurisdictions (Fairfax, Montgomery, Alexandria, and the District of Columbia) to explore opportunities to cooperate on planned or proposed data collection activities.



Two significant regional data collection efforts that are anticipated should be noted immediately because they could provide near-term opportunities for Arlington County to collect valuable travel data. First, MWCOCG will be conducting a regional household travel survey between November 2006 and January 2008. This travel diary survey will collect data on 600 households in Arlington County, but MWCOCG would permit Arlington County to purchase additional completed interviews if desired.

MWCOCG also is planning to conduct its third State of the Commute survey in February - April 2007, collecting 650 interviews with Arlington County residents. In this survey also, the County could choose to purchase additional completed interviews to increase the sample size. For both of these surveys, Arlington County can obtain survey data for independent analysis.

Phasing of Research and Frequency of Data Collection

For budgetary planning purposes, the research and evaluation data collection items described above have been organized around a two-tier implementation schedule that is assumed to extend over a two to three year period, with the length of the data collection period depending on the level of resources that ACCS can allocate to data collection in each year.

Research included in Tier 1 is considered the most critical and most time-sensitive; collection of basic needs and satisfaction information for each of the four groups of ACCS customer and potential customers. Tier 1 studies also will provide data needed to begin to assess service impacts. Research include in Tier 2 will deepen ACCS' understanding of customers and potential customers by collecting additional data on groups that might be under-represented in the initial Tier 1 work. A summary of key Tier 1 and Tier 2 research is shown below:

Tier 1:

Ongoing Service Tracking

- Continued tracking of participation in and use of all ACCS services

County-Wide Benchmark Surveys

- *Resident Survey* – General population survey of Arlington County residents – telephone and internet surveys to collect data on residents' awareness, perceptions/attitudes, travel patterns, travel changes, use of ACCS' services
- *Employee Survey* – Initial survey of non-random sample of employees at “willing” ACCS' client sites and site plan buildings that are willing to conduct employee survey to collect data on employees' travel patterns, travel changes, awareness/perceptions/attitudes, use of ACCS' services
- *Business/Employer Survey* – Internet/mail survey of Arlington County employers and client property managers at employer and property manager client sites and non-client sites to collect data on service awareness, transportation perceptions, and service use/satisfaction (ACCS clients)
- *Site Plan Building Occupant Survey* – Surveys of residents / employees in buildings subject to site plan requirements to identify travel patterns, awareness and use of building services.

Customer Feedback

- *Commuter Store Feedback Card* – Postcard survey of Commuters Store customers to collect data on mode use, previous behavior, satisfaction with services
- *Commuter Information Center* – Brief referral questions asked during telephone transactions

- *CommuterDirect.com* – On-line survey of CommuterDirect.com customers to collect data on mode use, previous behavior, satisfaction with services
- *CommuterPage.com* – Pop-up survey of CommuterPage.com user to identify use of and satisfaction with service

Other New Data Collection

- *Relocating Employee Survey* – Surveys of employees that work for employers that are relocating to Arlington County to collect data on employees’ travel patterns, needs, and interests.
- *MWCOG 2007 State of the Commute Survey* – Survey of commute travel and some travel awareness and service use data. ACCS/Arlington County could elect to increase sample size from the anticipated 600 completes in Arlington County.
- *MWCOG 2006-2007 Household Travel Survey* – Extensive travel diary survey of regional households. ACCS/Arlington County could elect to increase sample size from the anticipated 600 completes in Arlington County.

Tier 2:

Ongoing Service Tracking

- Continued tracking of participation in and use of all ACCS services

County-Wide Benchmark Surveys

- *Resident Survey Follow-up* – Follow-up of Tier 1 resident survey to complete respondent quotas in segments likely to be under-represented (e.g., seniors, 20-30, non-English speaking)
- *Resident Panel* – Establish resident panel for on-going research and testing of new service ideas
- *Employee Survey Follow-up* – Follow-up of Tier 1 survey of employees at additional, randomly-selected client employers in underrepresented employer types, sizes, and locations to enhance representativeness of employee data. Additional surveys of employees at non-client sites.
- *Business/Employer Survey Follow-up* – Follow-up of Tier 1 survey to complete respondent quotas (employer size and type)
- *Site Plan Building Occupant Survey* – Ongoing surveys of residents / employees in buildings subject to site plan requirements

Customer Feedback

- *Commuter Store Feedback Card* – Ongoing use of postcard survey of Commuter Store customers
- *Commuter Store Intercept Surveys* – Intercept survey of Commuters Store customers to collect data on mode use, previous behavior, satisfaction with services, frequency of Store use, how customers heard about the store, trip purposes for information/services obtained, and satisfaction with the services received.
- *Commuter Information Center* – Ongoing use of referral questions during telephone transaction
- *CommuterDirect.com* – Ongoing use of on-line survey of CommuterDirect.com customers
- *CommuterPage.com* – Ongoing use of pop-up survey of CommuterPage.com user
- *Visitor Information Feedback Cards or Intercept Surveys* – Intercept surveys or postcard survey distributed by hotels and tourism offices to collect data on sources, types, and use of travel information and travel modes used for local trips. Could be supplemented by a follow-up telephone of selected visitors after their travel is completed.

Other New Data Collection

- *Relocating Employee Survey* – Ongoing surveys of employees of relocating employers

Table 2 below lists each data collection activity and identifies if it is a Tier 1 or Tier 2 activity. Some activities, such as on-going tracking of ACCS service participation, extend across both Tier 1 and Tier 2.

Table 2 – Proposed Data Collection Phasing – Tier 1 and Tier 2

Data Collection Activity	Tier 1	Tier 2
Ongoing Service Tracking		
-- Employer Services participation tracking	X	X
-- Residential Services participation tracking	X	X
-- Commuter Store participation and transaction tracking	X	X
-- CommuterDirect.com participation and transaction tracking	X	X
-- CommuterPage.com server statistics	X	X
-- Walk Arlington program statistics and WalkArlington.com server statistics	X	X
-- Bike Arlington program statistics and BikeArlington.com server statistics	X	X
-- Customer Information Center participation and transaction tracking	X	X
-- Carsharing service tracking	X	X
Customer Feedback Data Collection		
-- Visitor intercept and/or feedback card with follow-up survey		X
-- Commuter Store feedback cards distributed at the time of transactions	X	X
-- Commuter Store intercept surveys of customers		X
-- Customer information center referral and satisfaction follow-up survey	X	X
-- On-line follow-up survey of CommuterDirect.com customers	X	X
-- On-line pop-up survey of random sample of CommuterPage.com customers	X	X
County-wide Benchmark and Follow-up Surveys		
-- Resident survey – telephone and internet	X	
-- Resident survey – under-represented group targeting		X
-- Employee survey – client sites	X	
-- Employee survey - non-client sites and underrepresented employer types		X
-- Business/Employer survey – initial internet	X	
-- Business/Employer survey – telephone follow-up with underrepresented groups		X
-- Site plan building occupant survey	X	X
Other New Data Collection		
-- Relocating employer/employee survey	X	X
-- Resident panel research		X
-- MWCOG 2007 State of the Commute (potential sample increase)	X	
-- MWCOG 2006-2007 Household Travel Survey (potential sample increase)	X	

Frequency of Data Collection

The Tier 1/Tier 2 phasing described above refers to the timing at which a data collection is first implemented. An equally important timing classification is the frequency of data collection – at what interval is a data collection activity repeated to assess change from the first survey. Table 3 shows a recommended frequency for the data collection activities described in this section. No frequencies are shown for the “other data collection” activities, because they are by definition occasional or as needed events.

Table 3 – Proposed Frequency of Data Collection

Data Collection Activity	Biennial / Triennial	Annual	Semi-annual	Quarterly / Monthly
Ongoing Service Tracking				
-- Employer Services participation tracking				X
-- Residential Services participation tracking				X
-- Commuter Store participation and transaction tracking				X
-- CommuterDirect.com participation/transaction tracking				X
-- CommuterPage.com server statistics				X
-- Walk Arlington and WalkArlington.com statistics				X
-- Bike Arlington and BikeArlington.com statistics				X
-- Customer Info Center participation/transaction tracking				X
-- Carsharing service tracking				X
Customer Feedback Data Collection				
-- Visitor intercept and/or feedback card with follow-up survey			X	
-- Commuter Store feedback cards distributed at transactions				X
-- Commuter Store intercept surveys of customers		X		
-- Customer information center referral and satisfaction survey				X
-- On-line follow-up survey of CommuterDirect.com customers			X	
-- On-line pop-up survey of CommuterPage.com customers			X	
County-wide Benchmark and Follow-up Surveys				
-- Resident survey – telephone and internet	X			
-- Employee survey – client sites	X			
-- Business/Employer survey – initial internet	X			
-- Site plan building occupant survey		X		



Section 7 Performance Reporting Format

The key to any successful research and evaluation effort is for useful and relevant information to be generated and reported in a timely manner to program staff and decision makers. ACCS staff prepare various weekly and monthly operational summaries used internally by ACCS staff to track on-going activities in the services for which they are responsible. ACCS also produces an Annual Report that is distributed to staff, program funders, and selected County decision-makers.

As noted in Section 6, both the operational summaries and the Annual Report primarily report on ACCS' staff activities and the participation of customer groups in ACCS services. This plan recommends additional reports be produced that document and present data on satisfaction of customers with the services used, the behavioral change resulting from outreach or service use, and the impacts of behavior change on community-level goals such as vehicle trips and VMT reduced.

Reporting Audiences

ACCS serves numerous internal and external/public audiences, all of which could be interested in knowing of some or all of ACCS' results. Internally, ACCS interacts with Arlington County planners and agencies such as transportation groups within the Arlington County Department of Environmental Services (DES), the Department of Community Planning, Housing, and Development (CPHD), Arlington Economic Development (AED), the County Managers Office, the Transportation Commission, and various transit and transportation advisory bodies.

Externally, ACCS has an interest in reporting its performance to funders and other regional and state organizations. These include, for example, the Virginia Department of Transportation and the Virginia Department of Rail and Public Transportation, the Northern Virginia Transportation Coordinating Commission, the Metropolitan Washington Council of Governments, and transportation and TDM program staff of neighboring jurisdictions, such as Fairfax County and the Cities of Alexandria and the District of Columbia. ACCS also has a responsibility to provide information on its results to its major customer groups, including residents, workers, and visitors who travel to or within the County and employers, business leaders, and retail businesses located in the County.

All of these groups could be potential audiences for ACCS performance information, although the specific information that would resonate with them could be different. For example, funders will want to know how their money was spent and were pre-established goals met. Transportation planners are likely to be most interested in the impacts of ACCS services on the operation of the transportation system, while AED is likely to care more about the impact of ACCS services of business' satisfaction with the County as a place to conduct business. Residents and employees are perhaps most likely to respond to information about ACCS' performance in offering a range of high quality travel options or its contribution to reducing traffic congestion and air pollution..

Reporting Tools

The most effective presentation format for conveying information also could be different for different audiences. Funders, planners, and technically-oriented staff likely will want a higher level of activity, operating, and technical details, while residents and businesses would be most likely to respond to more "media-friendly" highlights of success. These varied information needs and tolerances for details will suggest that one reporting size will not fit all. ACCS staff has identifies the following general categories of reporting tools that could be prepared and distributed to selected audiences:



- Service Level Reports
- Program Annual Report
- ACCS Report Card
- ACCS “Best Hits”
- State of Arlington Transportation
- ACCS “Road Show”

Service Level Reports – ACCS currently produces service-level reports primarily for internal, administrative purposes. They serve a useful function in facilitating day-to-day program management, as a check of program and service participation, and as an easy source for comparison of progress against program and service activity expectations. As at present, these reports would be specific to individual ACCS product/service lines. For example, the Commuter Stores would continue to prepare service reports for their activities and Employer Services would produce its service-level reports. Some data from these reports, such as total transit passes sold, might appear in other reports also, but in general the service-level reports would be continue to be internal documents.

Program Annual Report – In recent years, the ACCS Annual Report has been largely a compilation of the service-level reports prepared by the individual ACCS business units. ACCS is currently exploring how to reformat this report to pare down the activity data and lessen its level of detail. As envisioned, this revised report would be tailored to an expanded, but still primarily internal audience, including DES staff, County transportation decision-makers, and funders, which are expected to be a primary audience for this reporting tool. But new “outcomes” or results data would be added to provide the full pictures of ACCS’ performance:

- 1) ACCS activity inputs leading to ...
- 2) Customer participation, leading to ...
- 3) Behavioral change, leading to ...
- 4) Community-level impacts

The report would document research and evaluation activities conducted during the year, such as surveys or other data collection activities, and would present the key findings of the research and estimates of impacts calculated from ACCS data. Because the report would be produced annually but some data collection would occur biennially or triennially, in some years the report would estimates impacts based on the available data and anticipated trends compared to the past year, rather than actual measured impacts.

ACCS Report Card – This tool would be the first of several external reports, designed to announce ACCS’ performance to a wider, public audience. It is envisioned as a brief, media-friendly summary of ACCS performance highlights and ACCS “facts” that would be of general interest to a wide audience. For example, the Report Card might present the number of residents and employees served by ACCS, but also the percentage of residents who give high marks to ACCS’ services and overall resident ratings on Arlington’s transportation quality. The Report Card could present results as “grades” compared with goals for various performance indicators, or as simple facts and findings. The Report Card would be produced annually and would include highlights from major research efforts conducted during the year.

ACCS “Best Hits” – This tool would be a companion to the Report Card, in the sense that it would be produced for broad audience. But it would be produced more frequently, as notable performance results became available, and would focus on one topic or a limited set of topics. For example, a Best Hits might be prepared to report findings from the Resident Survey on links between availability and quality of transportation options and residents’ perceptions of quality of life in Arlington County. It would be the print

equivalent of “sound bites” that could be easily included in the Citizen or other print media, posted on ACCS’ and Arlington County websites, and distributed to other media outlets. By its frequency (perhaps three or four times per year), it would offer enhanced opportunities for ACCS to communicate with its customer base.

State of Arlington Transportation – A third suggested “general audience” document would be a periodic “State of Arlington Transportation” report. This report is proposed as a joint effort of ACCS and other DES units and would report on a range of transportation County characteristics and services, including for example, transit, parking, roads and congestion levels, pedestrian and bicycling opportunities, and other infrastructure, in addition to presentation of ACCS services and results. It could serve as tool to showcase ACCS’ success and reinforce ACCS’ role in the larger transportation system. This report likely would be produced less frequently than some of the other tools, perhaps biennially or triennially. The schedule might correspond with the schedule for major data collection efforts, such as County-wide surveys of residents and employees or other significant research efforts that would not be conducted each year.

ACCS Road Show – Finally, ACCS could develop a series of pre-packaged presentations that could be used by ACCS staff to present results tailored to various audiences. For example, ACCS might prepare a “community or civic association” presentation, which would focus on the services provided to County residents and the impacts of those services on community quality of life. A related presentation could be prepared for use with businesses or employers that would highlight ACCS’ business-related services and how these services benefit businesses in the County. More technically-oriented presentations could be tailored to inform transportation planners and TDM audiences of how ACCS’ activities contribute to smooth operation of the transportation system and reduction of local and regional traffic congestion. By tailoring the presentations to specific audiences, ACCS can focus on just the results that would be relevant to the particular audience, maximizing the value of the presentation.

Key Reporting Principles

These tools are suggested as options for conveying ACCS’ performance results to a variety of audiences. ACCS staff believe that it is important to develop new opportunities to announce its successes more broadly than in the past, but regardless of the audience or tool, ACCS has defined several reporting principles it will follow. They include the following:

- **Ensure transparency in reporting results** – To ensure and enhance ACCS’ credibility, report both positive and negative results. Report both goals that were met and those that were not. When results were not as positive as hoped, present proposed solutions to fix the problems or deficits.
- **Report outcomes in addition to inputs** – Continue to report on ACCS’ activities and participation in ACCS services, but expand the measurement and reporting that document the “outcomes” or results of activities. How did ACCS work improve the transportation system in the County? How did it improve the lives of Arlington residents? In short, document the benefits or impacts produced by ACCS’ work.
- **Focus key messages by audience** – ACCS’ “success” will mean different things to different audiences, depending on their needs and expectations of ACCS. ACCS needs to document results that will be relevant to specific audiences and package the results in formats that will be noticed and resonate with those groups. This will require using various tools and messages that are specific to the audiences to which information is to be directed.



- Track impressions and reactions to reported information to key audiences and assess impact of reporting process – As a companion to the principle of focusing messages, ACCS will assess the reactions of audiences to the information provided to them. Are the audiences interested? Are they understanding the messages and deriving value from them? And most important, does information on ACCS' results influence audiences in a positive way?
- Maintain a publicly-available source for program results - Last, ACCS will develop and maintain a source for internal and external audiences to seek out and obtain data on ACCS' program results. ACCS anticipates this will take the form of a website accessible to the public. ACCS might reserve some sections for internal use or for selected users, such as planners and organization users, but the site would serve as an ongoing repository for past and current research and evaluation results.

Recommended Evaluation Responsibilities

The primary responsibility for preparing reporting tools would reside with ACCS staff, but ACCS likely would use contractors to assist in the preparation of the document that would be directed primarily to audiences outside ACCS and DES.



Appendices

Appendix 1 – Past Research Studies of ACCS Services and/or Other Transportation Services in Arlington County

Appendix 2 – ACCS Staff and Stakeholder Interviews, Summary of Key Discussion Topics and Themes

Appendix 3 – Basic Touch Points Audits

Appendix 4 – Basic Method for Calculating Service Impacts

Appendix 5 – Objectives and Methodology of Resident Survey, Employee Survey, Employer/Business Survey, and Customer Feedback Surveys/Tools

Appendix 1 – Past Research Studies of ACCS Services and/or Other Transportation Services in Arlington County

Arlington Pilot Carshare Program

Prepared by: Commuter Services

Methodology or Type of Report: ACCS and the two Carshare companies met on a quarterly basis to monitor the progress of the Program, reviewing general performance numbers that included growth in membership, usage and trends.

Purpose or Content of Report: Carsharing is a self-service, short-term car-rental service that has been available in the metropolitan Washington region since 2001. Carsharing complements Arlington’s urban-village neighborhoods by providing car service on demand without the hassles of car ownership. Rental increments can be as small as one-half hour, includes gas, insurance etc. in one inclusive rate, and with decentralized vehicle placement can deliver advantages of both vehicle ownership and rental car/cab use.

Arlington County Commuter Assistance Program Research Plan 2000-2002

Prepared by: Pulsar Advertising

Methodology or Type of Report: Market segmentation study – 1) psychographic market segmentation and 2) benefit or needs-based segmentation

Purpose or Content of Report: To identify market segments that represent the greatest opportunity to increase transit ridership for Arlington County Metrobus. The ultimate goal is to improve Metrobus’ competitive position, increase its transportation market share both in frequency of current riders and attracting new riders, help to allocate resources to the optimal markets, and enhance public transportation’s reputation in order to increase support for public funding.

Arlington County Commuter Services FY 2005 Annual Report

Prepared by: ACCS

Methodology or Type of Report: Annual Report

Purpose or Content of Report: Assessing the progress toward the mission of ACCS. The stated mission is to provide the most accurate, timely and useful information and services to residents, workers, visitors and businesses in Arlington, with a view to help increase the use of public transportation and alternatives to driving alone.

Arlington Transportation Partners FY 2005 Annual Report

Prepared by: ATP

Methodology or Type of Report: Annual report

Purpose or Content of Report: ATP is a division of Arlington County Commuter Services and provides transportation benefit implementation services to businesses, residential communities, and hotels in the county. The annual report measures performance of the three programs: Employer Services, Residential Services, and Visitor Services.

Building Community One Step At a Time

Prepared by: Chair of Arlington County Board

Methodology or Type of Report: Report

Purpose or Content of Report: Anecdotal discourse on Arlington’s suitability for walkers and report on first “Walkabout” event.

DirectionFinder Survey – Arlington County 2004

Prepared by: ETC Institute DirectionFinder

Methodology or Type of Report: A seven-page survey was mailed to a random sample of 3,000 households in Arlington County in June 2004. 719 completed it by phone and 481 returned it by mail.

Purpose or Content of Report: A comprehensive customer satisfaction survey for Arlington County, to assess citizen satisfaction with the quality of a wide range of county services including: police, fire, public transportation, trash collection, libraries, code enforcement, street maintenance, communication, and others.

FHWA TOP Survey Virginia

Prepared by: Northwest Research Group

Methodology or Type of Report: Telephone survey completed with 1,250 users of the state’s transportation system

Purpose or Content of Report: Survey to determine needs and expectations of travelers, the extent to which the existing transportation system meets those needs, establish benchmark data, and identify priorities for system improvement.

Implementing Demand Strategies into County Master Transportation Plan

Prepared by: MTP Plenary Group

Methodology or Type of Report: Presentation for goal process

Purpose or Content of Report: Lays out Arlington County’s TDM plan and future goals, elements of the county’s TDM, and issues having an impact on the management of transportation. This is a very brief presentation.

Impressions of Arlington Transportation Partners Newsletter

Prepared by: WB&A Market Research

Methodology or Type of Report: Telephone survey with 59 Arlington County companies

Purpose or Content of Report: Study to determine, among employers who receive the newsletter, their impressions of and suggestions to improve the *Solutions* newsletter.

Information to Help Guide Commuter Service Managers

Prepared by: Arlington PRAT

Methodology or Type of Report: Demographic survey – mostly Census Bureau data

Purpose or Content of Report: The purpose is to provide accurate and timely planning data and research to a broad array of decision-makers, including County staff, citizens, businesses, non-profits, students and others.

Performance of Arlington Metrobus in FY99 for FY00 marketing

Prepared by: Pulsar Advertising

Methodology or Type of Report: Telephone surveys were used to mirror an earlier survey (from the previous year) conducted with Arlington Metrobus trial riders.

Purpose or Content of Report: The purpose was to refine and improve the Commuter Assistance Program's marketing to riders and potential riders of Metrobus, by tracking usage, awareness, entry point performance (such as the web site and Commuter Stores) and ridership patterns.

Pike Ride Intercept Study

Prepared by: WB&A Market Research

Methodology or Type of Report: Intercept (on the bus) surveys resulting in 228 completes

Purpose or Content of Report: This survey developed a rider profile, assessed rider knowledge of Pike Ride services and access points, and measured rider satisfaction with the service.

Public Perceptions of Transit (three different studies from 11/04 – 9/05)

Prepared by: WB&A Market Research

Methodology or Type of Report: Quantitative telephone research

Purpose or Content of Report: Psychographic and behavioral study of Washington D.C. area residents to determine their behaviors and attitudes toward area transportation, in particular towards Metrobus and Metrorail

TRIP Research Report Highlights

Prepared by: Shugoll Research

Methodology or Type of Report: 500 telephone interviews

Purpose or Content of Report: To determine benchmarks, commuting patterns, attitudes and awareness regarding transportation options, and test motivating messages. To identify successes and challenges

Update to Development Related Ridership Survey

Prepared by: Parsons Brinkerhoff and Diversity Services of DC, Inc.

Methodology or Type of Report: Paper survey to employees of Washington Metropolitan Area Employers, as well as visitor intercepts

Purpose or Content of Report: To provide input to a database of travel characteristics at existing office, residential, retail, hotel and entertainment properties. To provide information to Metro area travel planners about the relationship between land use and transit.



Appendix 2 – ACCS Staff and Stakeholder Interviews

Summary of Key Discussion Topics and Themes

Overview of Interview Topics

A major expectation of the ACCS research and evaluation plan is that it will collect information that will be useful for future decision-making by staff and various non-staff stakeholder audiences, including County policy-makers and program funders, among others.

Therefore, the consultants interviewed all ACCS staff to identify:

- Program functions and activities
- Objectives of each service/function
- ACCS' customer groups and staff's current understanding of customers' needs
- ACCS-customer touch points
- Past and present data collection and analysis efforts focused on performance assessment
- Qualitative assessment of program strengths and weaknesses
- Need and opportunities for future data collection and analysis

To develop a clearer understanding of the expectations that County policy-makers hold for ACCS, the consultants also interviewed key County staff responsible for programs that involve, rely on, or intersect with transportation services and infrastructure. These departments and organizations included: Transportation Department, Traffic Engineering, Transportation Planning, Transit Services, County Manager's Office, Public Affairs, Arlington Economic Development, and Community Planning, Housing, and Development.

The policy-maker/stakeholder interviews addressed the following issues:

Arlington transportation strategic focus & objectives:

- Transportation issues and opportunities in Arlington County
- Vision of County transportation functions, objectives
- Expectations of traveling public and businesses/commercial interests and the County's success in meeting transportation needs
- Role of County's development pattern in shaping transportation priorities
- Role of transit and other "alternative" modes in overall transportation system

Transportation performance & accountability:

- Relevant measures / indicators for assessing transportation system success
- County's understanding of performance - where does the County lack data / results
- Measurement of effects of land use vs transportation policies and services
- Transportation agencies/organizations with operational or policy role – position, resources, coordination, contribution to County transportation success

Perceptions and expectations of ACCS:

- Value of ACCS programs and services to overall transportation picture
- Appropriate / desired ACCS functions and expected / desired ACCS results
- Degree of ACCS accountability – performance measurement
- ACCS role relative to transit operators
- Role of ACCS in development and business support activities
- Opportunities for ACCS to improve performance / be more responsive to customers

Overall Theme

The interviews illustrated a unified view of the role of transportation organizations in the County. That role can be summarized as:

- **What:** Maximize travel choice and encourage use of all travel options
- **Why:** The County can't build any new roads, so must have a way to "fit it all in," i.e., complete Streets and using the transportation and land use infrastructure to its best advantage. The County's focus now has to be on what it can control – not new roads, but rather maximizing travel choice/options to continue the growth and urban vitality of the County.
- **How:** The County must elevate travel choice and behavior as a tool to keep the region moving (keep the economy working, keep the region competitive, make it always accessible, etc). The County must show a current program impact using traditional TDM output measures and customer satisfaction measures and identify the direct link between transportation programs (and their related benefits) to the overall quality of life in Arlington County – identify what residents like about transportation services, what's missing, and what they would use if offered?
- **When:** The transportation needs are both immediate and continuing and must be addressed in both short and long-term planning.

Background on the Metro Region and Arlington County

- **Key Transportation Issues in the Region** – Interviewees emphasized the large size and population of the region – 5 million people and 2.5 million jobs. This necessitates substantial travel to move large numbers of people within and through the area. Much of the region is poorly built – many people do not have transportation choices due to poorly integrated land use. The region has "engineered choice out of the equation."
- **Arlington is Different From the Rest of the Region** – Many interviewees noted that Arlington County is different from the rest of the region in several respects. Although small in land area, the County offers a mix of urban benefits unique to the Washington region, outside of the District of Columbia. The County offers access to: 1 million jobs, a popular airport, numerous colleges, and many restaurants and shopping services. Additionally, for 30 years, County leaders have been unified in creating a planning vision for Arlington that has made the County largely self-contained. Residents can live, work, shop, and pursue recreation opportunities without leaving the County.

Demographic Issues Related to Needs and Desire for Transportation Services

Many interviewees cited demographic issues that could or should influence County transportation planning and services. Key issues identified through the interview process include:

- **Population Diversity** – A recurring theme related to information dissemination was the broad cultural, economic, and “life phase” diversity of County residents. The County is home to residents of many nationalities, young and mature residents, and high income and low income households. The County also includes long-time residents who remember Arlington as a “neighborhood” environment outside the city, as well as a large contingent of young residents who select Arlington County for its close-in location and urban amenities.
- **Population Turnover** – Nearly all interviewees also noted the high turnover among County residents. Every five years the County turns over 50% of its population base – 100,000 residents leave the County, and 100,000 new residents arrive. Interviewees cited the need for continued and broad outreach, using multiple media, to ensure high levels of understanding of the links between transportation and community goals and a high awareness of transportation services and options. The fundamental job of providing information and education on the transportation options available and how to use them also must be significant and ongoing.
- **Two Resident Populations Might Hold Two Visions** – The population mix of the County has changed over the years. The current mix includes a substantial component of Urban Village residents – young professionals who see Arlington as an urban location with urban amenities. But the County also is home to a traditional single family suburban population who moved to Arlington when it was much more of a small town environment. This raises the issue: does everyone in Arlington believe the “Urban Village” concept improves Arlington or do some see the increasing densification of the County as a loss?
- **Different Populations Across Different County Neighborhoods** – Arlington’s diverse population is not evenly spread across the region. Rather, the County has many different sub-regions or neighborhoods, with potentially different transportation needs. For example, North Arlington is upscale traditional suburban neighborhood. A large portion of the County land use map shows “pale yellow,” representing single family housing density. Compare this to Potomac Yard - two million square feet of development coming on line now. Do all these populations want TDM services? Do they all want transit? How many residents are supportive of continuing to urbanize? How many people understand the concept behind Arlington County? Is there a disconnect between Urban Village and “I want to park in front of Starbucks.”
- **Skewed Public Representation** – Interviewers said that more than 100 citizen groups exist in the County, offering extensive opportunities to hear from residents and interest groups. But interviewees said that the groups are dominated by one population segment – white, upper-middle income homeowners. They focus the debate and conversation on issues of importance only to themselves. How can the County reach residents who are less often involved – for example, young professionals, residents who rent in the County, and immigrants, who might have language difficulties. These residents also need to be encouraged to become involved.
- **High Price of Housing in the County** – Rising real estate prices could drive lower income households out of Arlington. This will increase the need for transportation services to bring displaced workers into the county.

- **Underserved and Underrepresented Populations:** The County is now recognizing a need to explore needs of non-commute travel populations, such as youth, seniors, and populations such as immigrants, young professionals, “transient” populations, and students, that have not been well-represented on the advisory boards. Are any of these groups underserved by Arlington’s multimodal system? The growth in minority population segments is creating new customer segments. More than 40% of Arlington’s residents are Hispanic/Latino, African-American, Asian or multi-racial. More than one-quarter of residents were born outside the United States. Arlington County public school children speak more than 60 different languages. Is language a barrier in understanding and identifying transportation needs and in providing relevant and meaningful transportation services?

Topics Related to Arlington County Planning and Transportation System

- **Growth and Change in Land Use** – The County now has 11 Metro stations in 17-25 square mile area (w/o airport and Pentagon). The 1961 Land Use Plan took this area “from pawn shops to 20 stories.” Now the County must ask - what’s next? What is the plan to make and keep the community world-class?
- **Decision Makers’ View of Role of Transportation in Creating a Vibrant and Attractive Arlington** – Interviewees presented a clear and consistent vision of the role transportation plays in making the County a desirable destination. They believe transportation is an integral part of planning and community development. Transportation is the invisible hand that provides and ensures mobility and access in a region choked in gridlock. Thus, Arlington County residents spend time doing things – not getting there. They believe residents and businesses “expect” a transportation system that allows them to get around without a car.
- **Transportation Systems Contribute to the Quality of Life** – The County offers a vast array of transportation infrastructure and services, layered over a dense, mixed-use land development pattern. This enables residents and employees to access County destinations easily without a car and contributes to the image of the County as an exciting location with the advantages of an urban setting. Indeed, several interviewees suggested Arlington residents “expect” a transportation system that allows them a high level of personal mobility. This, in fact, may be part of Arlington county’s regional positioning - Getting Around Arlington County Is Easy. Mobility and Access are driving attributes of quality of life.
- **County as a Transportation Hub** – Numerous interviewees cited the volume of travel in the County and the inability to expand the road infrastructure as a significant current and future transportation challenge. The County is both a significant generator of trips (residential and tourist travel) and attractor (employment travel). Further, the transportation infrastructure of Arlington County serves through-travelers, destined for locations in Washington, DC or other jurisdictions adjacent to the County. The large volume of travel within and through the County places great strains on the infrastructure, emphasizing the need for transportation services to encourage high use of non-SOV travel modes. This pressure will continue to grow as the significant new housing and commercial development now in the pipeline is constructed.
- **Sub-Regional Planning Point of Reference:** A related sub-regional issue centered on the appropriate transportation planning scope. Does a narrow county-level view work or must the County plan as a component of a larger regional or sub-regional system? Does the County need to establish and maintain more inter-jurisdictional cooperation with neighboring jurisdictions? The “We are Arlington, we set the standard” mantra suggests that the County expects to be out in front of the region. Does it also mean the County is too advanced for others and will not help them “see?”

- Resource Limitations Combined with Loaded Development Pipeline – A substantial amount of new development has been approved and is coming soon. But the majority of Arlington County’s available land is already developed. The option to simply expand the road infrastructure as a means of expanding the capacity of the existing transportation system is off the table. There is nothing that can be done except incorporate the traffic and people that will come with millions of square feet that will break ground and come on line over the next several years. The current multi-modal system must just get better – move even more people, with little new infrastructure investment.
- Trip Patterns Amenable to Non-SOV Modes – Some interviewees noted that trips made by Arlington County residents tend to be shorter than the regional average. This suggests non-SOV modes might be easier to use than would be the case in some other parts of the region. The density and concentrations of land uses also could make it easier for residents to walk or bike or use transit for errand trips. On the other hand, short trips would eliminate a key benefit for use of shared modes, travel cost saving. Without this potential benefit, convenience has to be the leading benefit.

Topics Related to Transportation Customers

- Multiple Audiences for Transportation Services – County agency decision-makers recognize there are multiple customer markets that have distinct transportation needs. These markets include:
 1. Residents - want travel choices, community access, safe, non-polluting & stress-free commuting
 2. Employers – want a diverse, dependable system to attract and retain skilled workforce
 3. Visitors – want to get to hotels and tourist sites
 4. Retail – i.e., Pentagon City – want access to good customer base and ease of access for customers
 5. Pass-through commuters/travelers – want easy travel through Arlington
- Needs of Current and Future Customers – Interviewees felt they did not have a good understanding of who the County’s transportation system served today, who they will be or should be serving in the future, or what these customer groups wanted and needed. This was particularly the case for non-commute travel populations (youth, seniors, physically challenged) and populations that were not well-represented on the advisory boards (immigrants, young professionals, “transient” populations, students).

Interviewees did not see a plan in place to identify them and understand what transportation services they need today or will need in the future. They felt the County should be soliciting input from all customer groups, even to the extent of going to senior and youth centers to find out what they need. The impression of interviewees was that a more thorough understanding could lead to a program that fulfilled its potential and utilized all opportunities to meet the needs of travelers in the most efficient way. Interviewees believed this information also could help focus ACCS’ services to solidify existing user populations and to attract new customers.

- Employers and Property Managers as ACCS Customers – Although ACCS’ primary customer groups consist of travelers (residents, employees, visitors, etc.), several interviewees noted the importance of employers and property managers as ACCS “wholesale” customers. By serving as bulk distribution outlets for information materials, these groups multiply ACCS’ outreach efforts. And by sponsoring the cost of non-SOV travel incentives for employees and residents and implementing other TDM services at the worksite, they provide persuasive motivators that can influence travelers mode choice decisions.

- **Customer Satisfaction** – The ACCS staff and stakeholder interviews illustrated a concern of many unknowns, including key information or “inputs” on customer satisfaction performance measures. The best assessment of overall customer satisfaction includes both direct and indirect measures. Direct measures include the classic questions that probe satisfaction such as “how satisfied are you, on a 1-7 scale, with xyz service.” Indirect measures of customer satisfaction further explore “relationship strength.” Indirect customer satisfaction measures include questions such as “intent to use xyz service again” and “how much one recommends xyz service to others.”

But customer satisfaction measurement does not stop here. The real power of a customer-centric orientation comes from identifying and measuring the key performance drivers that impact these direct and indirect satisfaction measures. This comes from carefully identifying, understanding, and tracking key service attributes such as “being on time,” “cleanliness of the bus,” “feeling of security,” etc. The identification of this “linkage” between overall satisfaction and key attribute drivers provides the roadmap for achieving meaningful improvements in overall customer satisfaction. When it comes to a review of ACCS’ existing performance data, however, there are gaps in this type of information – direct and indirect satisfaction measures – as well as key attribute performance drivers.

Topics Related to Expectations of ACCS and ACCS’ Performance Measurement

- **Modest Understanding of ACCS’ Activities** – All of the interviewees were aware of ACCS as an organization, but few could cite details about ACCS’ work. Each had an understanding of the specific programs with which they interacted, e.g., AED staff knew about the employer outreach services, but were not aware of some other ACCS services. This limited “need to know” situation was similar for other interviewees.
- **High Acceptance of ACCS as Valued Resource and Partner in Making Transportation Work** – Despite this modest awareness of the specifics of ACCS programs, interviewees were unified in their view that ACCS was a valued resource making transportation work and thus supporting various County missions (access, mobility, economic development, community planning, citizen satisfaction, etc.). ACCS was viewed as a necessary part of the complete transportation-land use package.
- **Realistic Expectations of ACCS’ Potential Influence** – Interviewees had realistic expectations for the degree to which ACCS could influence change in community-level goals. They were clear that success for transportation also depended on a dense urban form, inner/core location within the region, extensive road and transit infrastructure, and a pedestrian and bicycle-friendly environment. Interviewees believed it would be difficult to separate the influences of these various components and did not seem to find it necessary for ACCS to document its portion of the benefit. They did believe it would be helpful for ACCS to document these results for potential funders, such as VDRPT.
- **ACCS Focus on Encouraging Use of Non-SOV Modes** – Most interviewees said their primary expectation of ACCS was for the program to educate and inform Arlington County travelers about travel options and to encourage use of non-SOV modes. In general, interviewees believed ACCS was effective, although this view was primarily drawn from their knowledge of participation levels in ACCS’ program, rather than from data documenting either awareness levels or mode change.
- **ACCS’ Expectation of its Performance** – ACCS staff cited the following items as internal indicators of performance:
 1. Show impact of program
 2. Better input moving forward

3. Package and sell whole program – build awareness and understanding of what it is about – reducing trips
 4. Lead the industry – peer competition
 5. Line up more sustained funding
 6. Get facts for ATP use in outreach/selling efforts
 7. Access residents – are we meeting quality of life expectations?
- Summary of Current ACCS Output Indicators – Currently all ACCS measures of success are focused on outputs, not outcomes. The following is an initial list to make this point. This is not a complete list under each program. In fact, we need to identify additional “current output measures.”
 - Business accounts success – numbers of: brochures, fairs/events, companies, newsletters, contacts; also computed market share
 - Residential accounts success – number of property managers/buildings participating, newsletters and brochures distributed
 - Hotel success: – numbers of: brochures, fairs/events, companies, contacts; also computed market share
 - Communications success – awareness, intent, recommend, use next, when?
 - ART/Transit Success – ridership counts, security, service reliability, personal benefits
 - Commuter Stores/Mobile Center success – monthly sales by type of product, number of customers using stores
 - Call Center success – number of requests fulfilled, repeat customers
 - CommuterDirect.com success – website hits, requests fulfilled, repeat customers
 - Bike/walk programs – miles of bike/ped facilities, enhanced bike/ped safety, more people walking at lunch/walking for errand trips, requests for bike maps,
 - Miscellaneous success indicators – car share users, site plan results, parking utilization, need/demand for parking, auto ownership rates, mode split
 - Beyond Outputs – Measuring Outcomes – The Bigger Impact of Transportation and TDM – Interviewees cited several performance indicators they felt could be related to measuring success of the transportation system, and, indirectly, TDM services. Interviewees felt some of these measures could be indicators of ACCS’ performance, but primarily felt they reflected success of the transportation system as a whole.
 - Citizen Satisfaction correlated to trip reduction and mobility options
 - Contribution to economic development – providing a competitive advantage in attracting and retaining companies
 - Sick days – county workers per 100,000
 - Parking utilization
 - Auto occupancy
 - Carshare use
 - Reduced noise pollution
 - Fewer auto accidents per 100,000
 - Lower car insurance rates per 100,000
 - Sustainability
 - Competitive rankings in economic development
 - Customer benefits – range of transportation options

Topics Related to ACCS Outreach, Communication, and Services

- **ACCS Overall Positioning** – Interviewees were not clear on how ACCS should be positioned over time. Should ACCS be the “Voice of the Consumer” – existing and future travelers/commuters. Should ACCS be helping with developing transit/new services/features like bus shelters. What is the right role or roles? What support functions should ACCS play in other Arlington transportation programs?
- **ACCS’ Role in Transit Promotion** – Specific questions were raised about the role of ACCS in supporting transit ridership. ACCS had a strong transit focus in the early years, but by taking on new promotional activities, this role has become less pronounced. Some interviewees felt that transit was a primary non-SOV travel mode and needed additional ACCS attention. They were concerned that the shift in focus from transit to other modes had diluted and perhaps diminished ACCS’ results. However, other interviewees felt ACCS should not focus primarily on transit. Rather, they believed it was important to spread information about all travel options, including vanpool and carpool, bike, walk, and telecommute, in part due to current overcrowding of transit service.
- **Promotional and Outreach/Publication Impact Evidence** – More information needs to be gathered on the impacts of promotional and other information outreach efforts. Which efforts are attracting attention and which are motivating behavior change? For example, the Smart Trip promotion included 1,250 free Metro cards being distributed in apartments – in 25 multi-family apartment building. But ACCS does not have data to show the impact – how many cards were redeemed and did trial use of the services result in long-term conversions? Similarly, ACCS has no data documenting who recalls receiving ATP publications and how much they read them. Further, what impact does it have on behavior?
- **Need for Brand Identification** – Interviewees did not feel that ACCS or Arlington County Transportation had established itself as a brand. They did not recognize any fully articulated benefits, positioning, graphic unification iconology, etc. (see ART, Commuter.com, ATP, etc.). They sensed that customers could be confused about who provided travel information services.
- **Opportunities for Additional Customer Feedback** – Several interviewees felt ACCS should capitalize on additional opportunities to obtain customer feedback. What do employers think about ATP programs? What feedback do transit riders have? Can ACCS find easy and efficient methods to solicit customers’ comments on an ongoing basis?
- **General vs Specific Promotion** – A related issue focused on the need to conduct both general travel education promotion and specific mode/service information dissemination. Some interviewees felt Arlington County did not conduct enough general education outreach, focusing too often on targeted promotions.
- **Communication Channels** – Interviewees were united in their opinion that education and communication were important ACCS functions. Part of Arlington County’s transportation services must include “disseminating information.” But they felt there was not a single method to reach all County residents. The internet was certainly a channel with great ease and potential, but there is still a digital divide in the County.
- **Opportunities to Reach Customers** – Interviewees cited various opportunities to communicate with residential customers. These included: County newsletter and websites, working through residential associations, outreach through the Department of Human Services Outreach Centers, working with senior centers, and direct mail.

Appendix 3 – Touch Points Audits

ACCS Master Touch Point Experience – Travelers & Residents

ACCS Master Touch Point Experience – Institutional Partners

ACCS Master Touch Point Experience – Web Site Properties

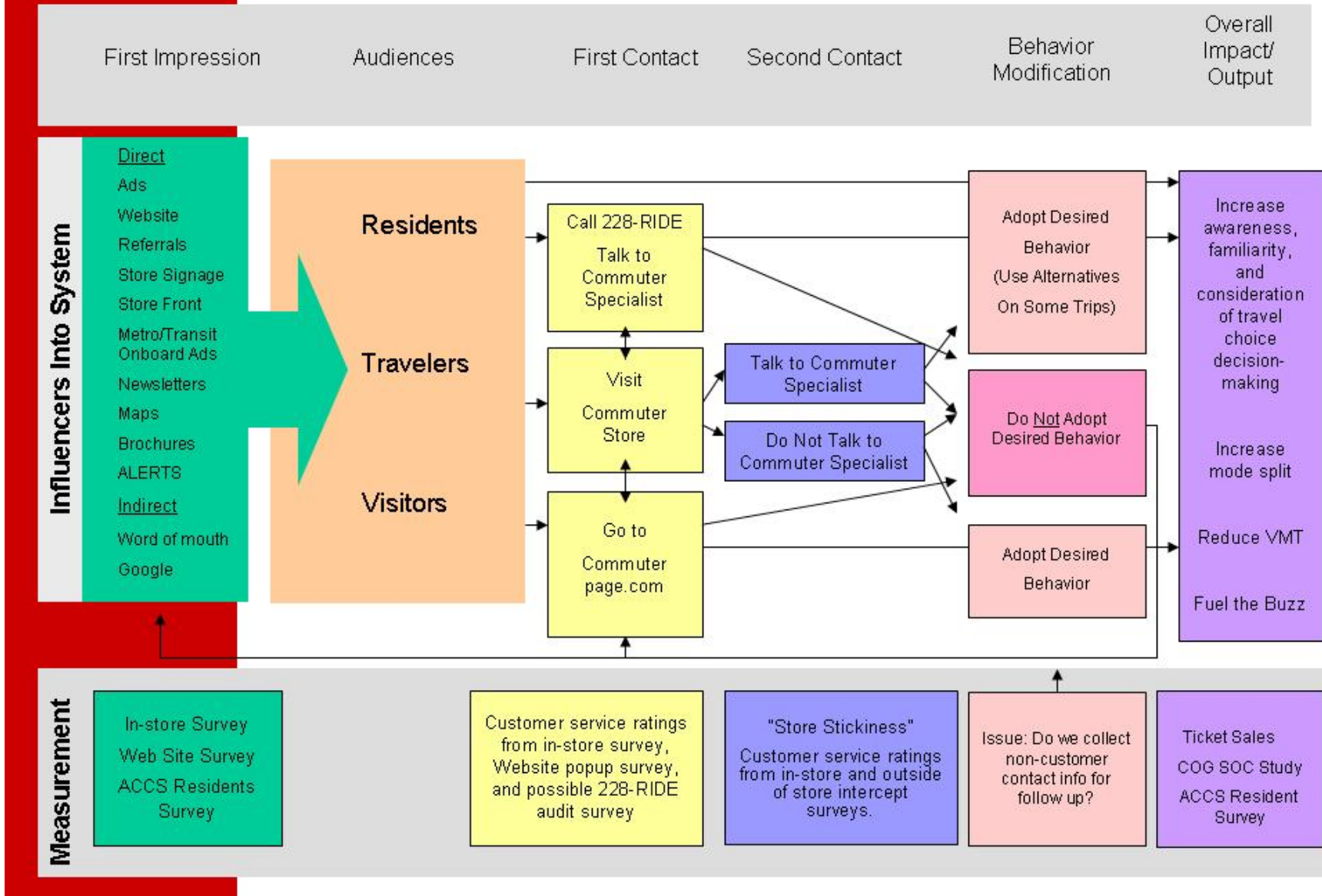
Commuter Store Customer Experience Blueprint

ACCS Business Outreach Experience Blueprint (Page 1)

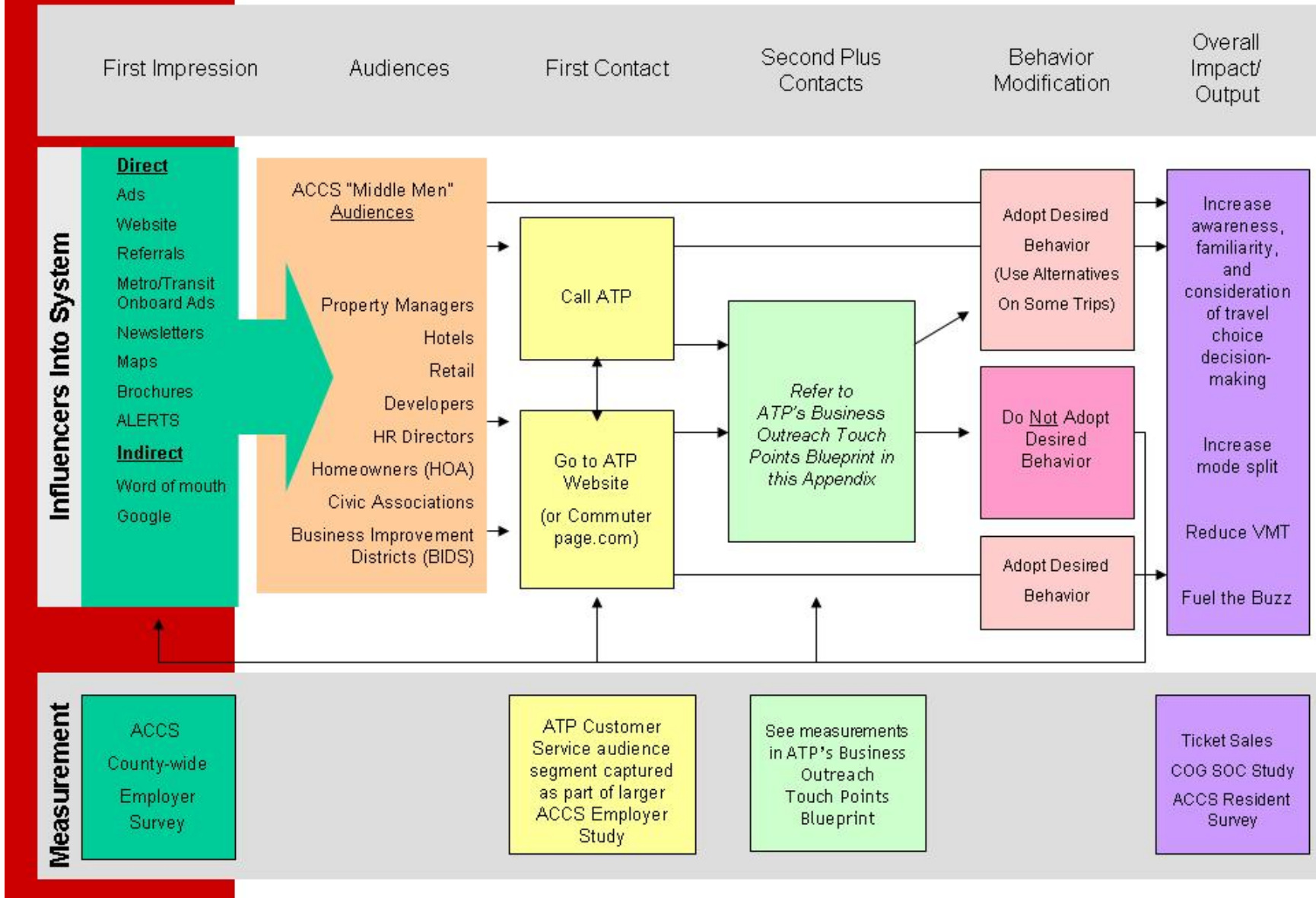
ACCS Business Outreach Experience Blueprint (Page 2)



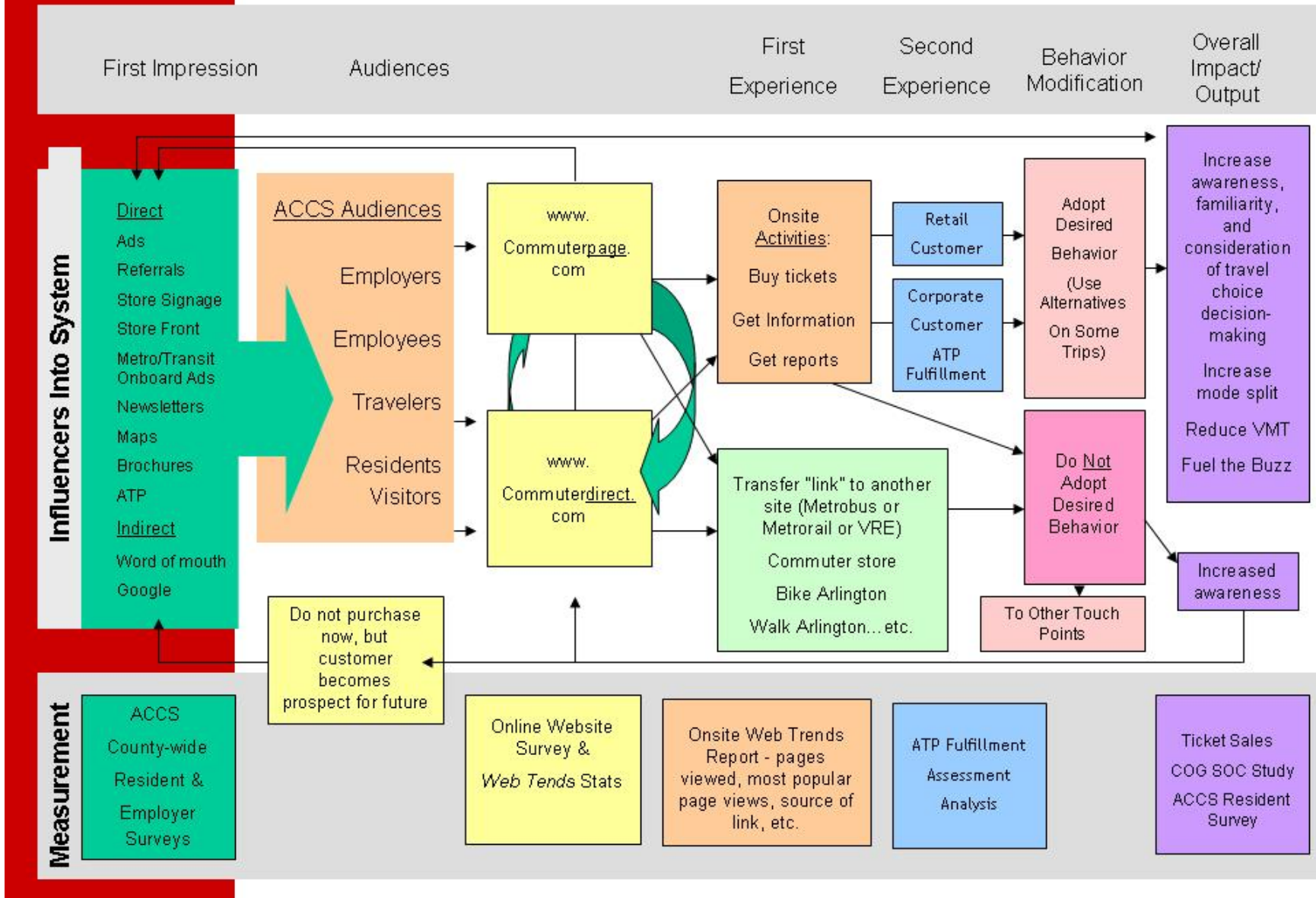
ACCS Master Touch Point Experience - Travelers & Residents



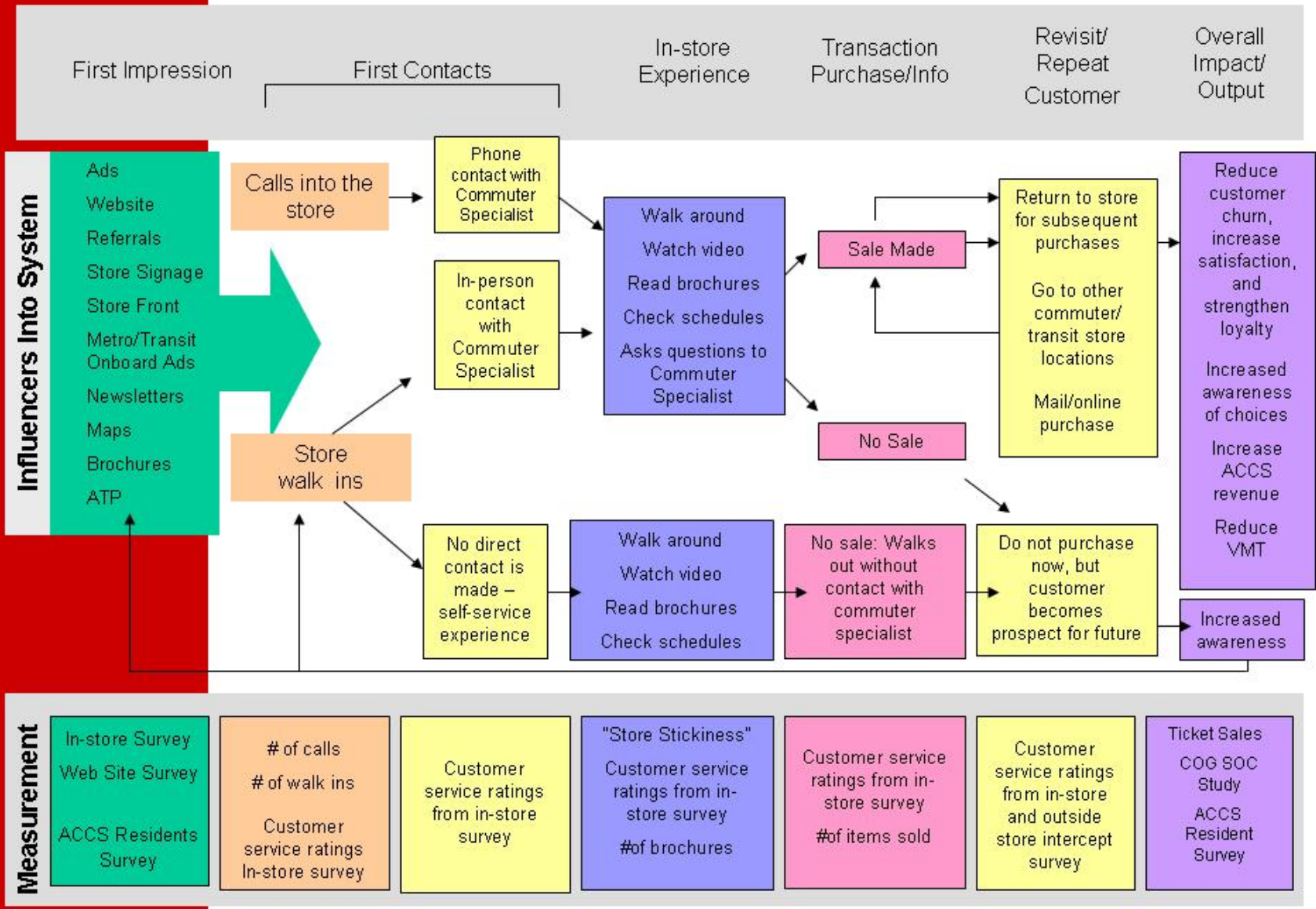
ACCS Master Touch Point Experience - Institutional Partners



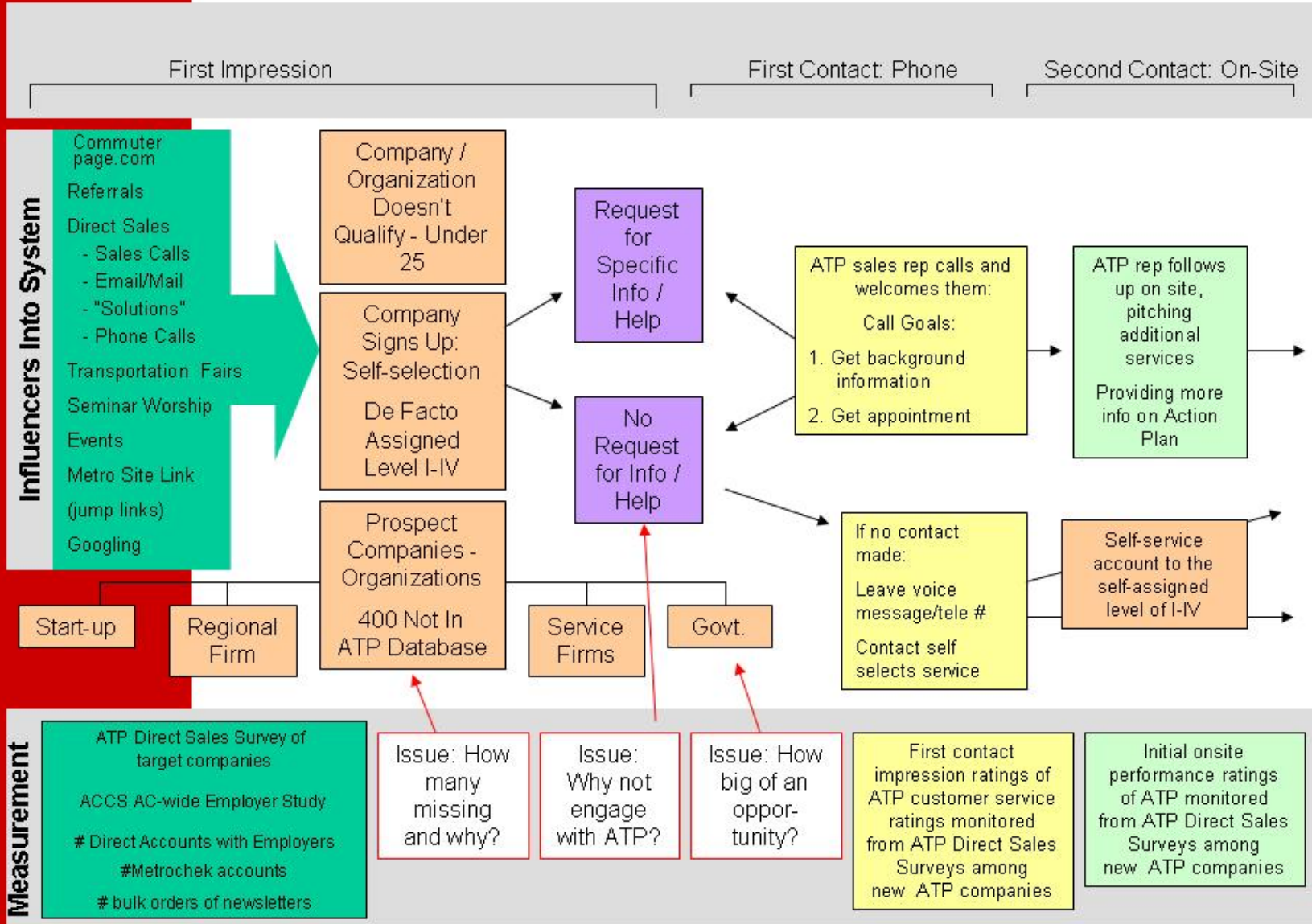
ACCS Master Touch Point Experience - **Web Site Properties**



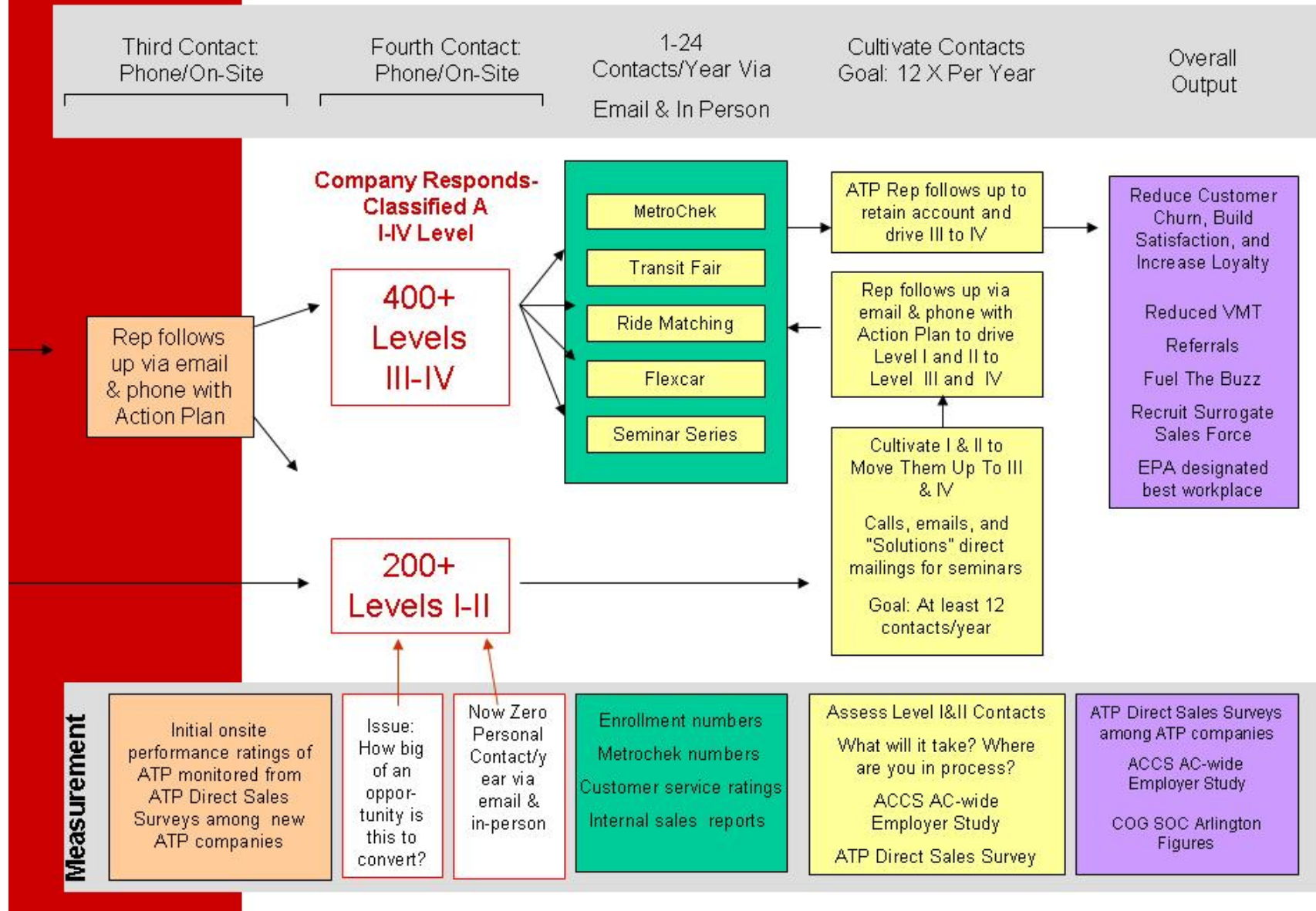
Commuter Store Customer Experience Blueprint



ACCS Business Outreach Experience Blueprint (Page 1)



ACCS Business Outreach Experience Blueprint (Page 2)



Appendix 4 – Basic Method for Calculating Service Impacts

This appendix presents an example of how service impacts would be calculated for individual ACCS services starting with basic information on the potential target market for the service and applying a set of tailored “multiplier” factors to estimate the number of travelers who change travel behavior and the travel and air quality impacts of the changes. Each service would have a unique set of factors, developed by surveying a random sample of people in the target population, but the basic calculation method would be similar for all services.

Eight basic steps are used to calculate program impacts. These steps are described below. A hypothetical numerical example of the steps is presented in Figure 1 for one service.

Service Evaluation - Basic Service Impact Calculation Methodology Steps

- | | |
|---|--|
| 1. Estimate traveler “population base” for the service | = e.g., all residents, all employees, Commuter-Direct.com users, carshare participants, commuters who received transit schedules, etc. |
| 2. Calculate placement rate (from survey data) | = Proportion of base who made a travel change as a result of the service |
| 3. Estimate number of “placements” | = Population base x placement rate |
| 4. Estimate VTR factor (from survey data) | = Average daily vehicle trips reduced per placement |
| 5. Estimate vehicle trips (VT) reduced | = placements x VTR factor |
| 6. Estimate VMT reduced | = Vehicle trips reduced x avg. trip length |
| 7. Adjust VT and VMT for SOV access
- Adjusted vehicle trips reduced
- Adjusted VMT reduced | = Total vehicle trips – SOV access trips
= Total VMT – SOV access VMT |
| 8. Estimate emissions reduced | = Vehicle trips x “trip end” emission factors
= VMT x “running” emission factor |

Step 1 – Determine Commuter Population Base

Step 1 establishes the population base, or population of interest, relevant to the specific service. This is the population that is targeted by the service and that potentially could have been influenced by it. Depending on the service being evaluated, this could be all residents, all employees, CommuterDirect.com users, or some other population. In the example shown in Figure 1, the population base is 8,000 employees.

Figure 1
Example of Basic Program Impact Calculation Methodology Steps for an ACCS Service

(Caution: this is a hypothetical example. The factors used and results generated from this example should not be used for actual evaluation purposes)

1. Estimate service “population base”	= 8,000 employees
2. Calculate placement rate (from survey data)	= 20%
3. Estimate number of “placements”	= 8,000 x 0.2 = 1,600 employees placed
4. Estimate VTR factor (from survey data)	= 0.7 vehicle trips reduced per placement
5. Estimate vehicle trips (VT) reduced	= 1,600 x 0.7 trips reduced per placement = 1,120 vehicle trips reduced
6. Estimate VMT reduced	= 1,120 vehicle trips reduced x 15 miles/trip = 16,800 VMT reduced
7. Adjust VT and VMT for SOV access	(assume 30% of placements have SOV access and drive 2 miles to meeting point)
- Adjusted vehicle trips reduced	= 0.7 x 1,120 trips = 784 vehicle trips (without SOV access)
- Adjusted VMT reduced	= (1,120 x 0.7 x 15 miles) + (1,120 x 0.3 x 13 miles) = 11,760 + 4,368 = 16,128 VMT
8. Estimate emissions reduced	
VOC	= 784 trips x 2.345 gm/trip = 1,838 gm = 16,128 VMT x 0.272 gm/VMT = 4,387 gm = (1,838 gm + 4,387 gm) / 1,000 gm/kg = 6.2 kg VOC reduced
NOx	= 784 trips x 0.991 gm/trip = 777 gm = 16,128 VMT x 0.700 gm/VMT = 11,290 gm = (777 gm + 11,290 gm) / 1,000 gm/kg = 12.1 kg NOx reduced

Step 2 – Calculate Placement Rate

The next step in determining program impacts is to calculate the placement rate for the population base exposed to the service. The placement rate is equal to the percentage of people in the population base who shift to a commute alternative (carpool, vanpool, public transportation, walk/bike, telecommute) after using the service. Placement rates are calculated from survey data of the population base.

Two separate placement rates are generally calculated for a service, to account for the length of time the person uses the new mode after shifting: continuing rate (did not shift back to original mode), temporary (tried new non-SOV mode but shifted back to original mode within the evaluation period).

For simplicity, Figure 1 shows only one placement rate, 20%. This means that 20% of the people in the population base made a change to a non-SOV mode as a result of the service. The remaining 80% did not make a shift. The placement rates for one service will not necessarily be the same as the placement rates for any other service.

Step 3 – Estimate Number of New Placements

Step 3 estimates the number of new placements in non-SOV modes. This is the estimated number of people who are expected to have made the shift to a non-SOV mode as a result of the service. It is calculated by multiplying the placement rate (calculated in Step 2 from a survey of a sample of people in the population base) by the total population base. In our example in Figure 1, the calculation of placements is as shown below:

$$\begin{aligned} \text{Placements} &= 8,000 \text{ employees (population base)} \times 0.2 \\ &= \mathbf{1,600 \text{ placements}} \end{aligned}$$

Step 4 – Estimate VTR Factor

From the same survey data used to calculate placement rate, the Vehicle Trip Reduction (VTR) factor is next calculated. This is equal to the average daily vehicle trips reduced per placement. Not all commuter placements will reduce the same number of trips. Three types of commute shifts are captured in the VTR factor:

- 1) SOV travelers shifting to non-SOV modes
- 2) Current non-SOV users shifting to different non-SOV modes (e.g., carpool to transit)
- 3) Current non-SOV users increasing the number of days they use non-SOV modes

The number of trips a traveler reduces also depends on the number of days per week that he or she now uses the non-SOV mode, compared to the number of days he or she used it before. The VTR factor combines the varied trip reduction results of all placements to develop an average reduction per placement. As for placement rate, VTR factors might be different for different services.

As shown in Figure 1, the VTR factor for the service in the hypothetical example is 0.70. This means that each of the placements for this service reduces, on average, 0.7 vehicle trips per day.

Step 5 – Estimate Vehicle Trips Reduced

The number of vehicle trips reduced for the service is then estimated by multiplying the number of placements from Step 3 by the VTR factor, the average number of trips reduced per placement, calculated in Step 4. The calculation of vehicle trips reduced for the example shown in Figure 1 would be as follows:

$$\begin{aligned} \text{Vehicle trips reduced} &= 1,600 \text{ placements} \times 0.7 \text{ trips reduced per placement} \\ &= \mathbf{1,120 \text{ vehicle trips reduced}} \end{aligned}$$

Step 6 – Estimate VMT Reduced

The total daily VMT reduced is calculated by multiplying the number of vehicle trips reduced (Step 5) by the average travel distance for the population of interest. The average distance is calculated from the same survey data used to calculate the placement rate and VTR factor. The example in Figure 1 assumes that the average distance is 15 miles per one-way trip. Using this distance, the total VMT reduced for 1,120 vehicle trips is:

$$\begin{aligned} \text{VMT reduced} &= 1,120 \text{ vehicle trips reduced} \times 15 \text{ miles per trips} \\ &= \mathbf{16,800 \text{ VMT reduced}} \end{aligned}$$

Step 7 – Adjust Vehicle Trips and VMT for SOV Access

Because one reason for implementing ACCS services is to contribute to air quality improvements and reduce emissions, SOV access to non-SOV modes must be taken into account. Emission reduction, as explained in Step 8, is calculated by multiplying vehicle trips reduced and VMT reduced by emission factors. But because travelers who drive-alone to meet a carpool, vanpool, bus, or train do create a “cold start,” their trips must be subtracted from the vehicle trip reduction to assess the air quality impact of service. Additionally, the distance they travel to the meeting point must be subtracted from the VMT reduced to obtain an accurate VMT count. It is these “adjusted” vehicle trips reduced and VMT reduced, rather than the initial totals, that are used to calculate emissions reduced.

In our example, it is assumed that 30% of the commuter placements drives alone to the rideshare or transit meeting point and that the average distance to this point is 2 miles. Using these figures, the “adjusted” vehicle trips reduced and VMT reduced are shown below:

$$\begin{aligned} \text{Adjusted vehicle trips reduced} &= 1,120 \text{ trips} \times 0.7 \text{ (non-SOV access)} \\ &= \mathbf{784 \text{ vehicle trips reduced (for emissions calculation)}} \end{aligned}$$

$$\begin{aligned} \text{Adjusted VMT reduced} &= (1,120 \text{ trips} \times 0.7 \times 15 \text{ mi}) + (1,120 \text{ trips} \times 0.3 \times 13 \text{ mi}) \\ &= 11,760 + 4,368 \\ &= \mathbf{16,128 \text{ VMT reduced (for emissions calculation)}} \end{aligned}$$

Step 8 – Estimate Emissions Reduced

As noted in Step 7, emissions reduced are estimated by applying two regional emission factors, a “trip end emissions” factor and a “running emissions” factor, respectively, to the number of vehicle trips or “trip ends” reduced and to the VMT reduced to determine the pollutants (in this case NO_x and VOC) reduced as result of the program. The trip end emissions factor accounts for the emissions created from a “cold start,” when a vehicle is first started, and a “hot soak,” that occur when the vehicle is later turned off. The running emission factor accounts for the emissions generated per mile of travel by a warmed-up engine.

For 2005, the regional emission factors were:

<u>Emission Factor</u>	<u>NO_x</u>	<u>VOC</u>
• Trip end (<i>grams per one-way vehicle trip</i>)	0.991	2.345
• Running (<i>grams per mile</i>)	0.700	0.272

To estimate total emissions, the trip end emission factor is multiplied by the adjusted daily vehicle trips reduced (Step 7) and the running factor is multiplied by the adjusted daily VMT reduced (Step 7). These two products are then added to determine total annual NOx and VOC reductions in grams. This total is then divided by 907,185 grams per ton to convert the emissions reduced to tons per day. Using these emissions factors, the total VOC and NOx reduced for our example in Figure 1:

$$\begin{aligned}\text{VOC} &= 784 \text{ trips} \times 2.345 \text{ gm/trip} = 1,838 \text{ gm} \\ &= 16,128 \text{ VMT} \times 0.272 \text{ gm/VMT} = 4,387 \text{ gm} \\ &= (1,838 \text{ gm} + 4,387 \text{ gm}) / 1,000 \text{ gm/kg} \\ &= \mathbf{6.2 \text{ kg VOC reduced}}\end{aligned}$$

$$\begin{aligned}\text{NOx} &= 784 \text{ trips} \times 0.991 \text{ gm/trip} = 777 \text{ gm} \\ &= 16,128 \text{ VMT} \times 0.700 \text{ gm/VMT} = 11,290 \text{ gm} \\ &= (777 \text{ gm} + 11,290 \text{ gm}) / 1,000 \text{ gm/kg} \\ &= \mathbf{12.1 \text{ kg NOx reduced}}\end{aligned}$$

Appendix 5 – Objectives and Methodology of Resident Survey, Employee Survey, Employer/Business Survey, and Customer Feedback Surveys/Tools

- Resident/Citizen Research
- Employee Research
- Business/Employer Research
- Customer Feedback

RESIDENT SURVEY

Study Objectives:

Identify residents' mobility needs, expectations, and satisfaction

- Measure Arlington County residents' overall satisfaction with their mobility and the County's transportation system: 1) overall satisfaction, 2) likelihood to recommend, 3) ratings for County in doing everything possible to serve residents' mobility/transportation needs
- Establish benchmark measures on residents' overall ratings of their mobility and the County's transportation system across a number of key attributes. For example:
 - How easy it is to reach County destinations with and without a car (Non-SOV options)
 - How easy it is to reach regional destinations with and without a car (Non-SOV options)
- Identify residents' overall transportation/mobility needs and unmet needs. Prioritize needs and assess degree to which unmet needs influence overall ratings and satisfaction
- Assess the role Arlington County residents' believe mobility/transportation system plays in making the County a desirable place to live (& work):
 - Influence of transportation/mobility on quality of life assessment/rating relative to other community attributes/characteristics
 - Influence of awareness and use of non-SOV travel options on transportation/mobility ratings and quality of life assessment/ratings
 - Role of transportation/mobility in attracting residents and retaining residents
- Identify Arlington residents' "expectations" of the County's transportation planners and system and ratings on the County's performance in delivering on their expectations. Identify the gaps in performance versus expectation.

Identify residents' awareness and use of non-SOV travel options

- Assess residents' awareness and familiarity of non-SOV travel options available in Arlington County – transit, walking, biking, carpooling, vanpooling, telecommuting, other options.

- Measure use and usage intent of non-SOV travel options available in Arlington County – transit, walking, biking, carpooling, vanpooling, telecommuting, and other options for: 1) commute travel, 2) non-commute travel around Arlington, and 3) travel to regional destinations
- Identify “facilitators” and “barriers” to incorporating non-SOV travel options into personal travel/trip decision-making process.
 - What realities – vocational, financial, social, etc.- impact incorporating non-SOV travel options into personal travel/trip decision-making process
 - What perceptions and misperceptions shape how residents view travel/trip decision making process and reinforce their final travel mode decision.

Identify residents’ awareness and use of travel assistance services

- Measure awareness, use, and impact of the County’s transportation support organizations (ACCS and ATP) and services (ART, Transit Stores, *ATP Solutions*, Bike Arlington, Walk Arlington, etc.)
- Assess awareness and rating of Arlington County’s transportation-related public information outreach efforts in advancing transportation services and travel options.
 - Measure awareness of County-wide information campaigns, commuter websites, direct mail, and information provided at bus stops and commuter retail stores.
 - Self assessment of behavioral change – mode choice - resulting from information received
- Assess awareness of and appreciation for transportation issues facing Arlington County and the role of the County’s development plan in shaping transportation priorities in implementing the Urban Villages concept.

Sub-group Analysis – Understand all of the above from as many perspectives as possible. For example: men vs. women; Gen X vs. baby Boomers; working vs. retired; County newcomers vs. long-time residents; working in Arlington vs. working outside of County; primarily SOV commuter vs. primarily transit commuter; car owner vs. non-car owner, etc.

Approach

Methodology

This Tier 1 research includes three components:

- Telephone survey of random sample of 500 residents County-wide
- On-line/paper survey of larger, non-random sample of residents
- Analysis of existing data from 2004 State of the Commute Survey (600 Arlington County residents)

This combination method is recommended to provide statistically valid results for the County as a whole (telephone survey and analysis of SOC data), with a cost-effective way to involve wide-spread resident citizen participation and begin to explore differences among resident sub-groups (on-line/paper survey).

The random County-wide sample of 500 for the telephone survey will afford a margin of error of $\pm 4.4\%$ at the 95% confidence level, a satisfactory level for the County as a whole. The survey also will provide sufficient samples to project findings for several key population sub-groups, back to their respective populations. These include: ridesharers, non-ridesharers, Latino/Hispanic, and White/non-Hispanic. We

propose to collect minimum samples of at least 200 for these groups, with margin of error of no more than $\pm 6.9\%$ at the 95%).

It should be noted, however, that information about minority sub-groups of residents (youth, seniors, non-Hispanic ethnic minorities and immigrants, physically-impaired, young professionals, “transient” populations, students, etc.) will be captured in the telephone survey only to the extent that residents in these groups can be reached and that they participate. The Tier 2 portion of this study will further explore these groups by specifically targeting and soliciting participation in groups that are underrepresented in Tier 1 data collection.

But the on-line/paper survey that follows the initial telephone survey will collect additional interviews for all sub-groups, enhancing confidence about the reliability of conclusions drawn about them, even in the Tier 1 research. The accuracy of the on-line/paper approach can be reinforced by survey techniques, such as formulating a broad quota scheme to monitor and ultimately weigh the responses to help ensure they accurately reflect the general population. In addition, we will ask respondents to provide their names and addresses for a small thank you incentive drawing. This record will help eliminate multiple responses from the same person.

Further descriptions of the methods for the three components are provided below.

Telephone Survey

Interview Process – The telephone survey will collect interviews from a random sample of Arlington County residents who are at least 18 years old. The survey will utilize random digit dialing (RDD) telephone interviewing, to collect the least biased data. RDD is based on a truly random sample of Arlington County residents that can be accurately projected back, with statistical certainty, to Arlington County’s entire population.

Weighting of Data – To ensure the results provide the most accurate projection of data, all final data collected will be weighted based on the actual U.S. Census data for Arlington County. Key weighting variables will include: gender, age, and ethnicity.

On-Line/Paper Survey

Distribution – The wide-scale, on-line/paper version of the resident survey will be distributed following the completion of the telephone interviews. Survey questionnaires will be distributed as follows:

1. email invitations sent to everyone registered with the County requesting them to go to [www.sirinterfeedback.com/Arlington County Survey](http://www.sirinterfeedback.com/ArlingtonCountySurvey)
2. live link to the survey posted on the county’s Web site
3. survey printed insert in the county’s newsletter – *The Citizen*
4. handout flyers on ART

The consultants will coordinate with Arlington County’s Public Information Office to send out survey invitations using the 8,000 email list of County residents, as well as placement of the link to the survey on the County’s website and the insertion of the survey in *The Citizen*. In addition to this, an invitation will be created for handout on ART.

Response Options – Respondents will be given the option of responding to the survey on-line or by completing a paper form of the questionnaire and faxing or mailing the questionnaire back. To increase response rates, we recommend offering small incentives, in the form of a chance to win a prize drawing. This topic will be discussed with the project team and a final plan will be developed.

Online Hosting – The consultants will program and host the online survey using an online survey system. The ACCS project team will test the online questionnaire before it goes “live”. The project team will also have access to the data as it comes in on a daily basis. All data will be stored on the consultant’s secured server. Backup tapes would be run every other day and stored in an off-site bank vault.

SOC Survey – In 2004, the Metropolitan Washington Council of Governments conducted a telephone survey of a random sample of “commuters” in the Washington region. A commuter was defined as a resident of the region who was 18 years of age or older who was employed, either part-time or full-time. The survey collected data on commute and telecommute patterns, awareness of regional transportation services, awareness of commute advertising and use of regional and employer-provided commute services, and demographics. The survey was conducted by telephone, using a random-digit dialing (RDD) approach and a computer-aided telephone interviewing (CATI) process.

Targeted Completed Interviews

Telephone Survey – The sample will include 600 completed interviews. This will provide a margin of error of $\pm 4\%$ at the 95% confidence level. But one of the stated objectives of this study is to assess how Arlington County’s current ridesharers and non-rideshares view transportation in the County and the County’s (ACCS’) transportation services. Thus, additional minimum samples of 200 will be collected for four sub-groups of residents: ridesharers, non-ridesharers, Latino/Hispanic, White/non-Hispanic to project the research findings back to the respective populations. This sample size will provide a maximum margin of error of $\pm 6.9\%$ at the 95% confidence level for each of these groups.

But analysis of existing data on demographic and travel distribution within the County suggests a standard random telephone interviewing process might not generate 200 or more completed interviews for each of these groups. To meet this challenge, we propose to over-sample, by establishing additional and separate quotas for ridesharers/non-ridersharers and Hispanic minority populations.

On-line/Paper Survey – The target number of completed interviews will be dependent upon the support of the County in using the available emails, placing the insert and online link, and promoting the presence of the survey through ads and libraries. Given the wide-spread dissemination of the survey, several thousand completed interviews is not unrealistic.

SOC Survey – The survey included 600 completed interviews. Because the survey was restricted to commuters, non-commute travel and non-commuter populations cannot be analyzed. However, because the dataset includes a 600-respondents sample of commuters, results for these commuters will be at a high level of confidence (margin of error of $\pm 4\%$ at the 95% confidence level).

Questionnaire

Telephone Survey – The consultants developed a survey instrument with an average interview time of approximately 22 minutes. To ensure full participation of Latino/Hispanic residents, a Spanish-language version of the questionnaire was prepared and used when needed.

An important consideration for this study is understanding how perceptions, opinions, and attitudes about transportation choices are similar and different across different segments of the population. To this end, all survey respondents were asked the same base questions (transportation choices, satisfaction with transportation, ratings, etc.). However, in some parts of the survey, rideshare and non-rideshare respondents were asked questions unique to each audience using a computer-aided telephone interviewing (CATI) process.

After review and refinement, and upon initial approval by the ACCS team, the questionnaire draft was shared with several ACCS' partner agencies in the Arlington County Department of Environmental Services (DES). The consultants pre-tested the survey instrument with 100 interviews to test how the questionnaire performed in the field and ensure its ability to efficiently gather the information desired. The goal was to see if any respondent had trouble understanding the questions – what is being asked, how it is being asked, etc. Following the pretest, the project team reviewed the survey instrument and made minor revisions necessary before the final fieldwork began.

On-line/Paper Survey – The questionnaire used for the on-line/paper version of the survey will mirror, as closely as possible, the telephone instrument, with some changes necessary to prepare the questionnaire for on-line use. Additionally, the *Citizen* insert version will be shorter than the online version.

The consultants also will pre-test this survey instrument, to ensure the written form is clearly understandable. Between 10 and 20 “live” interviews will be conducted to test this form and make any revisions necessary.

The survey also will invite respondents to volunteer to participate in an online panel to aid in future service refinement. In large transportation studies currently being conducted for VDOT, SIR is experiencing 33% to 55% of respondents agreeing to serve in this on-line capacity. The real power of the panel, however, is in its subsequent and highly targeted use.

The panel members, through their answers to the survey, can be segmented into specific types of service users, underserved audiences, or any other imaginable organizational scheme. As new service ideas are conceived to potentially meet the needs of different audience segments, they can be quickly tested, using focus groups or short on-line surveys, among qualified members of each targeted segment.

Final Analysis & Reporting

Telephone Survey – The consultants handled all aspects of analysis, including cleaning and coding the data and preparing frequency tabulations and multiple sets of cross-tabulated tables, allowing for comparison of answers across all customer segments. The consultants also conducted a multivariate analysis of the data, identifying key drivers to overall satisfaction with transportation choices and the County's perceived ability to deliver them to each audience. Findings for the multivariate analysis were presented to ACCS.

The major findings, strategic implications, and recommended action steps were presented in *Power-Point* presentation documents. The final deliverable also included all data tables and all verbatim responses to open-ended questions. The Topline Report provided immediate key message recommendations for the Pulsar Team. The final, more detailed, Final Report, prepared after the on-line survey is completed will provide more in-depth assessment of key market segments.

On-Line/Paper Survey – The consultants will code all open-end questions. Based on the potential for a large volume of responses, a final coding plan will be recommended at the conclusion of the fieldwork. For example, a random subset of verbatim comments may be coded rather than thousands or several questions may be prioritized over others.

The consultants will provide data tables and all verbatim comments to the project team and prepare a report of the research findings. One final printed copy will be provided of the data tables, verbatim comments, and final report. All final copies will also be transferred electronically. Additional printed copies can be provided at cost for printing expenses.

SOC Survey – The data from this survey were cleaned and coded under the original survey analysis. This analysis of the SOC data will include separation of Arlington County’s resident results from those of other jurisdictions in the region and preparation of frequency tabulations of all questions, multiple sets of cross-tabulated tables, allowing for comparison of answers across various customer segments, and analysis of the implications/significance of the results to the ACCS’ research issues. The results and analysis of the data will be provided in a summary report.

EMPLOYEE SURVEY:

Study Objectives:

Identify employees’ mobility needs, expectations, and satisfaction

- Assess the role Arlington County employees’ believe mobility/transportation system plays in making the County a desirable place to work:
 - Influence of awareness and use of non-SOV travel options on transportation/mobility ratings
 - Role of transportation/mobility in attracting workers
 - Role of transportation/mobility in retaining workers
 - How easy it is to reach their worksites with and without a car (Non-SOV options)
 - How easy it is to reach daytime destinations around their worksites with and without a car (Non-SOV options)
- Identify employees’ overall transportation/mobility needs and unmet needs. Prioritize needs and assess degree to which unmet needs influence overall ratings and satisfaction

Identify employees’ awareness and use of non-SOV travel options

- Assess employees’ awareness and familiarity of non-SOV travel options available in Arlington County – transit, walking, biking, carpooling, vanpooling, telecommuting, and other options.
- Measure use and usage intent of non-SOV travel options available in Arlington County – transit, walking, biking, carpooling, vanpooling, telecommuting, and other options for 1) commute travel and 2) non-commute travel around worksite
- Identify “facilitators” and “barriers” to incorporating non-SOV travel options into personal travel/trip decision-making process.
 - What realities – vocational, financial, social, etc.- impact incorporating non-SOV travel options into personal travel/trip decision-making process
 - What perceptions and misperceptions shape how employees view travel/trip decision making process and reinforce their final travel mode decision.

Identify employees’ awareness and use of travel assistance services

- Measure awareness, use, and impact of County’s transportation support organizations (ACCS and ATP) and services (ART, Transit Stores, *ATP Solutions*, Bike Arlington, Walk Arlington, etc.)
- Assess awareness and rating of Arlington County’s transportation-related information outreach efforts in advancing transportation services and travel options.

- Measure awareness of employer-focused information campaigns, commuter websites, direct mail, and at bus stops and commuter retail stores.
- Self assessment of behavioral change – mode choice - resulting from information received
- Measure awareness, use, and lift of employers’ informal and formal TDM support programming.
- If employer offers TDM program support, assess awareness and rating of employers’ information outreach efforts and programs / services.

Approach

Methodology

This Tier 1 employee research includes two components:

- On-line/paper survey of employees at selected County worksites
- Analysis of existing data from 2004 State of the Commute Survey (552 Arlington Co. employees)

This combination method is recommended to provide statistically valid results on commute travel and some limited indicators of travel option and commute service awareness of County employees overall (analysis of SOC data), with a cost-effective way to begin to collect more detailed data on needs and opinions of employees’ working at ACCS’ client sites (on-line/paper survey).

Ultimately, ACCS wants to collect data from a large enough and broad enough sample of employees to be confident that conclusions drawn about employees will be accurate across the entire employee population. Ideally this would be accomplished by surveying a random sample of employees County-wide, either by telephone or paper/mail survey. But it would be difficult, if not impossible, to obtain names and telephone or postal contact information for either all employees or a random sample of employees. No published source of this information is known to exist and it is highly unlikely that employers would be willing to provide such information about their employees.

The 2004 SOC telephone survey of regional workers, conducted by the Metropolitan Washington Council of Governments, was such a random survey. It included interviews with 552 Arlington County employees and offers statistically valid data, but on a limited set of topics of interest to ACCS. It did not include questions about employees’ travel needs, awareness or use of ACCS’ services, or many other key issues essential to ACCS in setting future direction.

We recommend the SOC data be analyzed thoroughly, but ACCS will need to conduct additional employee research, on topics specific to ACCS’ research needs. Another telephone survey does not seem a reasonable endeavor at this time, due to the difficulty of reaching a representative sample of employees. The SOC survey indicated that about two-thirds of County employees live outside the County (non-resident workers). Resident workers could be surveyed relatively easily, but to reach non-residents workers would require extensive interview screening of residents of other metropolitan Washington area jurisdictions, which would dramatically expand the cost of the survey. The survey cost would be increased even more to obtain adequate samples of employees at ACCS client vs non-client worksites and at worksites of different sizes, types, and locations within the County, all variables that would be important in a thorough analysis of employees’ needs and opinions.

For these reasons, ACCS must attempt to survey employees at their worksites, with permission of employers. We recommend using an on-line/paper version of a questionnaire for this survey. Descriptions of the method for this on/line/paper survey as well as for the SOC survey are provided below.

On-line/Paper Survey

Tier 1 of the Employee Study will include an on-line/paper survey of employees at “willing” ACCS client sites; that is, any site at which the employer is willing to permit a survey to be performed and will participate in the distribution and collection of questionnaires. It is important to note that this will not result in a statistically valid sample, but will provide data that ACCS can use to make early assessments of client site employees’ awareness, use, and satisfaction of ACCS and employer-provided services and opinions on transportation and mobility issues.

The sample will include employees from an unknown mix of employers – sizes, types, locations, TDM programs, etc., and will be self-selected, thus cannot be generalized to the full employer population. Further, since it will be completely voluntary for employees to complete the survey, self-selection bias in the employees that respond should also be assumed. Thus, both the employer mix and employee mix should be assumed to be non-representative of the entire population.

In Tier 2, we anticipate that a more rigorous sampling approach would be implemented to classify employers into different size, type, and location categories and recruit employers randomly from within these categories. Further, Tier 2 would expand the sample to non-client sites. This Tier 2 research will enable ACCS to draw more accurate conclusions about various sub-groups of employees. But even within Tier 1, as the number of employers that survey increases, the results will include a larger proportion of the potential population, thus the reliability of the results will improve over time.

The on-line/paper survey methodology would include two steps:

1. Employer recruitment
2. Employee survey administration

1 – Employer Recruitment – Recruitment of employers to participate in the survey will primarily be the responsibility of ACCS outreach staff, who will explain the purpose of the survey to each employer client and request their participation. Any client employer that is willing to participate would be included in the survey, but we recommend asking a wide range of employer clients to participate to provide the broadest possible sample of employers and maximize the likelihood that the early results will represent a range of Arlington employees.

To kick off the effort and encourage participation, we recommend that ACCS send to each client a letter signed by a high-level Arlington County official explaining the importance of the survey and asking for the employer’s help. This letter would be followed up with a phone call from the ACCS outreach representative to the employer contact to make a personal appeal for cooperation.

Although it is unlikely ACCS staff would be overwhelmed by employers wanting to participate, we recommend the solicitation be made in several phases, over the course of six to nine months, to minimize administrative burden on ACCS staff. For the first phase, we recommend targeting employers that employ at least 50 employees at the worksite, to include the largest possible number of employees in the survey and a sample of site plan office buildings. The first phase also could include multi-tenant office buildings at which ACCS has a relationship with the building manager.

Some employer contacts might not have the authority to make the decision to participate without discussing it with others at the worksite. In these cases, the ACCS contact/consultant should offer to call or meet with the person who does have the authority or other worksite staff who need to participate in the survey (e.g., HR staff). Note that this recruitment step could take several phone calls or meetings with employer representatives and the ACCS/consultants should offer as much assistance as possible to the employer representative to encourage the employer’s participation.

Various other techniques can be tried to encourage employers' participation. For example, attracting the interest of a senior manager at the worksite will carry more influence than if only a lower level staff member is contacted. We also recommend that participating employers receive survey results for their worksites and a copy of a report showing comparison of the employers' individual results to the results of all County employers. Finally, an incentive, such as a prize drawing or other gift could be offered to the employer contacts to thank them for their participation.

2 – Survey Administration – Once an employer agrees to participate, the survey will be conducted via two methods: online survey and paper survey. On-line administration will be the preferred method because it requires less effort by employers and by the survey administrator. But the dual methodology is required to ensure that employees who do not have online access, such as retail and hotel workers, are not summarily omitted from the research.

Whether on-line or paper administration is used, the employer will need to alert employees to the survey, explain how to complete the survey, and provide access to a questionnaire. The on-line version will be handled through interoffice email from the employer contact to employees with a link to the survey. Paper survey administration will require the employer to distribute survey packets, including the questionnaire, alert letter, and submittal instructions. The employer would then have to collect the surveys, by collection boxes, direct return, mail return or another method.

Incentives could be appropriate in this study for both employees who complete the questionnaire and for employer contacts who help to administer the survey at their worksites. These incentives could take the form of prize drawings or other small gifts provided to participants.

The consultants will program and host the on-line survey using an online survey system. The ACCS project team will test the on-line questionnaire before it goes 'live.' The project team will also have access to the data as it comes in on a daily basis. All on-line data will be stored on the consultant's secured server. Backup tapes will be run every other day and stored in an off-site bank vault.

SOC Survey – In 2004, the Metropolitan Washington Council of Governments conducted a telephone survey of a random sample of employed adults (over 18 years old) who lived the Washington region. The survey collected data on commute and telecommute patterns, awareness of regional transportation services, awareness of commute advertising and use of regional and employer-provided commute services, and demographics. The survey was conducted by telephone, using a random-digit dialing (RDD) approach and a computer-aided telephone interviewing (CATI) process.

Although the survey sample and jurisdictional quotas were defined by respondents' home locations, respondents' work location also was noted. Because Arlington County is a significant work location in the region, the random sample of 7,200 regional respondents included 552 respondents who worked in Arlington County. The survey data can be segmented to examine responses of any sub-group, thus the survey can be used to explore some information about employees who work in Arlington County, regardless of their home location.

Targeted Completed Interviews:

On-Line/Paper Survey – The target number of completed interviews will be dependent on the number of employers participating in the survey and the number of employees at these participating worksites. But within the participating employers, the employee response will be completely voluntary. This makes it difficult to estimate the number of completed interviews that will be obtained. Ideally, an overall response rate of 50% would be targeted. This will require a substantial effort by the employer

contact, supported by assistance of the ACCS/consulting team administering the survey. Past experience has indicated that response rates for similar surveys range widely from one employer to another, but overall rates average in the 20% to 50% range.

SOC Survey – The survey included 552 completed interviews with employees who work in Arlington County. This sample provides an overall margin of error of $\pm 4.2\%$ at the 95% confidence level. Error rates for sub-sets of the data (e.g., ridesharers, non-ridesharers, County residents, non-resident workers) will be determined by the respective sample sizes of these sub-groups.

Questionnaire

On-Line/Paper Survey – The consulting team will craft the survey instrument. Both paper and online versions will be developed. The questionnaires will include the same questions, however, the format could be different for the two questionnaire forms.

After review and refinement, and upon initial approval by the ACCS team, the questionnaire draft should be shared with ACCS' partner agencies. These could include: Arlington County Department of Environmental Services (DES), the Department of Community Planning, Housing, and Development (CPHD), Arlington Economic Development (AED), and others to be defined by ACCS.

The consultants recommend that the survey instrument be pre-tested for its ability to efficiently gather the information desired. We recommend at least 25 completed questionnaires be obtained from employees at two or more worksites and that both the paper and online versions be tested. The goal is to see if any respondent has trouble understanding the questions – what is being asked, how it is being asked, etc.

In past employee surveys, the consultants have included in the pre-test a brief set of follow-up questions asking respondents about key comprehension issues to identify issues that might not be evident simply from a review of completed questionnaires. Following the pretest, the project team will review the survey instrument and make any revisions necessary before the fieldwork begins.

Final Analysis & Reporting:

On-line/Paper Survey – Because the survey will be conducted over many months, with employers surveying at their convenience, the data for this study will not be collected at a single point in time. But it would not be fair to employers that participate in the early periods to make them wait many months to receive results for their surveys. Thus, we anticipate that data entry, analysis, and reporting for an employer would be performed as soon as all the questionnaires have been received for that employer. Compilation of results of employer results would be prepared in phases, as a sufficient number (TBD) of employers have completed the survey.

For each employer, the consultants will code responses to all paper version questionnaires returned and combine these responses with those collected on-line. The consultants also will code all open-end questions. We recommend that each employee record include a variable indicating if the survey was on-line or paper. This would facilitate comparisons in demographics and other variables between these two groups of respondents. We also recommend that each employer be classified by the industry type, worksite size, location (e.g., urban, suburban, etc.), transit accessibility, TDM program level, and other employer characteristics that would be useful in helping to analyze the data.

The consultants will provide individual results for each employer in a brief “summary report” that presents results to key questions. Compilation data tables and analysis will be prepared periodically for all

employers that have participated up to that point. At the conclusion of Tier 1 research, the project team will deliver research findings in a final report. One final printed copy will be provided of the data tables, verbatim comments, and final report. All final copies will also be transferred electronically. Additional printed copies can be provided at cost for printing expenses.

SOC Survey – The data from this survey were cleaned and coded under the original survey analysis. This analysis of the SOC data will include separation of Arlington County’s employee results from those of other jurisdictions in the region and preparation of frequency tabulations of all questions, multiple sets of cross-tabulated tables, allowing for comparison of answers across various customer segments, and analysis of the implications/significance of the results to the ACCS’ research issues. The results and analysis of the data will be provided in a summary report.

BUSINESS/EMPLOYER SURVEY:

Study Objectives:

Identify businesses’ mobility needs, expectations, and satisfaction

- Measure Arlington County business leaders’ overall satisfaction with the County’s transportation system and their employees’ mobility: 1) overall satisfaction, 2) likelihood to recommend Arlington County based on transportation issues, 3) rating of County in doing everything possible to serve business community’s mobility/transportation needs
- Establish benchmark measures on employers’ overall ratings of the County’s transportation system across key attributes:
 - Ease of employee commute
 - Ability for suppliers to deliver goods/ability to ship goods
 - Ability for clients to visit location/ability to visit clients
 - How easy it is to reach County destinations with and without a car (Non-SOV options)
 - How easy it is to reach regional destinations with and without a car (Non-SOV options)
 - Access to airports
- Assess impact of mobility/transportation on employee productivity
- Identify employers’ overall transportation/mobility needs and unmet needs. Prioritize needs and assess degree to which unmet needs influence overall ratings and satisfaction.
- Assess the role Arlington County employers believe mobility/transportation plays in making the County a desirable place to operate a business – attract and retain employees:
 - Influence of transportation/mobility, relative to other business location attributes/characteristics, on quality of life assessment/rating
 - Influence of awareness of and use of non-SOV travel options on transportation/mobility ratings and business climate assessment/ratings
 - Role of transportation/mobility in attracting business to the County, retaining business
- Identify Business leaders’ “expectations” of the County’s transportation planners and system.

- Measure how Arlington County business leaders perceive the County’s performance in delivering on their expectations. Identify the gaps in performance versus expectation.

Identify business leaders’ awareness and participation in travel assistance services

- Assess business leaders’ awareness and familiarity of non-SOV travel options available in Arlington County - transit, walking, biking, carpooling, vanpooling, telecommuting, and other options.
- Measure business leaders’ awareness, familiarity, utilization and intent to use employer-based transportation demand management (TDM) programs and services.
- Identify “facilitators” and “barriers” to incorporating employer-based transportation programming into ongoing business practice:
 - What realities – financial, location, etc.- impact acceptance and utilization of TDM programming
 - What perceptions and misperceptions shape how business leaders view TDM programming
- Measure awareness of County transportation support organizations (ACCS and ATP) and services (ART, Transit Stores, *ATP Solutions*, Bike Arlington, Walk Arlington, etc.).
- If aware, assess ratings of Arlington County’s transportation-related (ATP) business outreach communications efforts in advancing transportation solutions and TDM services. Identify strengths. Identify any areas in which the program falls short of its expectations
- If currently using, measure rating of and self-reported impact of ACCS/ATP services:
 - Number of employers participating
 - Reported impact - behavioral change
 - Impact of recruiting/retention
- Assess awareness of and appreciation for transportation issues facing Arlington County and the role of the County’s development plan in shaping transportation priorities in implementing the Urban Villages concept.

Understand all of the above from as many perspectives as possible. For example: small vs. large businesses; new businesses to the County vs. established business; types of industry, location in County, etc. Ask permission through the survey process to conduct more detailed onsite assessment of employer-based TDM programming.

Approach

Methodology:

The Arlington Country Business/Employer Study will be conducted online with potentially a mail-back approach. This methodology is recommended as the first step for Tier 1 as it affords the most cost-effective way to involve wide-spread business leader participation. The paper survey option may be needed to ensure full coverage of employers.

Survey Sample and Weighting – The sample will come from three sources: ATP, Arlington Economic Development (AED), and, potentially, the Chamber of Commerce. AED has already offered to help ACCS conduct this study through access to its comprehensive list of senior level corporate contacts across Arlington County. ACCS’ ATP targeted business clients will be “coded” in order to view this au-

dience as a separate group. The final survey data will be weighted using actual distribution of businesses as suggested by available records to ensure the data accurately reflect the make up of Arlington County's business community.

Invitations To Participate – A thoughtful letter and email invitation, signed by officials of Arlington County Transportation and AED, are recommended to generate wide-spread awareness and participation in this survey. This letter or email should highlight the importance of the survey to the County planners and provide detailed survey directions.

For those targeted business contacts with known email addresses, an email invitation will work. However, we recommend that a mail letter should be sent followed by an email containing an embedded link to the survey. The formal letter will help reinforce the importance of the study. For targeted business contacts without known email addresses, a letter should be sent with detail instructions on how to access the survey via the Internet or how to call for a mail copy or schedule a telephone interview.

A discussion should be held on the efficacy of including a printed questionnaire in this mailing to 2,400 non-email address targets. Our experience suggests many people will take it on-line, even with a mail survey in their hand, if online is an option. However, if respondents are required to request a paper copy of the survey, it is unlikely many will make the effort to do so.

Reminder emails and phone messages will follow one week later for all non-respondents. The survey deadline may be extended if needed as the last technique to encourage participation. We recommend offering a thank you incentive to respondents, for example, a coupon for a dinner at a well-established County restaurant. But lower-value incentives also could be used.

Online Hosting – The consultants will program and host the online survey using an online survey system. The ACCS project team will test the online questionnaire before it goes “live.” The project team will also have access to the data as it comes in on a daily basis.

Targeted Completed Interviews

The number of completed business interviews will be dependent upon the number of employers in the final sample database, the cost of the incentive proposed for respondents, and the position of the Alert Letter signatory (the higher the position/official the better). Ideally, we would target 600 or more completed interviews.

Questionnaire

For both the telephone and online approaches, we are assuming the survey will be approximately 12-14 minutes long – about 35 questions. The last question in the survey will invite respondents to participate in an online panel to aid in future service refinement.

As with the other surveys described in this plan, this survey instrument should be shared with ACCS' partner agencies. Likely agencies could include: Arlington County Department of Environmental Services (DES), the Department of Community Planning, Housing, and Development (CPHD), Arlington Economic Development (AED), and the Transportation Commission. In addition, the consultants will pre-test the final survey instrument.

Final Analysis & Reporting

The consultants will code all open-end questions in-house. Based on the potential for a large volume of responses, a final coding plan will be recommended at the conclusion of the fieldwork. For example, a random subset of verbatim comments may be coded rather than thousands or several questions may be prioritized over others.

The consultants will provide data tables and all verbatim comments to the project team and deliver research findings in a final report. One final printed copy will be provided of the data tables, verbatim comments, and final report. All final copies will also be transferred electronically. Additional printed copies can be provided at cost for printing expenses.

CUSTOMER FEEDBACK:

Study Objectives:*Identify ACCS traveler customers' use of and satisfaction with travel assistance services*

- Measure use and impact of County's transportation support organizations (ACCS and ATP) and services (ART, Transit Stores, *ATP Solutions*, Bike Arlington, Walk Arlington, employer-focused information campaigns, commuter websites, direct mail, and at bus stops, etc.)
- Assess sources of information/referral to ACCS' services
- Assess current level of satisfaction with features of existing services
- Identify requested/desired improvements to ACCS' existing services
- Identify desired new services – not currently in operation

Estimate travel changes made as a result of using ACCS' service and influence of services

- Measure use and usage intent of non-SOV travel options available in Arlington County – transit, walking, biking, carpooling, vanpooling, telecommuting, and other options for 1) commute travel and 2) non-commute travel
- Assess customers' use of non-SOV travel options before obtaining ACCS' services.
- Identify other TDM services used (ACCS / regional / employer-provided)
- Estimate relative influence of ACCS' services to influence of other services/factors

ApproachMethodology

The methodology for customer feedback efforts would vary by the type of service being evaluated and the characteristics of the customer audience. We note that some feedback is expected on these services through the resident survey and employee survey described in this plan. But we recommend implement-

ing ongoing input/feedback mechanisms using a method that reaches either a random sample of customers or, if that is not practical to administer, the largest possible segment of non-random customers.

Specific recommendations are provided below for collecting feedback on several key ACCS' services. Feedback on other County services, such as transit service and bike/walk facilities, and information displays/kiosks also is assumed to be collected through other research efforts, such as the resident and employee surveys described elsewhere in this plan.

- Visitors/tourists
- Commuter Store
- Customer info line
- CommuterDirect.com
- CommuterPage.com

Visitor Information – The most efficient method to obtain feedback from visitors is through assistance of staff at hotels and other organizations that help ACCS distribute tourist information.

An early and immediate option would be to ask hotel desk staff to distribute cards to guests at check-out to complete immediately and/or complete later and mail-back to ACCS. Hotel staff would forward cards returned at check-out to ACCS for review and processing. If ACCS distributes information through other tourism channels (e.g., tourist offices, travel agents), ACCS could ask these organizations also to distribute feedback cards at the time the information is provided. These methods could be used year-round for on-going feedback or ACCS could target springtime and other high tourism periods of the year to maximize the likelihood that hotels would assist with obtaining feedback.

The questionnaire would be very brief (four to six questions) and ask about sources, types, and use of travel information and the travel modes used for trips within Arlington and to other regional destinations. Because the cards distributed by tourist offices and travel agents would be delivered when information is provided but before travel takes place, this feedback might need to be confined to questions about the type of information desired and anticipated travel methods, rather than about use of information and influence on travel. But the card also could ask respondents if they would be willing to complete a follow-up questionnaire after their travel is completed.

A second opportunity to obtain visitor feedback could be through follow-up with visitors who call ACCS for information or who use the website to obtain information for a future trip to Arlington/DC region. These users would be included in feedback mechanisms, described below, for these other information outlets.

A third option would be to develop a plan with the Arlington County Convention and Visitor Services to collect feedback from visitors at their main tourism office or at tourist destinations in Arlington County. This could include intercept surveys with phone or internet follow-up with visitors who are willing to provide contact information.

Commuter Store – Two options are possible for Commuter Store patrons:

- 1 – Feedback cards distributed at the time of Store transactions
- 2 – Intercept surveys of customers

The first feedback option for this service would be similar to that described under visitor feedback, with Store staff distributing cards to patrons at the time of the sale/transaction. Patrons could be asked to complete the cards immediately and/or complete later and mail-back to ACCS. Because many Store patrons are repeat users, these cards could include not only questions about the type of informa-

tion/products obtained and the satisfaction with the Store's features, but also how the services or information have been used, for what trip purpose, and the influence of the services on travel choices. To avoid irritating repeat patrons or double-counting their responses, we recommend that this feedback not be implemented continuously, but at selected points throughout the year, for example, one month in each six month period.

In the second option, ACCS could conduct intercept surveys with a sample of patrons. ACCS previously conducted intercept surveys to examine users' perceptions of the Stores. The proposed new intercept surveys would ask about frequency of Store use, how patrons learned of the store, trip purpose for information/services obtained, and satisfaction with the services received. Because the sample of respondents is likely to be small for this survey and it is important to keep the surveys very brief, we recommend that this not be used as a primary method to collect before/after travel mode data.

Customer info line – For the customer information line, we recommend asking callers a few brief questions during the course of the call. These could include: how they heard about the program and number, if they previously used the service, and how satisfied they were with the past information they received. To minimize the additional time for the calls, we recommend limiting the number of questions, but asking callers if they would be willing to complete a follow-up questionnaire that asked about use of the information, travel changes, and influence of information on changes. We also recommend also that ACCS record the types of information requested and other information about the request, such as the purpose of the travel for which information is requested, and origin and destination of a specific trip to be made, which could be noted in the course of the call.

This feedback could be implemented on an on-going basis, but to limit staff burden and simplify analysis of results, we suggest conducting feedback efforts periodically, for example one week per month, and analyzing results on a quarterly basis. ACCS' records for October 2005 indicate that 560 calls were received during the month. If this count is representative, this would suggest ACCS would collect about 400 interviews over three weeks in a quarter.

CommuterDirect.com – Because CommuterDirect.com users must provide contact information to receive information or products, feedback for this service can be accomplished through an on-line follow-up survey sent to all individual users. We assume that CommuterDirect.com corporate sales would be assessed separately. The on-line survey offers a cost-effective method to collect in-depth data on users' satisfaction with the services/products received, how they used the services, travel changes made after receiving the services, and the role of the services in influencing/facilitating the changes.

The survey would be administered by sending individual customers an email with a link to an on-line questionnaire. Customers would click on the link and be taken directly to the survey. We recommend conducting an initial survey with all customers who used the service during the previous three month period. Subsequent surveys should be performed every three to six months with any new customers who were not previously surveyed. Results would be analyzed for each survey period.

CommuterPage.com – Unlike the other services described above, the services of CommuterPage.com are delivered anonymously. For this reason, it would be difficult to conduct a follow-up survey of users. As an alternative, we recommend developing an on-line pop-up survey that will ask a random sample of customers who access the website (e.g., every 10th user) to respond to two or three brief questions.

To collect data on more than three questions, we recommend rotating questions so that all are asked, but not all are asked of all respondents. Questions that might be asked include, for example, how the user heard of the website, reason for seeking information at this time, home location (city and state), past use

of the website, rating on ease of use of the site, desired information that is not available, etc. Users also could be asked if they were willing to participate in a follow-up survey.

Targeted Completed Interviews

The number of responses for each feedback effort will vary by the service being assessed, but we recommend ACCS target a minimum of 400 completed responses for each service.

Questionnaire

Questionnaires would be tailored to the specific services being assessed. However, we strongly recommend that identical or substantially similar questions be used in all the feedback surveys to collect data on current and past travel, frequency of service use, information/referral sources, levels of satisfaction, and service influence. Using consistent wording and rating scales will enable cross-service comparisons and facilitate estimates of double-counting of impacts, when more than one service is used.

Questionnaires for customer feedback cards and intercept surveys should be kept as short as possible to maximize response rate. Additionally, since we anticipate that most of these surveys will be administered in paper or on-line form, the format and presentation of the questionnaires must be kept simple, clear, and visually interesting.

Final Analysis & Reporting

Analysis for these customer feedback opportunities would be performed as data were available. Most of the methods recommended suggest periodic feedback efforts, rather than continuous efforts. One reason for making this recommendation is to simplify the analysis and reporting of results. If data collection is confined to a defined period of time, the analysis can be performed when that period is completed and results provided to interested parties.

