2012 Long-Range Transportation Demand Management Plan

French Broad River MPO &
City of Asheville

Final Report

March 2013

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French Broad River MPO Long-Range Transportation Demand Management Plan

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Acknowledgments

The Long-Range Transportation Demand Management Plan was developed in 2012 for the French Broad River Metropolitan Planning Organization and the City of Asheville. The individuals and organizations listed on this page contributed to the project through project oversight, providing funding and administrative support, serving on the project Steering Committee, and being a part of the consultant team.

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Chapter 1: Introduction & Executive Summary

The purpose of the Long-Range Transportation Demand Management Plan for Western North Carolina and the Asheville region is to identify a set of strategies to re-establish the Transportation Demand Management program and ensure its long-term viability. The Plan is funded and supported by the North Carolina Department of Transportation (NCDOT), the French Broad River Metropolitan Planning Organization (FBRMPO) and the City of Asheville.

The fundamental features of Transportation Demand Management (TDM) are defined as:

> *Programs and strategies that promote reduction or elimination of vehicular trips through a variety of methods, including: Public transit, carpooling, vanpooling, active transportation (bicycling and walking), teleworking/working from home, alternative work hours, carshare, and incentives for businesses and individuals to undertake any aspect of TDM.*

Promoting TDM in the Asheville Region and Western North Carolina is different—and should be different—than promoting TDM in other large urban areas.

The Region is not saddled with recurring congestion problems along its highways or gridlock along its streets. While citizens and others may complain of traffic problems, many of these are either episodic or located where intersection or interchange design capacities cause congestion during some peak hour periods. But TDM actions are not implemented solely to address congestion; they can serve a variety of public and social objectives that are important to a healthy region. For example, access and mobility also are essential to a high quality of life for residents, an objective that likely influenced many residents to choose the Region as their home area. And easy mobility through the Region is necessary to maintain economic vitality and attract new businesses and workers.

Long-distance commutes combined with limited access points to major business or activity centers within the region create congestion during peak periods at some intersection. The lack of recurring traffic congestion in the region is not likely to be a major reason people will choose to try a TDM mode or service. It will likely be a long-distance commute or a willingness to decrease their commute stress or costs that will entice someone to try TDM.

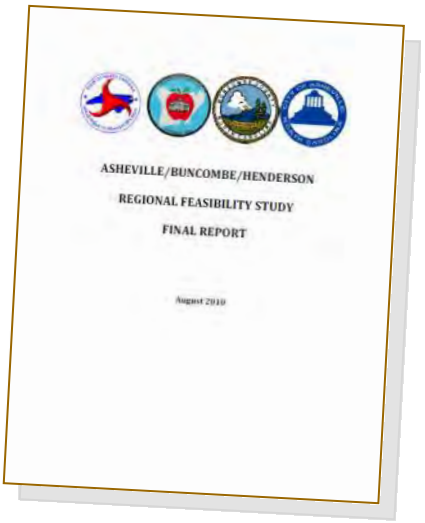
In Western North Carolina, the economic necessity, and in particular, the long-distance nature of the commutes or trip needs from county-to-county, will likely drive citizens and employers to engage in promoting and utilizing TDM programs. Travel through the Region also can be cumbersome since it is not easy to get directly from one point to another due to geographic and topographic features that constrain the placement of transportation infrastructure.

Within Asheville, Hendersonville, Waynesville, Black Mountain and other towns, there exists a desire among many business owners to promote transportation modes other than the single-occupant automobile as a way to reduce parking demand around their business, align the interests of their business with themes of environmental responsibility, or just to promote multi-modal transportation because they feel it is the right thing to do. Other businesses and social service agencies wish to promote TDM to reduce the burden associated with the costs of owning and operating a vehicle.

Since 2010, Western North Carolina and the Asheville Region has been without a TDM program. The program that was led by the City of Asheville was a victim of the economic downturn of the late 2000s. The NCDOT Public Transportation Division has been working with regional governments and transit agencies across the state to identify strategies and governance frameworks that can promote TDM throughout the state's metropolitan regions. For these reasons, NCDOT initiated this Plan with the goal of re-establishing the program.

In 2010, NCDOT organized a study to examine the potential for a regional transit authority that would be responsible for oversight of the fixed route transit and demand response systems in Buncombe and Hender-

son Counties. This study recommended the establishment of a Regional Mobility Manager position that would help serve in an oversight role for Asheville Redefines Transit (ART), Apple Country Transit in Henderson County and Hendersonville, and Mountain Mobility, the demand response system in Buncombe County. In 2011, Land of Sky Regional Council—a regional planning and implementation agency that covers Buncombe, Haywood, Henderson, Madison and Transylvania Counties—began managing Mountain Mobility and is also the umbrella agency where FBRMPO is housed.



The 2010 Regional Feasibility Study on transit governance and coordination recommended a Region Mobility Manager be housed at Land of Sky Regional Council.

The Long-Range TDM Plan also recommended that the Mobility Manager position initially allocate 50% of its time to re-establishing and managing the Region's TDM program. This recommendation to staff the new TDM program for its first two or three years with a position shared with another function rather than with a position dedicated entirely to the TDM program is due primarily to financial realities in the region. It is estimated that a the cost for a full-time staff position will be approximately $100,000, including all benefits. But a more reasonable first-year start-up cost budget for salary, fringe benefits and a marketing/outreach budget will be approximately $75,000.

It is recommended that funding for a full-time position be identified in the three to five-year timeframe along with an additional half-time employee to help perform day-to-day marketing and outreach to area employers. Beyond five years, the TDM program should grow with the region and the types of employers who are interested in active promotion and incentivizing of various TDM strategies. Based on a review of 10 peer regions across the United States, it is anticipated that a fully-established TDM program in Western North Carolina would include three full-time staff members inclusive of a Program Director, Marketing and Outreach Coordinator, and Operations and Funding Coordinator. The detailed recommendations, as well as cursory financial analysis for this arrangement, can be found in Chapter 3 along with options for short- and long-term governance arrangements for the TDM program.

Methodology

Defining the needs for a regional TDM program is not as straight-forward as other endeavors in transportation planning. While it is possible to use predictive models to determine traffic volumes or transit usage up to 20 years in the future with some level of reliability, the nature of TDM programs and ever-changing preferences among employers and commuters make such predictive models less useful. Contrary to popular conventions and most case studies in traditional public transit, the success of a TDM program is not as much about the size of a metropolitan region as it is the development of a culture that promotes and embraces the objectives of TDM actions and the mix and branding of TDM services that are offered, much like that of a private business.

This Plan is the culmination of various efforts designed to develop the best strategies for re-establishment and maintainability of a TDM program in Western North Carolina and the Asheville Region. The methods incorporated for development of this Plan and its recommendations included:

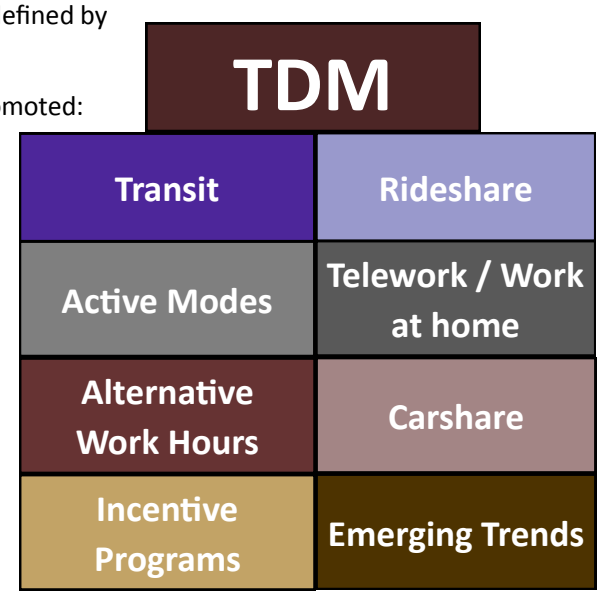
- Establishment of a Steering Committee consisting of local and regional agencies, including municipalities, county governments, the Asheville Area Chamber of Commerce, Asheville Redefines Transit, FBRMPO, non-profits, and NCDOT to help guide the Plan and develop its recommendations;
- A Strength-Weaknesses-Opportunities-Threats (SWOT) workshop with the Steering Committee to gather perspective on what is working and what can be improved in the region;
- Incorporation of other area employers and business groups to identify implementation strategies as part of the Business Plan;

- Interviews with TDM program leaders in 10 peer regions across the United States with characteristics or governance structures similar to Western North Carolina;
- Analysis of Census and other data to define the region and commute trip flows from county to county;
- An online Survey that garnered more than 400 responses to identify regional transportation preferences to better define TDM markets within Western North Carolina and identify program recommendations;
- Interviews with area employers who are already engaged in promoting TDM strategies, were engaged in past TDM efforts in the region, or are interested in promoting TDM in partnership with the new program;
- Utilization of the TRIMMS (Trip Reduction Impacts of Mobility Management Strategies) model developed to measure region-wide and site-specific impacts of TDM program implementation; and
- Research on emerging trends in TDM that are applicable to the Western North Carolina and TDM sub-markets within the area.

The results of these methods are summarized throughout this Plan and many have individual chapters dedicated to the method. The organization of these methods within the Plan is intended to serve not only as a foundation for recommendations to re-establishment of the program, but as a reference to those who will, in the future, be tasked with managing the TDM program for the region.

The Basics of TDM

It is easy to define TDM in such a broad sense to incorporate many aspects of transportation and how transportation systems are utilized. TDM programs find their successes in niche markets within the transportation realm based on the interests and energy of individuals, companies interested in promoting certain types of TDM, and the geographic arrangement of a region, whether that is defined by terrain, development patterns, or placement of population centers.

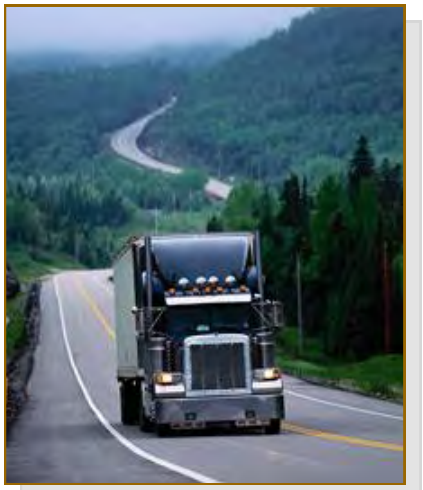


Below is a list with summaries of the fundamental facets of TDM that are promoted:

- **Public transportation services**, including fixed route bus systems, express bus routes, and demand response systems;
- **Carpools,** the fundamental workhorse of TDM, where two or more individuals with a common destination use one vehicle to commute or take a trip;
- **Vanpools,** a hybrid of a carpool and express bus route where a group of 4 to 15 individuals with common work hours and destinations commute or take a trip in a mini-van or 15-passenger van;
- **Active Transportation such as Bicycling or Walking,** where an individual or group of individuals takes a non-exercise trip on foot or on a bicycle. Active transportation modes also can serve as access modes to connect other TDM modes, such as a bike trip to a bus stop;
- **Teleworking or Working from home,** where an individual is allowed to work—full-time or part-time--at home or another location closer to home rather than commuting to main worksite;

- **Alternative work hours,** where an individual is allowed to begin or end work at times that are outside the typical AM and/or PM commute times to alleviate demand on the transportation system during those peak hours, and in some cases eliminating one or more work days per week;
- **Vehicle sharing arrangements, such as Carshare and Bikeshare,** where individuals have access to a shared vehicle, either on a short-term rental basis or through informal arrangements, for use instead of owning a vehicle. A growing trend is for companies to have a bikeshare and car-share programs at a worksite for employees to use for errands during the day or for emergency trips if they are using other TDM modes to commute to and from work;
- **Financial Incentives** funded either by a TDM program or employers, in which employees who don't drive alone to work are offered subsidies, transit pass discounts, prize drawings, or other cost savings, to encourage use of TDM strategies to reduce vehicle trips and parking demand; and
- **Support services** that make use of non-drive alone modes more convenient. A common support service is a guaranteed ride home programs for users of TDM services to take a taxi or other mode during a work day if a situation arises where they must get home via a means other than their TDM mode (e.g. for a sick child).

While these fundamental (and traditional) facets of TDM remain a cornerstone of most TDM programs across the United States, there are several other methods to manage transportation systems that could eventually lead to incorporation of other themes. These include methods to reduce vehicle emissions, address wear-and-tear on company vehicle and truck fleets and inclusion of low emission, hybrid or electric vehicles that reduce the impacts on fuel consumption and emissions resulting from a trip. Specifically, these emerging topics in TDM are:



Western North Carolina has one of the few freight-based TDM programs to reduce truck trips through shipping partnerships by local companies.

- Freight-based TDM where companies coordinate to reduce the number of truck trips within a region or on longer trips. There exists a great case study within the Asheville region that is profiled later in this report;
- Casual carpool or "Slugging", whereby individuals carpool with other individuals with a common destination but are not a regular carpool. They may carpool with one driver in the morning and another in the evening to reach their destinations. This is more prevalent along routes with severe congestion or where toll or HOV facilities offer travelers a strong incentive to form a one-time carpool to save money or obtain access to the facility.
- Use of carshare programs within multi-employer business parks whereby a group of companies or a property management company stations cars (preferably hybrid or electric vehicles) for short-term use instead of each company having an individual fleet of vehicles;
- Special events TDM where a one-time or recurring event is targeted to reduce transportation demand to and from the event, such as a concert, sporting event or festival;
- Single-trip carpools, such as used by college students returning home for weekends or spring break with other students with a similar destination;
- Active transportation innovations such as bikeshare programs and Safe Routes to Schools;
- Dynamic TDM or Dynamic Rideshare that integrates highway technology (e.g. Intelligent Transportation Systems) and in-car technologies to promote TDM strategies during a commute or when an incident occurs on a roadway; and

- Allowing electric and hybrid vehicles to have preferential treatment in either travel lanes or parking spaces/garages that have historically been reserved for carpools and vanpools.

Defining TDM for Western North Carolina

The barometer for success of TDM programs, as stated previously, does not lie in the size of the region or the magnitude of land use development in a region; rather, the most successful programs have succeeded by tailoring a set of programs, policies and projects that are best-suited for a particular service area or market sector. It is because of this that TDM programs are more akin to a private business than a public sector agency. Successful TDM programs require three distinct on-going efforts that are markedly different than what is practiced by local or regional governments.

Hendersonville and Henderson County, along with Haywood County, should be viewed as a separate markets for TDM programs and promotions when compared to Asheville and areas of Buncombe County outside of Asheville. Land use characteristics, commute patterns, transit service availability, and density of employment impact which TDM services are promoted to employers and commuters in different sub-regional markets.

First, a TDM program must offer a mix of services that can overcome the undeniable advantage of a personal vehicle. A successful TDM program will include services that are tailored to the travel needs and preferences of travelers in the region, that provide sufficient motivation to entice travelers to shift to a non-drive alone mode, or that remove a significant barrier to non-drive alone modes.

Second, a TDM program must continuously market itself to establish a brand and keep that brand fresh in the minds of commuters, employers, and business groups. This includes developing program-specific insignia, marketing materials, advertising campaigns and interactive outreach methods to maintain the strength of the brand.

Third, TDM program staff must be engaged with individuals and the business sector on a day-to-day basis, in an ongoing partnership. While most public sector employees are engaged with citizens or businesses for public meetings, permit issuance or responding to information requests, TDM program employees should keep databases of persons involved with incentive programs, employers and the contacts within those employers who are responsible for promoting TDM within the company, and economic development agencies or persons who work to maintain and attract employers to the region.

Based on these factors, there is not an "off-the-shelf" manual for developing a TDM program. This Plan attempted to define the unique factors of the Asheville Region and Western North Carolina to tailor recommendations to help a re-established TDM program achieve success in its early years and build upon that success as resources and other sources of support allow it to expand.

The online survey, interviews with employers, and analysis of demographic data conducted in this project indicate that there are numerous travel sub-markets, based on travel purpose, geography, and demographics, within Western North Carolina and the Asheville region for TDM. Each sub-market requires different strategies to promote TDM based on the types of employers within that sub-market, the destinations of individuals within those sub-markets, and the types of transportation services available.

First, three sub-markets have been defined by travel purpose: work, non-work, and tourism. Each of these travel purpose markets has distinctly different needs and expectations.

- **Resident Work / Commute Travel**: Work or commuting travel is a common focus for TDM programs, in large part because the trips account for a substantial portion of travel during peak travel periods, but also because the trips are repeated, making it more likely that travelers will invest the time to research travel options. Additionally, regional TDM programs can partner with employers for work trip TDM outreach, expanding the availability of work-related TDM services. Work travel is expected to be an important element of the TDM program throughout its dura-

tion and to be the primary focus of the program in the early years.

The work travel market in Western North Carolina is primarily centered in the City of Asheville, with smaller work concentrations in Hendersonville and other towns around the Region. The concentrated nature of work destinations, coupled with dispersed residential locations, means that many workers travel significant distances to work. This travel pattern also is difficult to serve efficiently with regular route, local public transit. For these reasons, the focus of the TDM program for work travel will need to include a substantial carpool/ vanpool component. But the program also should promote public transit where it currently exists and identify locations where a modest change in the route or timing of transit service could open new work-trip transit opportunities. In the longer-term, the program should define origin-destinations pairs for which targeted express bus might be feasible to serve long-distance work trips, perhaps funded in partnership with employers whose worksites would be served by the new routes.

Preferential carpool parking is provided at Haywood Community College's Regional High Tech Center near Waynesville.

- **Residents' Non-work Travel**: A second travel market consists of non-work trips made by residents of the Region. They are more complicated trips to serve with TDM actions than are work trips, because the origins, destinations, trip timing, and other characteristics are more varied. But the motivations for TDM have expanded significantly in recent years, to include social, health, and sustainability objectives important to the Western North Carolina Region, such as enhancing personal mobility, reducing greenhouse gases to mitigate climate change, and enhancing residents' quality of life. These objectives encompass both work and non-work travel.

  It's also clear, from the online survey, that residents make a distinction between the options they want, need, or expect for work travel and for non-work trips. Residents who responded to the survey reported substantially higher satisfaction with their commute than with the overall range of transportation options available in the Region or in their home neighborhood. This suggests that while many respondents have been able to arrange commuting patterns that are acceptable, they also value having options to make non-work trips.

  Thus, the TDM program also should actively promote non-drive-alone travel options where they exist to foster a culture of non-driving access and explore opportunities to increase the range of options that residents can use for non-work trips. In the absence of funding to expand regional transit options, the TDM program's non-work efforts likely will need to focus on developing community-based TDM services, such as carshare, bikeshare, casual carpool networks, neighborhood shuttle services, and community walking and bicycling programs. These actions could be accomplished in part through partnerships with local community groups.

- **Non-resident / Tourism Travel**: With its outdoor adventures in the Blue Ridge Mountains, the Biltmore and other historic sites, a vibrant arts and crafts community, festivals and events, and many other attractions, the Western North Carolina Region is a popular year-round tourism destination. Tourism travel adds to the trip-making throughout the region; the varied nature and locations of the Region's attractions mean that tourists need a vehicle to reach most of them. Potential exists to encourage tourists in the City of Asheville to "park once" and walk or take transit to minimize downtown travel. But most tourists travel with companions, so they already are utilizing shared-vehicle modes and TDM actions to serve tourists' travel needs are a distant priority when compared with programs for work and non-work trips of residents.

The primary impact of tourism on the Regional transportation network is the need for residents who work at tourist venues to reach their jobs. Many tourism jobs pay entry-level wages and most tourism destinations in the Region have no transit access or transit access during limited hours, making it difficult for workers who do not have a car to reach work. But tourism represents a significant component of the Region's economic base, so the travel needs of tourism workers should be an important element of the TDM program.

Second, both the regional data analysis and the online survey results suggest that the region includes three geographic sub-markets, which have distinctly different travel needs and opportunities: the City of Asheville, Buncombe County outside of Asheville, and Haywood and Henderson counties.

- **City of Asheville**: The City of Asheville represents the urban core of the Region, with the densest development patterns. It also is the region's Central Business District and has several major employers within the city limits to capitalize on a variety of TDM programs. The City has a well-established fixed route bus system that connects its neighborhoods to its downtown. The TDM program should capitalize on this opportunity and promote Asheville Redefines Transit (ART) to help the service attract as many riders possible within its service area both for work trips and non-work trips by residents. The use of Active Transportation modes and carshare programs also appear likely to offer potential within the City, due to the density of the development and the generally younger, more urban-focused perspective of City residents.

  The TDM programs should not incentivize or offer services that directly compete with the trips that can be served by ART. For example, a vanpool route should not be developed to serve an origin and destination when an existing fixed route bus service serves the origin/destination combination with a reasonable travel time. Additionally, the program will need to define work-based TDM services for Asheville residents who work within the City and for those who work outside the City. Transit, walking, and bicycling will clearly be feasible for many residents who work within the City, but those will not be reasonable options for Asheville residents who work elsewhere in the Region. But they likely could be motivated to try carpooling or vanpooling due to the long-distance nature of their commute and costs associated with that commute.

- **Buncombe County, outside the City of Asheville**: Areas of Buncombe County outside the City of Asheville represent a quite different situation from that of the City, both in the travel options that are available and in the perspective of the residents. This geographic sub-market includes commuters and employers who are primarily reliant upon the City of Asheville for employees but also for attracting new employees to the area. Few of ART's services provide access to citizens or destinations outside the City of Asheville. Carpooling, vanpooling, telework and alternative hours likely will be productive TDM actions for work trips in area and are likely to garner support from a higher concentration of residents of this area, compared to other counties in the Region. Buncombe County also has several pockets of employers—primarily manufacturing and federal government sites—in locations that are difficult to serve by traditional fixed route transit and are also limited in terms of likelihood for trips to be made via an active mode or through carshare.

- **Haywood County and Henderson County**: The smaller population and employment bases in the other two counties in the Region offer lower potential for both work and non-work trip TDM actions. For work trips, carpools and vanpools are the most likely program to promote for both employers within these and for residents who either live and work within the county or commute to another county within the region. Fixed route bus services have some potential to attract commuters, but these services are quite limited and are primarily designed to serve social service needs. Express bus routes from these counties to Asheville are identified in the FBRMPO Long-

Range Transportation Plan to serve long-distance commuting from these counties to employment locations in the Regional core. These express buses could begin as vanpool routes in the near-term as demand rises for more traditional express bus services. They could very well remain as a set of vanpool routes for a substantial number of years, depending on funding since vanpools have a higher financial return associated with lower operating costs when compared to express bus service.

These three sub-markets encompass the majority of the population and employment within the region, but that does not mean that a TDM program should ignore the commute needs of residents or businesses in other surrounding counties. The study identified a notable pattern of commutes from Madison County to Buncombe County, meaning that Buncombe County businesses rely on residents of Madison County for their workforce. Likewise, a major trip generator such as Western Carolina University is located outside these sub-markets but draws students and faculty from within the sub-markets or has programs in Asheville that attract trips from all three sub-markets.

It should be the goal of the TDM program to serve any commuter or business within the three sub-markets no matter the origin of the trip, as any trip taken off the road in any of the three sub-markets is a net positive on the transportation system.

Finally, it's important to note the role of a private vehicle for travel in the Region. The online survey analysis indicated that residents make a distinction between travel throughout the large area of the region and travel around a small, local area (home area). The survey suggested that residents consider the options that are actually available to them: personal vehicle, public transit, walking, bicycling, etc., as well as the characteristics of the trips they want to make.

In Asheville, where the range of options is most robust, residents can be car-free and have a reasonable level of personal local mobility. But without a car, their regional mobility suffers. Residents who live outside Asheville and who have a personal vehicle have the opposite situation – good regional mobility but limited options in the home area. The situation is much more difficult for car-free respondents who live outside Asheville. They have poor mobility for both local and regional trips. Walking and bicycling would be options for local trips in areas that have sidewalks, safe bicycle facilities, and where local trips are short. But these modes are less suitable for rural areas or even suburban areas that are not equipped with safe walking paths. And walking and bicycling would be unsuitable for most regional trips. Thus, respondents who don't have a personal vehicle need access to public transit. It's unlikely that the region will be able to expand the geographic scope of transit service substantially, due both to funding limitations and to the geographic realities of the Region. Thus, TDM actions outside the City of Asheville, likely will be limited to the work-related actions defined above and very limited actions concentrated in the few town-center or neighborhood areas that have sufficient population to support community-based TDM services.

Chapter 2: TDM Programs & Development Strategies

Developing an effective Transportation Demand Management (TDM) program requires a combination of marketing and incentive programs, and uses a collection of tools, approaches, strategies and options to encourage single-occupant drivers to select from a wide range of other transportation options.

In most cases, TDM strategies tend to positively affect and improve a small portion of total travel. However, when considering their cumulative impacts, they can be significant. Also, some individual TDM strategies (guaranteed or emergency ride home and transit information improvements) may have minimal impact on their own but can be quite important as part of an overall TDM program offering, since TDM's overall goal is to improve mobility and access as well as reduce congestion and air pollution and increase safety. Some TDM strategies also increase social equity by giving non-drivers, who are disproportionately low-income and minority residents, more benefits and travel choices.

The gas crisis of the 1970s led to the founding of many TDM programs in the United States. The big, bulky cars of the era had poor gas mileage and emission standards were not in place in most states.

Photo: Western North Carolina Heritage Collection, UNCA

Employer-based TDM programs have been in existence since the 1970s. Some companies have shown that integrating TDM into their organizational culture by applying sheer "stick-to-it-iveness" can have a lasting impact on some employees' commute choices (*TDM Case Studies and Commuter Testimonials, 1997*). TDM programs can be implemented and managed in various ways. The simplest is for an individual employer or organization to implement and manage the program for its employees. This approach works well for larger employers such as hospitals, colleges/universities, or major manufacturers.

Partnering together with groups of smaller employers or organizations to manage TDM programs works well too. This tends to work well in downtown areas and other commercial centers, business parks and industrial areas. A separate organization, such as a Transportation Management Association (TMA, not to be confused with Transportation Management Area, which is a term describing a large metropolitan planning organization), is established to manage the TDM program with funding for the TMA provided by the participating employers and on a pro-rated basis based on the number of employees.

TDM effectiveness depends upon a variety of factors that extend well beyond the actual strategies that are developed and implemented. Exhibit 2-1 illustrates data collected by the Association for Commuter Transportation on the effectiveness of primary TDM services on reduction in single-occupancy vehicle (SOV) use at employer sites. Promoting transit may work well in areas well served by transit but not as well where service is limited and frequencies long. Additionally, it is important to not lose sight of the fact that numerous factors (e.g. cost, time, convenience, personal or family needs, comfort, safety, income, car ownership, past habits, physical effort required, health benefits, attitude(s) toward environmental and social issue) impact and affect an employee's commuting decisions. Commuting characteristics such as distance play a role in an individual's commute mode choice.

***Exhibit 2-1*: TDM Strategies & Site-Based Reduction in SOV**

Strategy	Basic	Enhanced	Aggressive
Transit TDM	1-4%	4-6%	7-15%
Carpooling	1-5%	3-12%	15-25%
Vanpooling	1-2%	2-3%	5-10%
Bike/Walk	1-2%	2-6%	4-9%
Telework	5-10%	7-20%	15-25%

Source: Association for Commuter Transportation (2011)

The above identified factors can be placed into two separate groups: Commuter circumstances and commuter attitudes. In order to change an individual's behavior, an alternative TDM commute options program must change either one or the other. Since the number one goal of this type of program is to get drivers to leave their

personal car at home (unless they're carpooling) it is critical to understand how a driver's personal attitudes and circumstances play a role in their commute travel decisions.

Successful TDM efforts promote private and public sector programs and services that encourage employees to use non-SOV modes or change their existing commuting patterns, by telecommuting, participating in flexible hours and/or compressed work weeks. TDM strategies manage the demand for transportation infrastructure and the use of alternative mode choices by using potential positive and negative incentives.

Innovation and occasional "tweaking" of one or two existing TDM strategies can make a difference and can increase usage and gains achieved. Thinking "outside the box" can be a key to create new opportunities to influence employees and commuters to change their commute pattern and travel more efficiently.

Teamwork, partnerships and coordination efforts pay off in the long run. These efforts between entities (public and public, public and private, and private and private) make a significant difference and can lead to great results and successes. Numerous cases throughout the country have demonstrated excellent results when employers, organizations and public entities work together. Many times, potential opportunities to partner with neighboring employers are overlooked and result in missed opportunities. Sometimes it is easier to implement a program at a single employer. However, after a period of time and if an employer's program appears to be gaining momentum, that might be a good time for that employer to reach out to a neighboring employer or two and tell their story and share the company's successes. And in some instances, it can be a better strategy for a group of employers to partner together and pool their resources both monetarily as well as employee-wise, with a larger pool of employees to draw from to form, implement and retain carpools and vanpools.

TDM strategies or options can have a variety of transportation impacts, including:

- Improve the transportation options available to consumers;
- Cause changes in trip scheduling, route, destination or mode; or,
- Reduce the need for physical travel through more efficient land use or transportation/travel substitutes.

Preferential parking for carpools, vanpools and low emission vehicles is an encouragement technique to promote TDM. Communities may requires preferential parking as part of the development approval process.

To be most effective, TDM strategies combine three elements:

- **Services:** Services provide and enhance the convenience of alternative modes (such as streamlining the process for forming a vanpool) and the coverage of those modes (such as providing better access to transit facilities). Services may include the provision of rideshare matching; vanpool formation; employee shuttles; employee transportation coordinators; marketing and information; and assistance in developing flexible working policies.

- **Design:** Design provides the high-quality pedestrian environment conducive to using alternatives and affects the general aesthetics of the built environment. TDM-friendly site design includes an aesthetically pleasing environment for pedestrians; adequate and convenient bicycle facilities; protected pedestrian corridors through parking facilities; preferential parking for carpools and vanpools or low emission vehicles; passenger drop-off locations near building entrances; and buildings oriented to the street.

- **Pricing:** Pricing strategies provide incentives for using options to driving alone and manage the existing cost structure between modes. These strategies may include subsidized vanpools; Eco Passes; separating parking from office leases; transportation allowances; parking cash-out;

parking management; and financial incentives (such as Commuter Clubs, mode use assistance, etc.). *Source – Boulder, CO*

Commitment of Resources. A constant challenge for any TDM-related program, whether a regional program led by a public agency or the individual internal employer-based programs supported by an external agency, is the amount of resources available on a regular basis to continue to develop and promote TDM. The Business & Marketing Plan segment of this Plan outlines some options for development of the region's TDM in more detail. The factors for continued support are based on: determining the costs and resources needed to develop and administer TDM measures; the mechanisms by which to commit needed resources; evaluating performance on an on-going basis; and determining what level of use or financial inputs are needed to recover costs from services and potential funding sources.

A variety of possible TDM options can be identified and implemented over time as the region develops a TDM culture and gains an understanding of which market segments are most responsive to TDM program. In the program's initial years, the focus likely will be on defining programs that can be implemented at little or no cost to generate visibility and participation while programs that require more robust funding sources are being pursued through federal or other grants.

Once implemented, the employer can better understand the potential TDM programs have for changing SOV commutes, reducing their parking demand, retaining and attracting employees, and to be aware of the impact of minimal cost TDM options. Moving from minimal to moderate TDM program options and incentives that are more aggressive may require increased program budget dollars and adding incentives (some of which can be monetary based). These may be necessary and required to motivate employers and/or employees in some business sectors or geographic locations to make changes in their commute.

Limited Resources. TDM strategies are less costly than construction both in direct costs and in terms of disruption to the existing transportation system. Delays caused by construction affect freight and goods movement, regional mobility and reduce productivity. That is why it's important to demonstrate the effectiveness of low-cost TDM strategies so the general public is more likely to accept them as part of the overall transportation system.

Current Commuting Patterns. Theoretically, employees that travel five miles or less round-trip to/from the worksite would be the ideal candidates most able to take advantage of alternative transportation options like walking or bicycling or existing public transit, if available. Those that travel longer distances (typically beyond 15-20 miles one-way) are most suitable for carpools, vanpools, and eventually express bus services. It is imperative for the TDM program staff to understand the types of employees and their commuting patterns at a site or within a geographic location, not just community- or region-wide statistics.

Barriers to Alternatives. In most instances, distance from the worksite tends to be the most frequently identified reason (barrier) that prevents employees from even trying an alternative form of transportation. Additionally, lack of knowledge as to available non-drive-alone commute travel alternative options plays a minor role, but lack of knowledge in general can be a barrier to an employee choosing TDM methods as an alternative since many times an employee may not be aware of fellow co-workers living in close proximity to their residence. Also, additional TDM barriers may include "lack-of-convenience" and limitations or restrictions associated with the ability to run errands during lunch and/or to and from work.

Core TDM Strategies

The most basic definition of TDM typically is a set of strategies that encourages use of non-drive alone transportation options or replacement of a trip by any mode with a trip not taken. The particular package of strategies will always need to be tailored to the particular set of opportunities and challenges in the situation under consideration. But a typical TDM program might include some or all of the following non-drive-alone "travel options:" carpooling, vanpooling, public transportation (transit), bicycling, walking, teleworking, and alternative / compressed work schedules. Shown below are TDM strategies that might be applied to encourage use of these travel options.

Carpooling. Carpooling can be a viable short-term alternative to single-occupant transportation to and from the worksite and is implemented at a relatively low cost. It offers substantial flexibility for drivers/riders and is the primary option for locations that are not or cannot be served by transit. Both the TDM program and individual employers promote carpooling as an alternative to single occupant vehicle transportation by some of the following actions (some more simple and easy to implement than others):

- Provide bulletin boards for self-service ridematching.
- Provide manual or automatic ridematching service through portals such as ShareTheRideNC.com and other services, such as ZimRide, which is offered to colleges.
- Develop a carpool database that employees can use to search for coworkers who travel to and from the employer's worksite. If multiple employer worksites are in close proximity to each other, the database can be expanded to include employees at different companies. Additionally, this database can be used by commuters who leave the worksite for work or other commitments.
- Provide reserved/preferential parking spaces close to the building for carpoolers only.
- Educate employees regarding the availability of the database and how to use it, including the advantages of associated carpooling and disadvantages of single-occupancy vehicle travel.

Vanpooling. Vanpools typically serve a niche market with minimal one-way work trip commutes greater than 20 miles or more. It can be an important and attractive mode of travel for many people, particularly individuals who live beyond the area served by transit and in many cases, those not wanting to actually "drive" to work each day.

Vanpooling also is a highly effective TDM approach because it offers a new, quasi-transit, travel mode, but at a low cost of entry and system-wide costs. Incorporating an emergency or guaranteed ride home option (as a safety-net) into the mix makes vanpooling a proven and desirable choice for employees who travel long distances to work and those who have regular work schedules and can commit to a defined travel schedule. Vanpooling is promoted through some of the following actions:

Vanpools are a hybrid of carpools and express bus services whereby a group of individuals with a common origin, destination and work schedule commute via a minivan or 15 -passenger van. Drivers are part of the vanpool—not hired or volunteer as with fixed route or demand response services—and responsible for collecting fares and scheduling some maintenance of the van.

- Development and support of the vanpool program through the TDM service or through contracting with a private company to provide day-to-day operations and a supply of vans;
- Organizing vanpool routes through work with employers and/or online ridematching services;
- Publicize and provide general vanpool operator information in company newsletter, weekly company e-news, etc;
- Have local vanpool operator(s) host a vanpool educational workshop where employees may sign-up on site;
- Offer a full or partial pre-tax transportation benefit and/or subsidy to employees that vanpool;
- Offer a vanpool empty-seat subsidy to ensure that as vanpools lose riders over time, that the other vanpool riders maintain a consistent monthly fare; or
- Provide reserved/preferential parking for vanpools close to the building.

Transit. Transit is a the most established shared-ride service in most regions, but in small cities or metropolitan areas, the service area is limited due to operating costs. Generally, transit has appeal and will be considered as a viable option by an individual if:

- A rider does not own or have access to a car on a regular basis;
- A rider needs day-to-day time flexibility in arrival or departure time;
- The combination of travel time and price for the transit trip is competitive with the time and cost of making the trip in one's personal vehicle;
- The transit trip offers a convenient benefit over making the trip in one's personal vehicle; and
- Service is considered to be of high quality.

In locations where transit service is an option, the TDM program should promote transit as strongly as it promotes other commute modes Fixed route transit is seen by most as a stable system, as many bus routes have been in place for several years and have a sense of permanence in the minds of individuals when compared to the carpool/vanpool option. This sense of permanence is central to the decision of an individual to maintain a private car, as well as influencing land development patterns over time. Both of these are important long-term influences on the size of the market for TDM-related services. Vanpool routes should not overlap existing transit routes with similar origins and destinations unless the transit trip is so long and circuitous for that origin-destination pair that it is unlikely ever to be chosen for that trip.

Transit use can be promoted through some of the following actions:

- Provide an initial "first-time" incentive (free transit pass) for first time users to try utilizing transit service to commute to work;
- Provide links to transit websites on the employer's intranet;
- Offer and provide incidental use parking spaces in close proximity to the building for use by transit riders who must drive to work on occasion;
- Put a transit information rack in a central location in the building;
- Sell transit tickets and passes on-site;
- Offer payroll-deduction transit passes; or
- Offer a pre-tax transportation full or partial subsidy for employees that use public transit.

Additionally, the TDM program can be proactive in regards to public transportation service by talking to, encouraging and negotiating with the public transit agencies to help improve, enhance or increase services. The TDM program staff is oftentimes the day-to-day, first line of input from individuals who can provide feedback to how the transit services affect their commute. The TDM program can also work closely with the transit service to identify and pursue funding sources for new or expanded services.

Bicycling is a popular active mode of transportation for those who can commute shorter distances. *Asheville on Bikes* offers bike corrals at some special events in downtown Asheville.

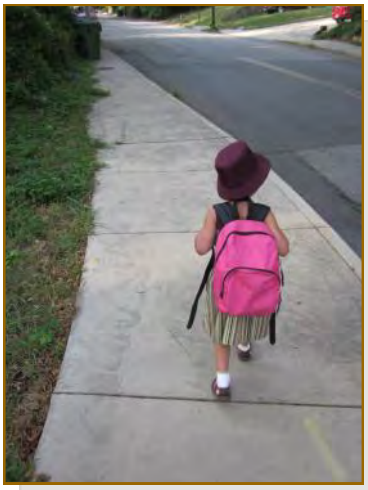
Bicycling. Research has shown that typical bike to work travel distances is five miles or less. Therefore, the potential to increase commute or other trips through bicycling is limited to destinations within a bikable distance and, for most bicyclists, on terrain that is suitable. Employers can promote bike commuting as an alternative to single occupant vehicle transportation by some of the following actions:

- Improve bike parking (bike racks and/or bike stations - a dedicated space that provides a secure and covered parking area for bikes);

- Offer or improve existing shower, locker and change facilities;
- Offer and provide "rainy day" transit passes to cycling commuters;
- Develop and provide a Bike Riders' Guide for the worksite that includes bike routes, locker and bike rack locations and other pertinent information;
- Provide cycling route maps to interested employees;
- Provide free bike accessories (headlamps, helmets, bike locks, etc.) to cyclists;
- Provide free cycling skills courses for employees;
- Provide free personal security courses for cyclists;
- Provide start-up funding for a bike user group (BUG);
- Provide on-site bike repair equipment and air pumps or contract with a nearby bike shop to perform these duties; or
- Organize a fleet of company bicycles for use by employees during workday travel to meetings or to run errands.

But bicycling also can be an effective option to promote for outdoor fairs and other special events. In Asheville, the group *Asheville on Bikes* promotes the mode for commuting to special events by offering free bicycle corrals or bicycle valet parking at a convenient and secure location. This is a very effective TDM-based promotion and one that is accomplished by a local group instead of through a TDM program. In instances like this, the TDM program staff can help the group promote the use of the bicycle corrals and potentially use some of the TDM program's marketing budget to help develop promotional materials or signage for use during the event.

Safe Routes to School efforts are also a TDM-type program that should be supported through the TDM program. Engaging parents in Safe Routes efforts also provides time to discuss with them other commute options once they leave the school site.



Safe Routes to Schools programs should be part of a TDM program outreach strategy to work with schools, parents and other organizations to encourage walking and biking to school to reduce traffic demand during school arrival and departure times.

Walking. The typical walk to work is 0.75 miles or less, although statistics in some urban areas suggest that distance can be extended if the walk feels safe and pleasant. Much of that preferred distance is based on weather, terrain and the availability of sidewalks along the route. Employers can promote walking to work as an alternative to single occupant vehicle transportation by some of the following actions:

- Offer or improve existing shower, locker and change facilities;
- Offer and provide "rainy day" transit passes or parking permits to walking commuters for occasional use of transit and/or driving;
- Provide walking route maps to interested employees;
- Examine and implement ways to improve walking conditions on the worksite as well as manage and maintain walkways, sidewalks and paths; or
- Provide free personal security courses for walking commuters.

As with bicycling, Safe Routes to Schools programs should be supported by the TDM program to encourage walking to and from school.

Teleworking/Telecommuting. Teleworking/telecommuting programs use computers, telephone, and other equipment to allow employees to work, usually one to three times a week, from home thereby substituting the need to travel. Benefits associated with teleworking include but are not limited to the following:

- Increased productivity;
- Reduced absenteeism;
- Savings on facility costs;
- Recruitment and retention of skilled employees; and,
- Reduced traffic congestion

Employers can encourage and promote employees to participate in teleworking options by:

- Providing training to managers and encourage them to support teleworking;
- Offering free computer equipment for teleworkers;
- Offering free home office furniture for teleworkers;
- Creating a support network for teleworkers;
- Providing high-quality remote access technology and technical support rooms with teleconferencing facilities so teleworkers can participate in meetings;
- Providing "drop-in" office workstations for full-time teleworkers; or
- Providing limited (1-2 days/week) as well as more frequent (3 or more days/week) telework options to employees.

Alternative, variable or creative work schedules. Employers can encourage or allow employees flexibility in their daily work schedules to move commute work trips outside the traditional peak-period as well as reduce the number of weekly or monthly commute trips. It is important that both employers and employees are educated as to their benefits including the primary objective to reduce peak-hour travel demand and reduce the burden on parking facilities. Components include staggered work hours, compressed work weeks and flexible work hours. A flexible schedule facilitates ridesharing and transit use and involves either a compressed work week or flexible starting or stopping times.

Other Programs. The following are some additional actions, which apply to all of the previously identified core commute-based TDM strategies, which an employer can pursue to encourage employees to consider an alternative commute option in lieu of driving solo to work:

- Expand Strive Not to Drive to be on-site festivities at employers and consider conducting it twice a year to promote alternative commute options;
- Include materials and information about alternative commute options to and from the work site as part of new employee orientation; and
- Establish a Commute Club – a program similar to airline miles that provides points or cash incentives to employees that utilize alternative commute option modes.

North Carolina has a consolidated online portal for ride-matching—*ShareTheRideNC.org*—that is funded by NCDOT and the metropolitan areas across the state.

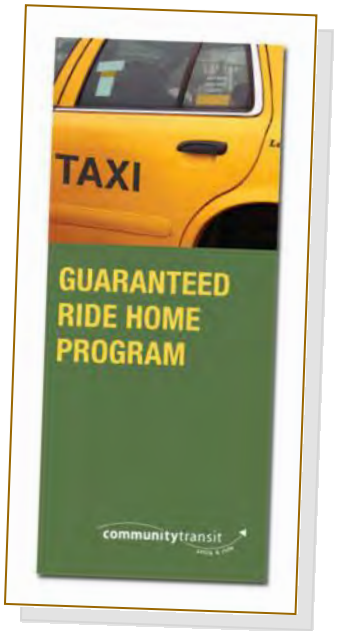
Common TDM Support Strategies

Ridesharing/Ridematching. Ridesharing includes carpooling, vanpool, and subscription/express bus or even conventional fixed route transit. Rideshare programs typically car and vanpool match through an online portal such as *ShareTheRideNC.org*. Ridematching is a computerized system that identifies people that live and/or work in close proximity to each other and are willing to share a ride to work.

As a general rule, the larger the database, the more likely a commuter will be able to find a match. But the match success also depends on the dispersion of the origins and destinations of the people in the database. Additionally, it is important that the names and contact information included in the database be current, to ensure that a commuter who receives a match list is receiving up-to-date information. This is generally accomplished by initial and sustained marketing of the ridematching service to encourage individuals to add their names to the ridematching database as well as to encourage them to seek ridematches and form carpools. Some or all of the ridematching activities can be managed, administered or undertaken by a regional public entity such as the TDM program, MPO, or transit agency.

It is important to note that the ridematching service should be actively used and researched by the TDM program. While services such as *ShareTheRideNC* can provide individuals with options for carpooling, the formation of vanpools or identification of a cluster of interested individuals for specialized TDM services can only be done by a person who is actively engaged with examining the input to the ridematching service for these trends.

This is particularly important if a private vanpool operator is contracted to supply vans for the service. The private vanpool can reduce costs and provide an easier way to maintain a fleet of vans, but the service is not as dedicated to making sure seats are filled and routes remain on the road; that is the role of the TDM program and its staff. The ridematching program provides an easier way to access data to help identify new vanpool routes, new customers for existing vanpool routes, or new ideas for those individuals using the vanpool to reach out to nearby employers or their neighbors.



Guaranteed Ride Home program brochure for commuters.
Image: Community Transit, Everett, WA

Guaranteed Ride Home Program. A guaranteed ride home (GRH) program provides an occasional subsidized ride home to employees/commuters who use alternative trip modes. It offers a greater sense of security to employees or commuters who share rides or use other non-SOV travel modes (e.g. transit, vanpool, bike or walk) by providing paid transportation in the event of a personal/family emergency, unplanned overtime, or other authorized reasons.

A taxi service, fleet vehicles, or rental cars can be used to provide free rides. Experience over the past 25 years has shown that commuters rarely need to use the guaranteed ride but its effectiveness lies in commuters knowing that it is available.

There is often skepticism from elected officials or others who financially support a GRH program because they view it as something where abuse can take place. For this reason, it is recommended that programs such as GRH-based taxi rides require a submittal of a receipt for reimbursement from the individual using GRH after the trip is taken. The individual should be required to be registered with the TDM program in order to receive the benefit.

Typically, a GRH program administrator (e.g. employer, TMA, regional agency, transit agency, etc.) limits either the number of times it can be used or caps the dollar amount an individual has available to use over the period of a year . GRH programs eliminate a barrier to using alternatives to driving alone and thereby support the effectiveness of other vehicle trip reduction strategies.

Additionally, the impact of a GRH program is directly related to how widely it is promoted and its eligibility requirements. The simplicity of a program as well promoting it as an "employee benefit" should help penetrate individuals unwilling to give up commuting to work solo in their own vehicle as well as being reluctant to even try an alternative transportation option. Most experience observed in programs in place around the country is that illegitimate use is a non-issue. Of course, it is important to monitor use by both worksite and individual once a GRH program is implemented and in place.

Financial Incentives. Research has shown that the cost of travel carries tremendous weight in most travelers mode choice decision. Thus, it's not surprising that strategies that reduce the real or perceived cost of non-SOV travel are among the most effective in influencing shifts from driving alone. While they are more costly

to implement than many other TDM strategies, it can be very successful to establish a broad, incentive-based TDM strategy that is available and accessible to all employees. Incentive programs can be provided by an individual employer or by a regional or local organization. Additionally, subsidies can be ongoing or offered for a short period of time to introduce employees to TDM services.

Incentives are a way to reward those that choose an alternative commute mode. Additionally, they are also extremely beneficial and necessary as a means of introducing employees, who are unfamiliar with non-personal vehicle commute travel alternatives. Transportation allowances and partially or fully subsidized transit/vanpool fares give employees a financial incentive to use alternative modes.

In some cases, an employer may offer a set amount ($2/day, $25/month, $1 per bike trip, etc.) for the employee's use of an alternative (non-solo vehicle commute) transportation mode to get to/from work. Each TDM strategy has its own inherent opportunities and limitations; however, in most instances, TDM strategies generally complement each other. There are circumstances when support strategies (ridematching services, incentives, subsidies, etc.) may only aid or benefit a few core TDM strategies. Employees/commuters like their "carrots" and some will change modes when the right one is offered to them.

Some common incentives include:

- **Time-off Incentive:** Provide an employee with an additional paid personal day if the employee uses an alternative commute mode a minimal amount of time (e.g. X days/week or month over a 6 month period);

- **Commuting Allowance Incentive:** Provide employees with a commuting allowance, such as one that is equal to the cost of a transit pass;

- **Periodic Non-SOV Incentive:** Provide employees who don't drive along with a monthly or quarterly financial benefits. Some options include partially or fully subsidized transit passes, a vanpool monthly fare subsidy, a semi-annual or annual gift card to employees that carpool, or a quarterly coupon to a local bike shop for employees who bicycle; and

- **Parking Cash Out:** Provide employees with a choice; receive a parking space or receive the cash equivalent of the space for not driving to work.

Various incentives, such as discounted admission or coupons for merchandise can be used to encourage TDM practices at special events such as the Lake Eden Arts Festival.

Special Events & Specialized Incentives. The discussions about this Plan for Western North Carolina have also addressed themes such as how to promote TDM for the many special events or tourism-based occurrences throughout the region. While some of the programs or incentives listed in this section may not be apparent in their applicability to special events or outreach to tourists, some can be modified to apply. Some strategies for special events TDM include:

- **Discounted Admission:** With many events offering tickets through online portals, they are also offering online parking passes. Discounted prices can be offered for those who access the event by using active modes or transit. Carpools are a much more common occurrence for special events as many people travel with family or friends.

- **Joint Marketing:** As with Bele Chere, jointly marketing events along with a special service to encourage attendees to use a TDM-related mode is effective. It is also more appealing when there is a high demand for parking in a limited area. Over time, attendees begin to associate the

event with the mode in which they travel there, especially when the benefits of taking a shuttle or reaching the event by bicycling or walking are also seen as a positive experience.

- **Coupons or Discounted Merchandise.** If it is difficult to determine or promote a mode share through discounted parking or admission prices, a TDM mode can be promoted by offering coupons or discounted merchandise for the event (e.g. handing out coupons to those who arrive on a bike or by transit). Companies affiliated with the event whose business interests are aligned with a mode (e.g. a bike shop) or promotion of environmentally-responsible transportation actions (e.g. an outdoor equipment store or hospital) will be more likely to partner on this incentive.

- **TDM Program Sponsorship.** The TDM program may wish to promote itself through sponsorship or incentives at special events, particularly if that event is likely to be patronized by the type of individuals who are a target market for TDM. A local job fair or meeting/conference for local businesses are examples of events where a TDM program may desire to have greater visibility.

- **TDM during Construction Activities.** In some states, the DOT uses mitigation monies associated with large-scale highway construction projects to promote TDM-related modes during construction. This includes limited-term express bus services, carpool/vanpool subsidies, and marketing of alternative modes. The TDM program should be involved through the MPO and NCDOT to identify major projects (e.g. widening of I-240 or widening of I-26) where such special TDM programs can be incorporated. Other regions have used construction activities to not only introduce a new service, but use the mitigation during a construction project to help grow a foundation for services such as express bus routes. Patronage of TDM-related services during such occurrences should be tracked for utilization and determination of which strategies may be sustainable beyond the life of the project.

Park-and-Ride Lots/Leases. NCDOT has begun to build park-and-ride lots near major interchanges or intersections across Western North Carolina. These lots should be encouraged as a component of major interstate highway projects or new interchanges as the DOT is often left with remnant parcels from these projects and the additional costs to pave and enhance a park-and-ride lot are a fraction of the total cost of the larger highway project.

In the past, the TDM program attempted to negotiate leases with private properties, primarily big box grocery stores or department stores, to designate parking stalls on the fringe of development as park-and-ride lots (referred to as hop-and-ride lots). There was limited interest in doing this by the property owners. As the TDM program is established, the staff should work with local government agencies to update ordinances to require such big box developments to set-aside space for use as a park-and-ride during weekday, work time hours (typically 7 am to 6 pm). The TDM program should develop a standard agreement to indemnify the property owner for any liability related to commuters using these lots.

Marketing, Educational Awareness and Promotions

Marketing and educational awareness are important elements of any successful TDM effort. TDM options and alternative services do not sell themselves, particularly in areas where long periods of traffic congestion are not as common. Marketing TDM-related services is critical to the success of the program. Employer/employee participants and potential participants need to be informed of the services available or provided as well as the benefits (personal, regionally and globally) by their participation.

Common educational awareness campaigns include:

- Targeted public education via workshops about pre-tax benefits;

- Program marketing to employers about TDM services;
- Development of community workshops on TDM strategies/services; and
- Development of extensive outreach campaigns.

Additionally, when employers consider implementing and supporting an overall TDM program or specific TDM strategies, employees are more likely to buy in and participate if key company officials directly endorse it and encourage employees to participate. National studies on TDM recognize that people are more likely to try and maintain use of an alternative commute mode if employers support the activity. Employers should be encouraged to provide all new hires, as part of the new hire orientation, specific TDM information and how to contact the staff of the employee-based TDM and regional TDM program for more information.

Once educated about the benefits associated with TDM, employers should be encouraged to incorporate and include employee provided alternative transportation use incentives or transportation subsidies as part of its employee's benefit package.

Carshare programs are led by private companies who find opportunities to place vehicles in downtown areas, urban neighborhoods and university campuses.

Any campaign should be designed to promote the brand of the TDM service, market it as a traditional business would, and build employer support for and encourage employee participation in alternative TDM travel options. Companies willing and interested in promoting TDM strategies and options should be recognized, publicized and identified as leaders in the community and business sectors. It is important that the TDM program develop strategies to identify:

- Market segmentation and how the various segments can be recruited;
- The most effective way to reach decision makers;
- Audiences to target, at least quarterly, for the short- and mid-term;
- Appropriate and effective messages for different audiences; and
- Promotions and special events (e.g. transportation fairs).

Employee Transportation Coordinator (ETC). It is recommended later in this Plan that the second full-time position for the TDM service in the Western North Carolina region be what is known as an Employer Assistance Representative (EAR). Employers serious about implementing TDM strategies should consider designating an individual at their worksite as an employee transportation coordinator (ETC). An ETC administers TDM program strategies and assists employees. Generally this function is added to an employee's existing job responsibilities for someone in the benefits or human resources departments, or within parking/transportation departments. Most ETCs are not transportation professionals but have an interest in promoting alternatives.

The EAR position is the liaison not only to employers but directly to the ETCs as the ETCs serve as a marketing leg of the TDM program. It is not expected that small companies would designate or employ an ETC, but larger companies with existing programs or interests in TDM are advised to either designate someone in this role or align someone's existing responsibilities to mirror, in part, those of an ETC.

Additional TDM Strategies/Options

Carsharing. Carsharing is beneficial as a separate initiative which is most often operated by a cooperative or other independent organization, rather than a government program. Carsharing is like a short-term car

rental cooperative. Rental rates are less expensive than a traditional car rental since the rental period tends to be shorter (2-3 hours) and most trips are local trips and for a short distance.

The idea enables people who can make most of their trips by transit, walking or bicycling to live a car-free lifestyle but have access to a car when it's needed. Individuals often participate in carsharing programs instead of purchasing a second car. The cost of driving is significantly reduced since participants only pay for a car when they are using one. Once people own a car, they tend to make more trips than they otherwise would. By eliminating the need to have a car, or a second car, car-sharing programs act as a "preventative measure" to trip generation.

Building on the concept of a carshare is a carshare station within a downtown or business complex where employers can use a carshare station for employees rather than having a fleet of vehicles.

Photo: carshare.org

Carsharing can potentially offer a more cost-effective method of providing mobility as well as make a useful contribution towards reducing the need for parking spaces at places of employment. Carsharing when used in an employment setting can aid in simplifying an employer's fleet management as well as employee mobility needs. Instead of directly owning and managing a fleet, a company can utilize car share vehicles from a car share company. This is most suitable in downtown areas, business parks or clustered employment locations, sometimes with a business association or property management company as the lead entity. The carshare company covers the cost of the vehicle, parking, insurance, gas and maintenance, thereby removing the burden of mobility management from the employer.

Carsharing/station car pilot. The goal is to identify an office/business park or office building location in close proximity to transit routes/stations. Prior research has shown that individuals choose to not utilize public transportation because of their perceived need to have available transportation during the workday, coupled with the reality that public transportation may not run during the day or that it does not go where an individual needs to go.

To address these barriers to utilizing public transportation, a federal or local grant could be obtained and utilized to offset and reduce overall hourly carsharing costs in order to attract users to the program and encourage employers to participate in the program. If proven successful, it is hopeful that companies within a downtown area, business park or building, as well as building owners/management, would partner and subsidize the program once grant monies cease.

As previously discussed, in a carsharing program a third-party vendor rents the use of vehicles on an hourly basis utilizing an hourly rate. Vehicles are available throughout the workday for the business park or building employees' exclusive use. Employees of participating companies are able to utilize the vehicles (at a reduced hourly rate which would be subsidized through the grant) for work-related business travel within the region, to commute to/from public transit locations, during lunchtime to run errands or go to lunch, etc.

This type of pilot project would encourage people to try alternatives other than commuting to work as a sole driver via their own personal car. Many times the ridership numbers aren't there to support a shuttle bus to/from an office/business park or solo company to a public transit or park-n-ride location. When cars are utilized, smaller numbers of employees are needed or required to participate thereby making it much easier to get the ball rolling and can evolve into more elaborate services.

Carsharing vehicles are used at the onset with expectations that service demand will increase so that a few years from program implementation shuttle vans or even buses could be able to replace the carsharing vehicles.

Similar programs have been successfully implemented around the country. Georgia Power initiated a THINK city car program in both their Employee Rideshare Program and a carshare program at Emory University. Georgia Power's program allowed employees who used alternate means of travel to lease electric vehicles

as their everyday vehicle. At Emory, university and campus business staff that commute to campus using public transportation accessed THINK city vehicles for use while on campus.

By combining car share and station car models, this would expand car use and participation potential to as many potential employees as possible. In addition, allowing employees to utilize these same vehicles for business use shows employers the savings potential, convenience and administrative ease by which this concept can be utilized on a permanent basis.

Universities and Colleges. Universities and college campuses have unique transportation challenges that offer opportunities for the development and integration of TDM strategies. College campuses can vary from being a large residential community to being primarily largely commuter colleges that exhibit issues and challenges associated with parking constraints, peak-period congestion and access. Many times, the university community (students, professors and staff members) are open-minded when it comes to exploring and trying transportation alternatives but are challenged to find TDM options that work due to a wide variety of work schedules and expectations. Students are more of a captive market, but are most suited for fixed route transit, some special event TDM, active modes, and one-time carpools, such as getting back home for the weekend.

The following TDM options may be more accepted in a University setting:

- University wide U-Pass/transit pass program, similar to those already in place in the region;
- Vanpool or smaller university shuttles for needs associated with university programs, such as WCU's programs in Asheville;
- Incentive programs for active modes, such as an on-campus bike shop that leases bicycles for a semester, performs repairs on student bikes, and teaches students basic maintenance skills;
- Bike barns that offer a more secure area for students who keep their bikes on campus year-round but prefer to keep their bikes in a location more protected from weather and vandalism;
- Limited free parking passes available on a per year basis for students who use other modes to commute but may have to drive on limited occasions. This keeps them from having to purchase a full-year parking pass;
- Carshare programs for students or faculty who do not have a car on campus but may need to make mid-day trips; and
- University transit shuttles which connect the main campus to off-site parking facilities, activity areas, residential complexes, off-site shopping centers, etc., similar to what is in use by UNC Asheville.

Bike/Transit-Vanpool Integration. Bicycling is a complementary mode to fixed route transit or vanpools, which can be used to further improve mobility. Biking is ideal for short (less than 5-mile) trips with multiple stops or on lower traffic roads while transit is most effective when the trip distances are longer and along busy corridors.

Coordination between the modes can be enhanced when bike racks and storage lockers are located near bus stops, bike racks are added to buses, and vanpools and bike routes provide connectivity to transit stops. This is more of a standard within the City of Asheville and Asheville Redefines Transit is consistently looking for ways to improve this interface.

Employers can further encourage bicycle commuting by employees by installing additional amenities such as shower and locker facilities for bicycle commuters. This should be encouraged through new development by the cities, towns and counties and, as the TDM program evolves, instituted in zoning ordinances.

As vanpools emerge as a commute option in the region, the TDM program should respond to the needs of riders who need to bike to the origin point or from the destination point of a vanpool route. This first-mile/ last-mile accommodation for vanpools can be accommodated by installing a hitch and bicycle rack on the vans.

Commuter Information Center. The Blue Ridge Commute Connections website was envisioned to be an online portal for dissemination of TDM-related programs and strategies. Although the survey for the region showed this was a little-known entity, that situation is likely due to its release occurring shortly before the previous TDM program was eliminated.

The Commuter Information Center can be a web page but should also be tied to other marketing efforts and brochures, with the TDM program staff incorporating its messages into employer-based outreach and as part of employer-specific newsletters or other one-on-one outreach to employees.

The Blue Ridge Commuter Connections website is an online portal for people seeking TDM information throughout the region. It should be maintained as the primary information source for TDM programs and refreshed once the TDM program is re-established.

Freight-based TDM. The Western North Carolina Transportation Alliance is a group organized through the Asheville Area Chamber of Commerce to bring together manufacturers and shippers in the region to identify ways to streamline transportation delivery and reduce the costs associated with freight-based trips. The companies working with the Alliance were experiencing increased transportation costs for long-haul deliveries and pick-ups associated with increased fuel costs and congestion in major metropolitan areas along their shipping lanes.

A key factor in transportation costs for manufacturers and long-haul shipping companies is that a truck load is taken to a destination and returns to its hub empty (or vice versa). For example, a grocery store chain sends trucks to Florida to pick up orange juice to deliver to its distribution centers. The truck typically makes that first leg of the trip with an empty load, therefore serving as a net financial drain on the cost of transporting the juice. The Alliance has worked to find partners who are serving similar destinations but with a full load on the way out of a distribution center to partner with the other company to fill the truck on both legs of the trip.

While this is not likely to be a primary emphasis of a TDM program, it is important to be involved in groups such as the Alliance to understand these issues as any partnership in this realm helps remove vehicle trips from the road and makes area employers more economically viable. The contacts the TDM program will have with other entities such as the MPO, RPO and NCDOT can also be valuable to help articulate these ideas when projects are being planned or designed.

Future TDM Program Options

The program briefly summarized below includes other emerging trends in TDM that will likely require substantial changes in the Asheville and Western North Carolina region before they are considered more feasible. It is important to understand what they are and track other emerging topics in TDM so that the TDM service is able to quickly adapt to the needs from new or emerging markets.

TDM Sales & Communications Training. Identify which existing regional agency or agencies when partnered together can provide TDM sales training to regional TDM professionals. These representatives should have a basic knowledge of TDM strategies with training focused on how to sell TDM strategies to employers to implement.

Vans or shuttle services to serve current and/or future park and ride facilities, commercial centers or transit hubs. Large employers who may have to locate on flat land or larger parcels of land in rural or unde-

veloped areas of the region could be connected to existing services by special vans or shuttle services. These would connect to a transit hub or other high capacity service (e.g. rail or bus rapid transit) if those types of services materialize in the region.

Location efficient mortgage. Location efficient mortgages increase the borrowing power of potential home-buyers in "location efficient" neighborhoods where mobility options are available so a buyer is not burdened with the cost of owning a vehicle. These are typically neighborhoods that are pedestrian-friendly areas with easy access to public transit, bicycle routes, shopping, employment and schools.

This mortgage recognizes that families can save money because the need to travel by car is reduced. Bankers are required to look at the average monthly amount of money that applicants would be spending on transportation and apply it to the servicing of a larger mortgage. This increases the purchasing power of borrowers when buying a home in location efficient neighborhoods, stimulating home purchases in existing urban areas.

In an era where credit is particularly difficult to receive from many financial institutions, particularly for people of limited means that may not own their own car (and are thus doubly in the marketplace for TDM services), location-efficient mortgages can help to resolve both the housing and transportation issues confronting many families.

Bus Rapid Transit support. Any high capacity transit service, rail or bus rapid transit (BRT) requires a set of complementary TDM strategies to support the mode. BRT is typically incorporated into areas that are less intensive from a density and development standpoint and will benefit from a TDM-based approach to enhance ridership. It is also more likely that a two-mode trip occur with a BRT system than with a typical fixed route bus system. Some effective TDM strategies for BRT are those that:

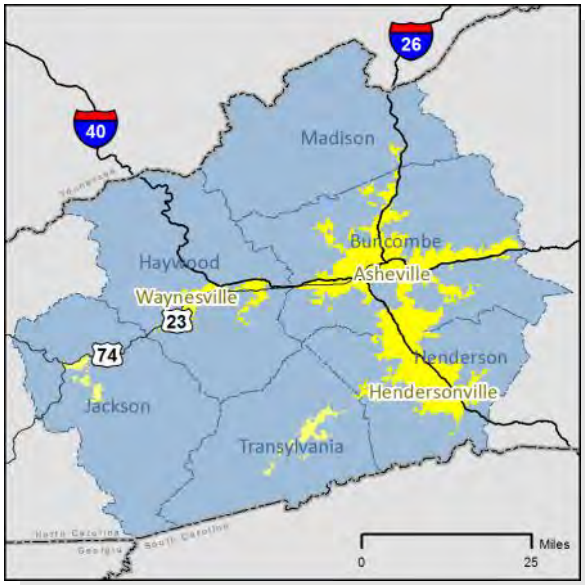
- Improve connectivity to BRT (bike paths, park-n-rides, parking adjacent to BRT stops);
- Provide multi-modal connectivity (via station bikes, carsharing, etc.) to/from BRT stations;
- Provide information and educational awareness on the BRT service;
- Provide connections (via shuttles) to/from employment centers and BRT stops as well as neighborhoods and BRT stops;
- Provide incentives (discounted or fully subsidize passes) for transit use; and
- Provide space for bicycles on-board BRT vehicles.

If high capacity transit services such as Bus Rapid Transit are introduced in the region, it will be critical to provide bicycle and pedestrian facilities to link the modes for first-mile / last-mile trips.

Chapter 3: TDM for the French Broad River Region

Transportation Demand Management (TDM) in Western North Carolina is in a state of flux. The economic downturn of the late 2000s that followed rapid growth in the region created a new series of challenges for addressing transportation needs in a mountainous area where travel has never been easy. As the region grew, the need to look beyond city or county limits to promote non-single occupancy vehicle travel for many purposes became a responsibility that was difficult to find a niche within the existing governance framework.

The rivers and streams of the Blue Ridge Mountains have shaped the transportation system and defined growth patterns for communities. While some challenges have been overcome by advances in engineering and technology, the nature of the French Broad River region with the corridor between downtown Asheville and downtown Hendersonville as its employment hub, makes it a destination for many small towns and rural counties on the periphery. Workers from locales are far away as 45 miles away from Asheville's or Hendersonville's city center commute to the region each day. Medical facilities draw patients from an even broader geographic area. The area is an education hub for all of Western North Carolina.



The French Broad River Region is defined, loosely, by the counties shown in this map. Urbanized area boundaries are shown in yellow and illustrate the way in which river valleys and streams shape growth patterns and transportation corridors. The counties shown have a primary influence in terms of commuting patterns on the region. Counties not highlighted on this map still may influence the region's transportation patterns but to a much lesser degree.

The area is a tourism destination, not just for the Southeast, but for much of the eastern United States. It has attractions such as the Blue Ridge Parkway, the Biltmore Estate and nearby Great Smoky Mountains National Park that garner attention worldwide. And those who have visited in the past are now retiring in the mountains to enjoys its small towns, explore and live in its cities, be close to its medical facilities, and access its recreational opportunities.

It should come as no surprise that this myriad of changes and evolving influences have made it hard for a Transportation Demand Management program to find a focus. Should the region promote more traditional TDM such as carpools and vanpools for long distance commuters? Should it take advantage of a recreational culture where residents may be more likely to use active modes of travel on foot or by bike? Is car-sharing possible? How can the region reduce transportation demand at the peak of its tourist season and support transportation options for its visitors? Are there ways to reduce freight demand on the region's constrained interstate highways as they become cross-country thoroughfares for goods movement?

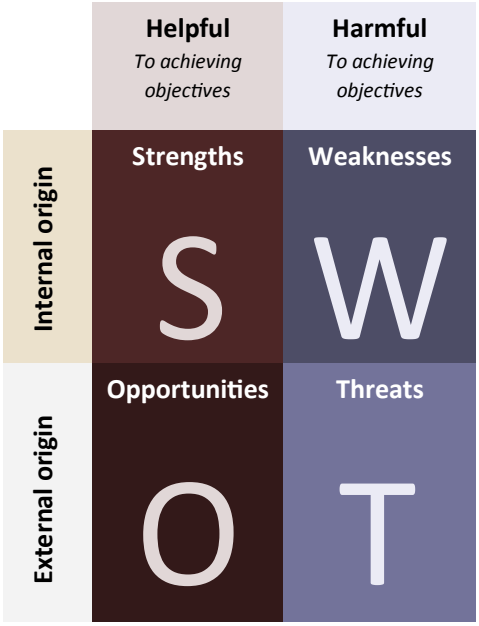
It is the goal of this Plan to help define a set of strategies to carry the region forward in establishing not only a set of TDM programs and services, but a TDM culture that is the hallmark of such efforts in many regions of similar size across the United States. In fact, some of the best TDM case studies are in regions with a population less than 500,000 with a central city with a population less than 200,000.

Nearby regions such as Knoxville, TN, and Roanoke, VA, have successful TDM programs and similar geographic characteristics. Western cities such as Fort Collins, CO, Missoula, MT, and Boise, ID, have successfully developed a culture of TDM that is a vital part of their set of transportation options and economic development strategies. Other regions such as Tallahassee, FL, and Louisville, KY, have management frameworks that may serve the French Broad River region as it looks to bolster its TDM programs.

The following pages summarize the results of a Strengths, Weaknesses, Opportunities and Threats analysis and offer a glimpse into how current transportation services and programs are performing across the region.

SWOT Analysis of Transportation in the Region

An assessment of strengths, weaknesses, opportunities and threats (SWOT) is a common practice in strategic planning, particularly when there is a sense that an organization or a service such as TDM is in need of an evaluation. Later in this Plan there will be an implementation chapter and business plan for short- (0-3 years) and medium-range (3-5 year) action items to be undertaken by staff dedicated to re-establishing a TDM program in the French Broad River region.



The Plan's Steering Committee, working with a consultant team, undertook steps for the SWOT analysis through a facilitated discussion and professional evaluation of the region through observations, interviews with stakeholders and employers, and professional experience.

A SWOT evaluation was undertaken to discuss the transportation system as a whole in the French Broad River region rather than just focusing on TDM programs or outcomes. This approach was necessary so that the Plan could accurately reflect regional attitudes toward transportation that can translate into how best to develop TDM programs and define roles and responsibilities for TDM among the region's many agencies and municipalities.

Strengths are seen as helpful features of the transportation system that can help build a TDM program. They are generally internal to a TDM operation or require influence of mainline agency operations. Strengths identified by the Committee include:

- The region does not have a lot of congestion.
- Retiree population spreads the demand on the transportation system in terms of peak hour influence and geography.
- Downtowns are strong in the larger cities and smaller towns.
- Strong cultural interest in commute options among most cities, small businesses, educational institutions, advocacy groups, non-profit organizations, social service agencies.
- Some hotels are located where non-SOV travel is possible.
- Preliminary conversations with carshare companies for City of Asheville.
- MPO member agencies are recognizing there is a strong economic and health interest in commute options.
- Strive Not to Drive campaign in Asheville is growing.
- Use of existing designated and informal park-and-ride lots is encouraging.

Weaknesses are viewed as internal, harmful features that prohibit growth or effectiveness of the TDM program. Some aspects of such weaknesses may have internal influence or closely aligned influences from transportation agencies or services. Weaknesses identified by the Committee include:

- The TDM program is at a point of having to start over.
- The multi-modal grid is varied and constrained due to topography.
    - Hendersonville has several conflict points with criss-crossing of highways.
    - Exurban places such as Fletcher/Arden have only one major corridor.
    - Buncombe is a large "cross" defined by I-40 and I-26.
- Connections between counties are easy by car; not by other modes.
- Hot spot at Smokey Park Bridge.
- The coverage and frequency of existing transit services is limited.

- Need for better information integration/dissemination about transportation options.
- Few options for transit during non-commute times (to airport, on weekends, service after 6 pm or 7 pm).
- Limited short-term options for funding (e.g. STP-DA allocated through 2017; may have some other FTA programs to tap in meantime; MAP-21 has funding in state of flux).

Opportunities are typically an external influence and seen as helpful to establishing and maintaining a TDM program with little personnel or financial assistance from the mainline agency. Opportunities identified by the Committee include:

- Presence of educational institutions (UNCA, Warren Wilson College, Mars Hill College, Brevard College, AB Tech, Blue Ridge CC, and Haywood CC) creates a captive market and advocacy options.
- Build upon small approaches already underway by some employers.
- An "evolutionary" approach to services for communities based on population, employment and density, especially for those that don't justify bus services (carpool → vanpool → express bus → fixed route services).
- Getting something to park-n-ride lots other than bus services; vanpools acting as express buses until service characteristics and funding justifies greater investment.
- Topographic / geographic constraints lead to greater density and thus opportunities to capture TDM-related trips.
- Some organizations have interest in reverse commute and dependent riders options.

While the Smokey Park Bridge on I-240 / I-26 near downtown Asheville was viewed as one of the region's few locations where congestion can pose a problem, it is also an opportunity to engage NCDOT for mitigation through TDM programs during future reconstruction projects to replace the bridge, widen I-240 near Asheville, or widen -26 in Buncombe and Henderson Counties.

- Align work shifts to transportation schedules.
- Tourism is seen as "one-time" event; market the region or pockets as places to "come and park once"; similar to resort/ski towns.
- Asheville Area Chamber of Commerce's WNC Transportation Alliance for freight.
- Special events: New arena at UNCA, downtown, McCormick Field, Festivals, Small Town Events, bicycle corrals.
- Long-distance commutes are common between counties.
- Mitigation measures as part of major NCDOT construction projects.

Threats are also an external influence and have the ability to negatively influence the effectiveness of the TDM program's mainline agency through continuation of existing actions or efforts that work against, oftentimes unintentionally, the goals of the program. Threats identified by the Committee include:

- Resources to ensure both robustness and resiliency of transit services.
- Different expectations for options in different communities (based on history, politics, location, etc.).
- Need for framework for jurisdictional coordination: Planning, policies (not just local, but state), information, operations.
- Limited deployment of Intelligent Transportation Systems; investments geared toward long-distance travel through the region, not within it.
- People don't feel they can "get there", even if they can.

- ♦Fletcher/Arden/Skyland/Mills River areas between Asheville and Hendersonville have jobs/ housing mismatch.
- ♦Need for daycare options and affordable housing near existing or planned services, particularly in unincorporated, but urbanized, areas.
- ♦Attractions such as Blue Ridge Parkway and Biltmore Estate are vehicle-centric (e.g. can't walk or bike to Biltmore to buy tickets at gate; have to visit estate by car).
- ♦Need to recognize value of concerted effort for TDM; Gap in Asheville/MPO program creates a challenge in re-establishing the effort.

The State of TDM in the Region

The prospects for re-starting the TDM program in Western North Carolina are not bleak by any measure. There are several strong indicators in the region that point to numerous opportunities for partnerships, strengthening of existing programs, improving non-traditional travel options and building upon a very successful transit network.

In defining the different measures for TDM in the region, the consultant team sought input from a broad set of data sources and service providers. Historically, TDM has focused on rideshare elements such as ride-matching, carpools, vanpools and, to varying degree, public transit. Public transit and TDM have sometimes been viewed as separate elements of the transportation system. Now public transit is being viewed as a very strong element of holistic TDM programs.

The categories summarized in this section represent the core elements of TDM, followed by other aspects of the region's transportation system that are either tangentially related to TDM or have the potential to support or incorporate TDM in the future.

As noted in the region's Strengths, there are not major pockets of congestion that impact travel times. The major demand for TDM is then likely to come from the distance of commutes in the region. *Exhibit 3-1* summarizes mean travel time to work from the 2010 Census. Madison County has the highest mean travel time to work while Jackson County has the lowest. Mean travel times for individual cities is lower than the county averages due to a higher concentration of jobs within those cities combined with a higher population concentration.

***Exhibit 3-1*: Population & Mean Travel Time to Work – Census (2010)**

County - City / Town*	Population	Mean Travel Time to Work
Buncombe	**242,000**	**20.7**
Asheville	*84,500*	*18.3*
Black Mountain	*8,000*	*18.7*
Woodfin	*6,200*	*18.1*
Henderson	**108,000**	**21.0**
Fletcher	*7,300*	*20.6*
Hendersonville	*13,300*	*17.4*
Haywood	**59,000**	**22.3**
Waynesville	*9,900*	*16.9*
Madison	**21,000**	**31.5**
Polk	**21,000**	**27.0**
Transylvania	**33,000**	**21.5**
Brevard	*7,600*	*16.4*
Jackson	**40,000**	**19.7**
North Carolina	**9,700,000**	**23.4**

*** Those cities/towns where mean travel time was summarized in the 2010 US Census data.**

Means of Travel to Work. The Census Bureau's American Community Survey (ACS) tracks data related to mode traveled to work by persons 16 years of age and older. Population estimates are developed by the ACS in years in between the decennial Census.

Exhibit 3-2 summarizes Means of Travel to Work estimates published by the ACS for a five-year period from 2006-2010. The table is organized by a summary of statistics for the study area counties used for this Plan, then broken down by Core Counties (defined as Buncombe, Henderson and Haywood Counties based on the

volume of work trip flows between them, as summarized later in this Plan) and Other Counties (Madison, Polk *(still exploring degree of transportation trip linkages)*, Transylvania and Jackson Counties, defined as other area counties with some influence on the commute shed within the region).

Asheville, Hendersonville and Waynesville data has been summarized as well based on their status as county seats within the three core counties. ACS data is not a full statistical sample as is done with the Census, rather it is a sampling of statistics and therefore becomes less robust in terms of its outputs when evaluating data in smaller communities. Based on the data provided by ACS, Asheville is the only city or town within the region that appears to have a sample size similar to what is collected for counties.

Below are some highlights of the ACS data:

- The region, as well as the group of Core Counties and Other Counties, generally performs better than the state of North Carolina as a whole for carpools, walking, bicycling, and work at home. North Carolina's rate for transit trips is higher than the region but lower than Asheville.
- Like most regions of the United States, commuting by carpool is the most utilized TDM-related mode. The non-core counties have a higher percentage of carpooling (13.3%) than the core

Exhibit 3-2: **Means of Travel to Work—American Community Survey 5-Year Estimates (2010)**

	Total Workers (16 yrs+)	Drove Alone	Carpool	Transit	Walked	Bicycle	Work at Home	Other	No Vehicle Avail.
Study Counties	**226,745**	**78.9%**	**11.9%**	**0.5%**	**2.3%**	**0.4%**	**5.1%**	**0.8%**	**2.3%**
Core Counties	**180,201**	**79.2%**	**11.6%**	**0.6%**	**2.0%**	**0.4%**	**5.3%**	**0.8%**	**2.3%**
Buncombe Co.	110,280	78.3%	11.4%	0.9%	2.3%	0.6%	5.7%	0.8%	2.6%
Asheville	*39,308*	*75.9%*	*10.2%*	*2.2%*	*2.7%*	*1.2%*	*6.6%*	*1.2%*	*4.6%*
Henderson Co.	44,195	80.1%	12.5%	0.1%	1.7%	0.1%	4.7%	0.8%	2.2%
Hendersonville	*4,856*	*78.0%*	*10.6%*	*0.1%*	*4.2%*	*0.4%*	*4.3%*	*2.3%*	*4.3%*
Haywood Co.	25,726	81.6%	10.5%	0.3%	1.5%	0.3%	5.0%	0.8%	1.4%
Waynesville	*3,746*	*85.8%*	*6.1%*	*0.0%*	*1.7%*	*0.7%*	*4.5%*	*1.2%*	*2.9%*
Other Counties	**46,544**	**77.7%**	**13.3%**	**0.3%**	**3.4%**	**0.2%**	**4.0%**	**1.0%**	**2.2%**
Madison Co.	8,214	77.0%	13.3%	0.0%	3.0%	0.0%	6.5%	0.2%	0.7%
Polk Co.	8,119	78.2%	13.7%	0.7%	1.5%	0.0%	5.4%	0.5%	2.2%
Transylvania Co.	12,706	76.1%	14.3%	0.0%	2.9%	0.6%	4.2%	1.9%	2.8%
Jackson Co.	17,505	79.0%	12.4%	0.4%	4.9%	0.2%	2.2%	1.0%	2.4%
North Carolina	**4,205,946**	**80.5%**	**11.4%**	**1.0%**	**1.8%**	**0.2%**	**3.9%**	**1.1%**	**2.5%**

counties (11.6%), which likely represents their dependence upon employers in the core counties which creates long-distance commutes, thus motivating individuals to seek a carpool partner.

- Teleworking (Work from Home) is the second-most utilized TDM-related mode, garnering 5.1% of the workers in the study area.
- Due to population base and the scale of service provided by Asheville Redefines Transit, Asheville has the highest transit mode share (2.2%) in the region.
- Jackson County has the highest percentage of commuters who walk to work, which is likely reflective of the influence of students at Western Carolina University.

Fixed Route Public Transit. Two fixed route transit systems, Asheville Redefines Transit (ART) and Apple Country Transit in Hendersonville, provide service in the region. Each is challenged to meet local transportation needs by the nature of available funding sources, local development patterns and the size of the city in which they operate.

Public transit is often expected to serve three primary roles within a community:

1. Social service for those who may be dependent upon the system for job access and other basic transportation needs;
2. Commuter service for those who find it convenient or necessary to get to and from work;
3. Economic development in providing for basic transportation needs, retaining and attracting businesses, and promoting more compact development patterns.

Even the largest transit systems in the United States struggle to serve expectations related to all three of these roles. To serve basic social service needs demands the bulk of capital and operations funding while transit systems tend to work with the few remaining resources cater to the needs of commuters to bolster ridership. The role of economic development for a transit system varies greatly in terms of how it is quantified or even recognized within a community.

The nature and size of the communities in which ART and Apply Country Transit operate make it very difficult to fully meet these three expected roles. Asheville Redefines Transit operates in a region of more than 200,000 persons; however the area in which they serve is confined primarily within the city limits of Asheville. This equates to a reported service area of approximately 73,000 people (2010). Apple Country Transit similarly focuses its services within the city limits of Hendersonville with a route extending to the Asheville Regional Airport. This represents a service area of approximately 15,000 people (2010).

Given these circumstances, the two fixed route systems in the region perform very well. *Exhibit 3-3* summarizes two key TDM-related statistics—passenger miles and passenger trips—provided for ART and Apple Country Transit for the fiscal year 2011.

ART reports various operating statistics each year to the Federal Transit Administration's National Transit Database (NTD). The NTD summarizes these reports by each agency and publishes a full dataset for all transit systems in the United States reporting to NTD. Apple Country Transit is not at a size to require reporting to NTD; information was generated by Apple Country Transit staff . The latest full dataset published by NTD is for fiscal year 2010.

To gather a sense of how ART's passenger miles and passenger trips rank among peer systems in the United States, the full NTD dataset was sorted to include transit service with service areas with a population between 50,000 and 100,000. There are 120 transit services in the United States operating in service areas in this range.

***Exhibit 3-3*: 2011 Operating Statistics for Area Fixed Route Transit Services (2011)**

Service	Service Area Population	Passenger Trips	Passenger Miles
Asheville Redefines Transit	73,000	1,467,000	6,800,000
Apple Country Transit	15,000	93,000	170,000

ART ranks very high among its peer regions:

- The 7.3 million passenger miles in 2010 ranks 14th out of 120 systems (top 12%); and
- The 1.7 million passenger trips provided by ART ranks 22nd out of 120 systems (top 18%).

The Top 25 systems in the United States are shown in *Exhibit 3-4* (Passenger Miles) and *Exhibit 3-5* (Passenger Trips). The ranking of all 120 systems is shown in the Appendix.

ART has completed its reporting for FY 2011 to NTD, but those figures are yet to be published as a full dataset for comparison. The statistics indicate ART experienced a 4% increase in passenger trips from 2010 to 2011, even with a 10% decrease in revenue miles (number of miles in which the bus system is providing service on routes in a year; this does not include "deadhead" miles to and from the bus garage or maintenance).

The almost 7.5 million passenger miles (2010 NTD), if we assume that passenger miles are roughly equated to a reduction in vehicle miles traveled, equates roughly to a hypothetical entirely car-free 24-hour period per year in Buncombe County where no vehicles make any trips, have no accidents, and produce no emissions.

Carpooling, Vanpooling & Park-and-Ride. Many regions created a TDM culture over the past three decades since the energy crisis in the 1970s. The carpooling, vanpooling and park-and-ride systems within those regions are the workhorse of TDM on long-haul commute trips. Carpool trips generally range from 9% to 13% of work trips in most communities. 2010 Census data for mode share to work is not yet available for Western North Carolina. There are no vanpools that currently operate within the region.

Four park-and-ride lots are currently in use in the region and NCDOT is planning to construct more, mostly on remnant parcels near major highway intersections or interchanges. The four existing lots were observed to gather an understanding of occupancy rates, with each having a rate of 57% or greater, including 100% occupancy in four counts at the Mars Hill exit of I-26. Each lot was observed at least four times on Tuesday, Wednesday or Thursday between the hours of 10 am and 11 am to capture a typical day and time at which occupancy was stable. The occupancy observations are summarized in *Exhibit 3-6 (page 33)*.

Ridematching. *The consultant team is meeting with Triangle Transit, which manages the sharetheridenc.org website, in September to work on obtaining region-specific information related to input from commuters to this site.*

Walking. A pedestrian mode share for commuting is difficult to capture in data provided by the Census. In theory, everyone is a pedestrian on both ends of their commute since no one really works and lives in their car. Walking as a form of commuter transportation is highly dependent on origins and destinations that are linked within very close proximity such as a neighborhood next to a downtown area.

As seen in *Exhibit 1-2*, walking mode share is heavily influenced by major pedestrian generators such as colleges and downtown areas. Asheville and Hendersonville each have mixed use downtowns with a concentration of professional and public sector jobs along with neighborhoods nearby that contribute to a higher walking mode share than unincorporated areas and smaller towns.

***Exhibit 3-4*: Annual Passenger Miles—Rank of Transit Services, 50,000 to 100,000 Population (2010) - Top 25**

Rank	Transit Service	City	State	Svc AreaPop.	PassMiles
1	Kings County Area Public Transit Agency	Hanford	CA	51,965	23,722,542
2	Centre Area Transportation Authority	State College	PA	83,444	19,421,696
3	Chapel Hill Transit	Chapel Hill	NC	76,759	15,523,054
4	University of Michigan Parking and Transportation Services	Ann Arbor	MI	64,000	13,815,344
5	Greater Attleboro-Taunton Regional Transit Authority	Taunton	MA	98,175	12,736,864
6	Greater Roanoke Transit Company	Roanoke	VA	94,911	11,698,527
7	Mid Mon Valley Transit Authority	Charleroi	PA	56,508	11,247,126
8	Chittenden County Transportation Authority	Burlington	VT	86,468	9,728,928
9	Yakima Transit	Yakima	WA	92,035	9,216,410
10	St. Cloud Metropolitan Transit Commission	St. Cloud	MN	98,828	8,924,187
11	Ames Transit Agency	Ames	IA	50,276	8,380,233
12	Unitrans - City of Davis/ASUCD	Davis	CA	66,698	7,538,677
13	Bloomington Public Transportation Corporation	Bloomington	IN	69,291	7,312,029
14	**Asheville Transit System**	**Asheville**	**NC**	**72,789**	**7,281,383**
15	Cache Valley Transit District	Logan	UT	80,000	6,843,192
16	City of Lompoc - Lompoc Transit	Lompoc	CA	55,666	6,619,683
17	Blacksburg Transit	Blacksburg	VA	56,260	6,586,770
18	Williamsport Bureau of Transportation	Williamsport	PA	69,764	6,269,430
19	Muncie Indiana Transit System	Muncie	IN	67,430	6,186,449
20	Greater Portland Transit District	Portland	ME	94,873	5,948,026
21	Williamsburg Area Transit Authority	Williamsburg	VA	57,000	5,760,741
22	Western Contra Costa Transit Authority	Pinole	CA	62,000	5,705,554
23	Cedar Rapids Transit	Cedar Rapids	IA	97,716	5,688,125
24	City of Lawrence	Lawrence	KS	90,000	5,528,423
25	River Valley Metro Mass Transit District	Bourbonnais	IL	63,686	5,485,399

***Exhibit 3-5*: Annual Passenger Trips—Rank of Transit Services, 50,000 to 100,000 Population (2010) - Top 25**

Rank	Transit Service	City	State	Svc Area Pop.	Pass. Trips
1	Chapel Hill Transit	Chapel Hill	NC	76,759	7,552,486
2	Centre Area Transportation Authority	State College	PA	83,444	7,294,893
3	University of Michigan Parking and Transportation Services	Ann Arbor	MI	64,000	6,366,518
4	Ames Transit Agency	Ames	IA	50,276	5,377,155
5	University of Iowa	Iowa City	IA	71,372	3,964,630
6	Unitrans - City of Davis/ASUCD	Davis	CA	66,698	3,507,357
7	Blacksburg Transit	Blacksburg	VA	56,260	3,383,077
8	Bloomington Public Transportation Corporation	Bloomington	IN	69,291	3,265,274
9	Greater Lynchburg Transit Company	Lynchburg	VA	80,846	3,010,123
10	City of Lawrence	Lawrence	KS	90,000	2,912,495
11	Williamsburg Area Transit Authority	Williamsburg	VA	57,000	2,799,800
12	Chittenden County Transportation Authority	Burlington	VT	86,468	2,498,883
13	Greater Roanoke Transit Company	Roanoke	VA	94,911	2,491,742
14	St. Cloud Metropolitan Transit Commission	St. Cloud	MN	98,828	2,414,575
15	Columbia Transit	Columbia	MO	57,000	2,204,403
16	Charlottesville Area Transit	Charlottesville	VA	81,449	2,195,455
17	Muncie Indiana Transit System	Muncie	IN	67,430	1,991,693
18	Cache Valley Transit District	Logan	UT	80,000	1,925,316
19	Iowa City Transit	Iowa City	IA	67,026	1,889,152
20	Kenosha Transit	Kenosha	WI	91,500	1,665,508
21	University of Arkansas, Fayetteville	Fayetteville	AR	58,047	1,575,149
22	**Asheville Transit System**	**Asheville**	**NC**	**72,789**	**1,563,567**
23	Yakima Transit	Yakima	WA	92,035	1,501,368
24	Annapolis Department of Transportation	Annapolis	MD	90,000	1,479,848
25	Greater Portland Transit District	Portland	ME	94,873	1,440,200

Source: National Transit Database, Federal Transit Administration (2010)

***Exhibit 3-6*: Observed Occupancy Rates for Area Park-and-Ride Lots**

Location	Status	Occupied	Total Spaces	% Occupancy
Canton, I-40 Exit 33	Designated	16	28	57%
Rosman, US 178 / US 64	Designated	9	15	60%
Barnardsville, I-26 Exit 15	Informal	8	12	67%
Mars Hill, I-26 Exit 11	Informal	14	14	100%

Jackson County (Western Carolina University) and Madison County (Mars Hill College) have institutions that tend to skew their walk mode share due to the captive market of students. In these two locations, the population base for the county is small enough that the colleges greatly influence the figures for walking.

Bicycling. Asheville's mode share for bicycle commuting (1.2%) is the highest in the region, influenced by its status as the largest city with a vibrant mixed-use downtown. The presence of UNC Asheville also impacts this mode share as well as investment in bicycle infrastructure such as bike lanes and greenways. Asheville has 20 bike lockers available for rent in the downtown area. Many cities and towns within the region require that new development to accommodate bicycle parking.

The size of communities elsewhere in the region combined with high percentages of county populations living in rural or unincorporated areas, long commute distances, and lack of bicycle lanes and greenways in these areas, prohibit many commuters from being able to commute on a bike.

Bicycling is growing as a mode share across the United States in small, medium and large cities as residents in downtown areas, older neighborhoods and mixed use development are seeking alternatives to making every trip by car. Bicycles offer a greater combination of mobility and independence for users than other non-SOV modes, even public transit in some cities.

For special events, a local advocacy group, Asheville on Bikes (AoB), manages "bicycle corrals" that provide valet parking and a secure area for bicyclists to park their bikes during events such as Downtown After 5, Bele Chere, Lexington Avenue Arts Festival, and some concerts at the Orange Peel. In 2011, AoB corralled almost 1,500 bikes at special events and have corralled 1,350 (through August) in 2012

Working from Home / Telework. Working from home is typically the third highest "mode share" for commuters even though it is not a mode. The Counties analyzed for this study have a higher share of people working from home (5.1%) than North Carolina (3.9%) as a whole. Asheville (6.6%) and Madison County (6.5%) have rates nearly 70% higher than North Carolina's statewide rate.

There are several factors that influence this:

- Niche markets in downtown areas due to the tourism, cultural activities and artist populations in the mountains allow more people to work from home or have their business at their home.
- Retirees may still earn income while working from home doing specialized work or working under contract to their former companies.
- Professionals who live in the area are oftentimes affiliated with larger national companies who do not have a major presence in Asheville or have major operations in other parts of the region. These professionals may work from home all or some days of their work week.

- The dispersed nature of employment centers in the region requires a two-person household to choose carefully where they live and how they commute. For example, a professor at Western Carolina University with a spouse who is a non-academic professional may have a hard time finding employment in small communities in Jackson County. Therefore, one member is either commuting a long distance or finding ways to work from home full-time or part-time.

Demand Response / Human Service Transportation. Public transportation services such as demand response systems tend to be viewed as more of a social service rather than a commuter service. Demand response agencies provide door-to-door service to their clients, many of which are reliant upon the service for medical appointments and other social service-based trips. Some riders are commuters who have no ability to drive a vehicle or have no access to a vehicle.

Demand response services are critical in providing transportation options within the region's rural and unincorporated areas. Fixed route transit systems generally have only two or three main sources of funding—federal, state or local—that is eligible for all types of passengers. Demand response systems must organize riders among several funding sources, primarily social services or medical-based programs, according to each individual's eligibility for a funding source. Some riders may be eligible for more than one funding source, which leads to agencies finding the program best suited for that rider based on remaining balances in each funding program.

The business model for demand response services in North Carolina is more similar to what could be expected from a vanpool program than a traditional bus service agency due to the type of trips and the type of vehicles. *Exhibit 3-7* summarizes FY 2011 or FY 2012 data from the area countywide human service transportation agencies.

Strive Not to Drive. The Strive Not to Drive (SNTD) week held annually in May is focused on promoting transportation options. The event focuses on Buncombe County with partners promoting transportation options through various employers whose influence stretches beyond the county lines. The event began in the 1980s as a Bike to Work Day and has since expanded.

Aside from basic promotion of transportation options, SNTD organizes several events during the week:

- Pledges from employees of area businesses to strive not to drive;
- Bicycle ride led by the Mayor of Asheville;
- Bicycle corrals at Downtown After 5;
- Multi-modal fashion show; and

***Exhibit 3-7*: Demand Response Transit Statistics**

Agency	Population	Passenger Trips	Passenger Miles
Mountain Mobility (Buncombe Co.)	242,000	159,000	1,500,000
WCCA / Apple Country (Henderson Co.)	108,000	52,200	218,000 *(vehicle service miles)*
Haywood Co. Public Transit	59,000	28,200	415,000 *(vehicle service miles)*
Madison County Transportation Auth.	21,000	29,600	226,000 *(vehicle service miles)*
TRANSPORT (Transylvania Co.)	33,000	44,000	—
Jackson Co. Transit	40,000	—	—

- Commuter stations with breakfast, water and promotional items.

Freight. The influence of freight movement through Western North Carolina is largely dependent upon manufacturers and ports that exist outside the region. The impacts of freight traffic on the region's transportation system was evident during the I-40 rock slide closure in 2009 / 2010 when truck traffic was detoured along I-26 to and from eastern Tennessee.

Locally, the Asheville Area Chamber of Commerce organized the Western North Carolina Transportation Alliance to begin a regional conversation among manufacturers and freight haulers in response to rising fuel prices in 2007 and 2008. The goal of the Alliance was to identify ways in which manufacturers and haulers within the region might coordinate shipments to reduce the amount of empty loads on return trips (backhaul) that result in a doubling of the transportation cost to complete a round trip on a one-way shipment. The impact had almost $300,000 in savings for the four companies involved.

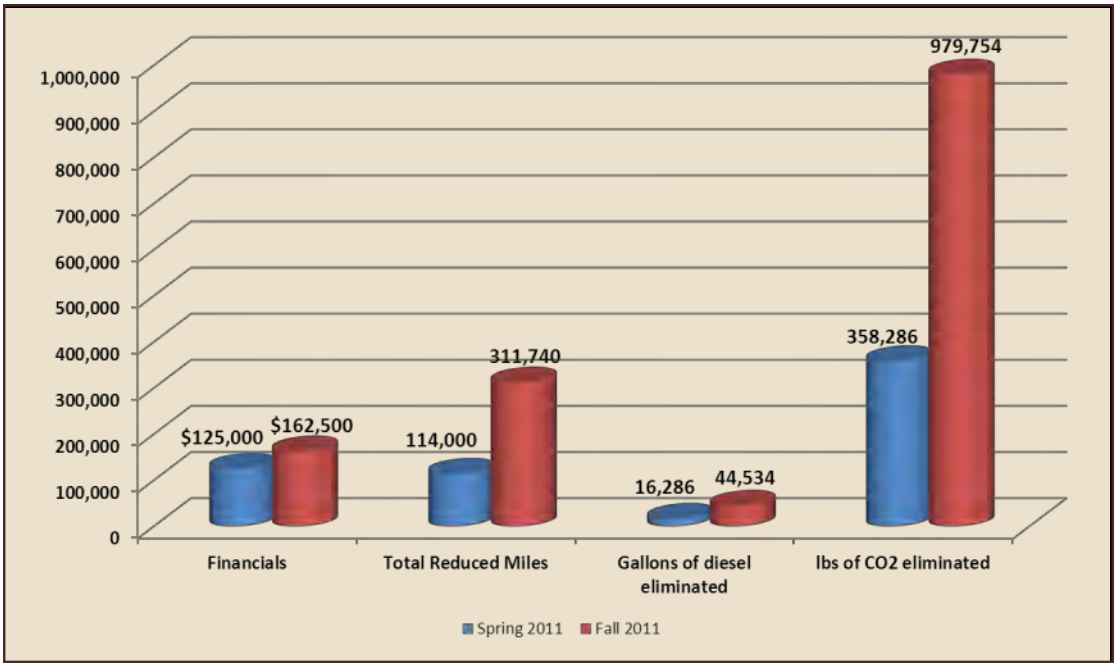
The Alliance has found a success story among four area companies, including two companies with shipments to central Florida whereby one company ships its products to the Orlando area and another company fills that load on shipments to WNC from Orlando. The effort has reduced travel demand on those routes, saved the companies on fuel costs, and reduced CO2 emissions. In 2011, the Alliance tallied the results of this effort for the year and they are shown in *Exhibit 3-8*.

Special Events.

Western North Carolina hosts several special events, particularly during the peak tourist seasons in fall and summer. The Plan's Steering Committee expressed a desire for TDM to be integrated more successfully into promoting the region's tourism destinations. The special events are a starting point to developing specialized TDM services that cater to visitors or one-time riders.

Asheville Redefines Transit provides the most visible special event transportation service with its shuttles for the annual Bele Chere in downtown Asheville. During the July 2012 event, ART provided more than 15,000 trips in three days—a 14.7% increase over 2011.

***Exhibit 3-8*: WNC Transportation Alliance—2011 Impact from Collaboration among 4 Companies**



Special events are an opportunity to introduce residents and commuters to TDM services. If they find the service to be efficient, clean, and customer friendly, perhaps they will be willing to try a different mode of travel to make their commute.

It can be difficult for transit agencies to mobilize the best buses in their fleet for these events if other fixed route services coincide with special event transportation. Transit agencies must also seek special permission in some instances to provide special event services due to federal transportation regulations that do not allow them to directly compete with charter bus service.

Other Initiatives.

- **Commute Trip Reduction Programs.** There are no concerted commute trip reduction programs or ordinances in place in the region.
- **Incentive Programs.** Incentive programs are provided by some employers to promote non-SOV commutes. No marketing programs are active in the region to encourage or incentivize such commutes. There is not an active Guaranteed or Emergency Ride Home program.
- **Carshare.** No carshare programs operate in the region. Local organizations along with UNC Asheville have been exploring options with companies to provide carshare programs at the campus, downtown and in other high density city neighborhoods. Many carshare programs are managed by private companies, even rental car agencies.
- **Corridor Studies.** Corridor studies conducted by NCDOT, cities and towns do not include broad-based incorporation of TDM impacts and themes. Some address active transportation modes and public transit.
- **Electric and Alternative Fuel Vehicles.** While such vehicles do not have a direct impact on reducing demand on the transportation system, the reasons for promoting use of these vehicles and providing charging stations aligns closely with goals of TDM for emission reductions and improvements to air quality. There are 19 vehicle charging stations located in Buncombe County that have a total of 35 charging plugs.
- **Intelligent Transportation Systems (ITS).** The ITS systems in place in the region are limited to variable message signs. TDM or special event messages are not part of the operations of these systems. The 511 information system is geared mostly toward incident and weather-related impacts on the transportation system.
- **TDM through Construction Impact Mitigation.** NCDOT does not incorporate mitigation measures related to TDM on major construction projects, as is seen in some other states. With major interstate construction projects looming, such as the proposed I-26 widening and the I-240 widening, these may provide opportunities to pilot TDM services and incentive programs to reduce demand during the construction phase. Some regions, such as Sacramento, used TDM-related mitigation funds from the I-5 construction project to determine which TDM methods were sustainable for the region once construction was complete.

Policy & Plan Review

A number of transportation, land use and economic development plans in the region were reviewed to see to what extent transportation demand management is already supported in the region. This helps to establish a baseline for any new TDM efforts and also identifies potential opportunities for strengthening support for TDM through these related plans.

Since TDM can encompass a broad range of ideas, and because many plans do not specifically refer to TDM, it was necessary to establish distinct ways that a plan might support TDM:

- **Specifically supports TDM:** Goals or recommendations that specifically mention Transportation Demand Management;
- **Directly supports TDM-type efforts:** Goals or recommendations that support education, encouragement, incentives or other types of programs for:
  - Ridesharing;
  - Transit;
  - Non-motorized;
  - Flexible work; and
  - Other
- **Supports efforts that support TDM:** Goals or recommendations that support other related efforts that improve the chances of success of a TDM program, such as:
  - Compact communities
  - Road connectivity or design
  - Transit facilities or operations
  - Non-motorized facilities
  - Multi-modal transfers

Exhibit 3-9 on the following page provides a summary of the results of this review. Full text summaries of the review and topic areas related to TDM for each plan are contained in the Appendix.

***Exhibit 3-9*: TDM Elements of Various Plans in the French Broad River Region**

		Directly supports TDM-type efforts					Supportive elements that promote TDM				
Plan & Documents	Specifically Supports TDM	Ridesharing	Transit	Non-Motorized	Flexible Work	Other	Compact Communities	Road connectivity or design	Transit facilities or operations	Non-motorized facilities	Multi-modal transfers
Asheville Bicycle Plan				●				○		●	●
Avl-Bunc. Reg. Feasibility Study	○	○	●			●			●		●
Asheville City Dev. Plan	●		●				●	●	●	●	●
Asheville Downtown Plan				○		○	○		○	○	
Asheville Pedestrian Plan	●			○				○		●	
Asheville Reg. Housing Plan	○		●	○			●		○		
Asheville Transit Plan			●				○	○	●	○	
Black Mountain Ped. Plan							○			○	
Buncombe Greenways Plan				●			●	○		●	○
Buncombe Land Use Plan	○	○					●				
Buncombe Sustainability Plan		○	○	○		○	●	○	○	○	
FBRMPO CMP		○			○	○	○		○	○	
FBRMPO CTP					○				●	○	
FBRMPO Coordinated Plan			●						●	○	
FBRMPO LRTP 2035		○			○		○	●	●	●	●
Haywood Bike Plan				●							
Hendersonville Comp Plan				●			●	●	●	●	
Hendersonville Ped. Plan			○	○						○	
LOSRC Econ Dev. Plan							○		●	●	
NC Statewide Logistics Plan								○			
NC Statewide Trans. Plan									○	●	
NCDOT Complete Streets								●			
Seven Portals Study						●			○		
Trans. Options for WNC		○	○	○			○		○	○	
Transylvania Co. CTP			○						●	●	
Waynesville Land Dev. Plan							○	○	●	●	
Waynesville Ped. Plan								○		●	

● Strong support; ○ Moderate support

Chapter 4: Study Area Summary

The purpose of defining specific study areas is two-fold. First, focusing the study areas provides a framework to acquire additional data, such as worker travel flows, survey targets, and demographic information. Second, the estimation of usership for various TDM activities will depend upon defining where workers (or shoppers or other trip types) live, work, shop and engage in other activities. The estimation of users and their trip characteristics (notably trip length and mode of travel) is then utilized to estimate the value of different TDM strategies and markets.

The utilizations rates at the Park-and-Ride lot at the intersection of US 178 and US 64 near Rosman in Transylvania County is an indicator of how long distance commutes in the region are common for counties with a small employment base. Analysis shows more than 1,000 daily commuters leave Transylvania County for employment in Henderson County.

In order to define the study area for this Plan, an assessment of recent (as close to current conditions as data availability would permit) travel patterns was conducted. In this assessment, both the counties in the Land-of-Sky planning council's areaa (here defined as Buncombe, Haywood, Madison, and Transylvania) and the top 25 employers in this four-county region were examined for their trip-making within and outside of the Region. Information from the Employment Security Commission (http://esesc23.esc.state.nc.us/WorkForceInDepth) was used to identify the top 25 employers in the region, as shown in *Exhibit 2-1*.

Several observations can be drawn from the content of this table. First, even though only the "home" county and the next two most populous origins for workers for each area were cited, the numbers of actual workers originating in any particular county were fairly small, usually less than 50 employees in all but a few cases. Second, Buncombe and Henderson counties appear in nearly every three-county set of origins, which illustrates a fairly tightly-knit labor market. Third, Mecklenburg and even Wake counties appear several times in the top three origin counties for some destinations. Depending on the reporting of data by some respondents, these workers could be making deliveries or perhaps even visiting the worksite (for example, the Grove Park Inn). Finally, although calculating the origins of workers for agencies or companies that have dispersed work locations is not readily possible (e.g., Ingles Markets), a TDM program that was flexible to accommodate a variety of sites might still be feasible for these employers. Presumably, even employers with dispersed work locations communicate frequently with each branch location, making possible the advertisement, coordination, and monitoring of a TDM program or service. Some nearby major "draws" for employers, such as Western Carolina University, also "pull" from nearby counties such as Buncombe.

Workers in the region, like elsewhere in the U.S., tend to live outside of the immediate area where they are employed. The economic, social, and even (potential) health benefits from living close to work typically do not outweigh the ability and desire of many people to choose the home that best fits their other needs. For example, in the same Census block group that contains the Mission Hospital, less than one percent of the employees that work in this block group that also live inside it.

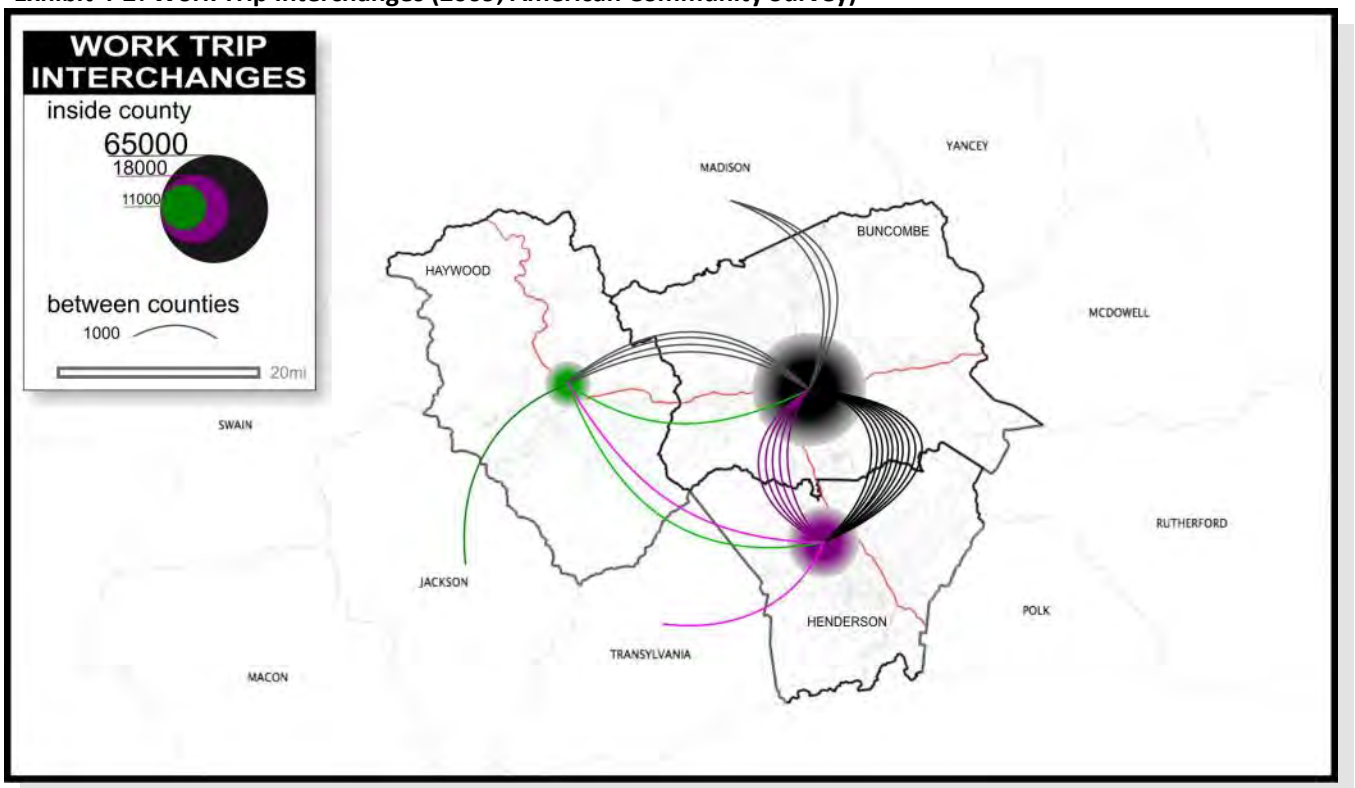
Expecting many people to live and work in the same block group is perhaps optimistic, but even if the boundaries of the block group were extended by one mile, the results change very little. Within one mile of this block group containing the Hospital, only 3.4% of workers both work and live in the block group. In fact, the net inflow/outflow ratio for this block group is over 0.8, meaning that for every worker that lives and works in this block group, or that lives in this block group and works outside of it, four other workers start off outside this area and commute in each day.

Exhibit 4-1 indicates the relative proportionality of workers that enter an area one mile around the block group each day (Circle A) and workers that live inside this area but work outside (Circle B). The small area of "overlap" (or intersection) between circles A and B indicate the proportion of workers that also live within

***Exhibit 4-1*: Top 25 Employers in Land-of-Sky Region** *(Fiscal Quarter Ending September 20, 2012)*

No.	Name	Type	Employees	County	Internal	County 2	County 3
1.	Memorial Mission Hospital Inc	Education & Health Services	3,000+	Buncombe	4,129 / 65%	650 / 10% (Henderson)	340 / 5% (Haywood)
2.	Buncombe Co. Brd Of Education	Education & Health Services	3,000+	Buncombe	403 / 81%	40 / 8% (Henderson)	12 / 2% (Madison)
3.	Ingles Markets Inc	Trade, Transportation & Utilities	3,000+	Buncombe	Dispersed Work Locations		
4.	Veterans Administration	Public Administration	1,000+	Buncombe	337 / 63%	25 / 5% (Henderson)	18 / 3% (Haywood)
5.	Henderson Co Board Of Public Ed	Education & Health Services	1,000+	Henderson	Dispersed Work Locations		
6.	County Of Buncombe	Public Administration	1,000+	Buncombe	Dispersed Work Locations		
7.	Wal-Mart Associates Inc.	Trade, Transportation & Utilities	1,000+	Buncombe	Dispersed Work Locations		
8.	City Of Asheville	Public Administration	1,000+	Buncombe	4,664 / 68%	444 / 7% (Henderson)	191 / 3% (Mecklenburg)
9.	Margaret R. Pardee Memorial Hospital	Education & Health Services	1,000+	Henderson	1,315 / 68%	262 / 14% (Buncombe)	85 / 4% (Transylvania)
10.	Park Ridge Hospital	Education & Health Services	1,000+	Henderson	802 / 36%	594 / 26% (Buncombe)	96 / 4% (Cumberland)
11.	The Biltmore Co (A Corp)	Leisure & Hospitality	1,000+	Buncombe	1,018 / 74%	130 / 9% (Henderson)	38 / 3% (Haywood)
12.	Asheville Buncombe Technical Community College	Education & Health Services	1,000+	Buncombe	281 / 65%	24 / 6% (Mecklenburg)	19 / 4% (Henderson)
13.	Eaton Corporation	Manufacturing	500-999	Buncombe	440 / 61%	116 / 16% (Henderson)	27 / 4% (Mecklenburg)
14.	Community Carepartners Inc.	Education & Health Services	500-999	Buncombe	281 / 65%	24 / 6% (Mecklenburg)	19 / 4% (Henderson)
15.	Charter Inc	Professional & Business Svcs	500-999	Henderson	Unknown Location		
16.	The Grove Park Inn Resort & Spa	Leisure & Hospitality	500-999	Buncombe	519 / 65%	54 / 7% (Wake)	33 / 4% (Mecklenburg)
17.	UNC Asheville 18173	Education & Health Services	500-999	Buncombe	589 / 65%	46 / 5% (Henderson)	40 / 5% (Mecklenburg)
18.	NC Dept. Of Health & Human Services	Public Administration	500-999	Buncombe	Dispersed Work Locations		
19.	Asheville City Schools	Education & Health Services	500-999	Buncombe	Dispersed Work Locations		
20.	County Of Henderson	Public Administration	500-999	Henderson	219 / 48%	64 / 14$ (Buncombe)	32 / 7% (Wake)
21.	Mars Hill College, Inc	Education & Health Services	500-999	Madison	144 / 36%	69 / 17% (Madison)	44 / 11% (Wake)
22.	Ingles Markets Inc	Trade, Transportation & Utilities	500-999	Henderson	Dispersed Work Locations		
23.	Transylvania County Schools	Education & Health Services	500-999	Transylvania	Dispersed Work Locations		
24.	Arvato Digital Services LLC	Manufacturing	500-999	Buncombe	622 / 73%	40 / 5% (Mecklenburg)	29 / 3% (Henderson)
25.	Kendro Laboratory Products	Manufactu ring	500-999	Buncombe	501 / 70%	32 / 5% (Mecklenburg)	29 / 4% (Henderson)
-	Western Carolina University	Education & Health Services	500-999	Jackson	284 / 45%	46 / 7% (Buncombe)	43 / 7% (Wake)

***Exhibit 4-2*: Work Trip Interchanges (2009; American Community Survey)**



one mile of this block group. The results for other major employers and areas around them do not deviate very much from this trend.

This same trend is also in evidence at a macro scale. *Exhibit 4-2* illustrates these distributive effects at a county level. The statistics underlying this graphic illustrate additional salient points. First, Buncombe County, being the most populous county in the region as well as having the most employment, retains its workers better than some nearby counties: 59% of all workers in Buncombe County reside in Buncombe County. This is more than, for example, Henderson County, which only retains 55% of its workforce as residents. Compared to Haywood and Henderson counties, Buncombe County is also drawing workers from more distant markets, such as Mecklenburg, Forsyth, and other non-adjacent counties.

Conclusions

Based on this assessment, several conclusions about appropriate marketsheds for TDM programs and services can be considered.

1. The downtown "core" of Asheville contains several unique and large employers that tend to draw workers from within Buncombe County as well as more distant counties. This fact, combined with the level of public transportation service options present, would seem to call for treating this area as a unique study area.
2. The remainder of Asheville outside of a downtown "core" also contains a number of larger employers in the Region. However, the distance between them and the lower levels of transit service indicate at least one separate study area.
3. Each of the other counties in the region, including Henderson, Haywood, unincorporated Buncombe and possibly Madison, are relatively self-contained in terms of the degree to which their employees commute to work. Each of these counties would seem to have transportation, demographic and political structures to require them to be studied as unique entities.
4. There may be large, individual employers or other destinations, such as regionally significant universities, major medical/special care facilities, and Charlotte Douglas International Airport, that may need to be contacted individually to gauge their interest in participation in the study and assessment of potential TDM services.

Chapter 5: Resident Survey Summary & Implications

During the summer of 2012, the consulting team conducted an online survey of adult residents of the western North Carolina region that includes the City of Asheville and Buncombe, Haywood, and Henderson Counties. The survey documented residents' commute travel patterns and their use of and awareness of travel assistance services. The survey also explored several topics to help define TDM opportunities, including factors that are important to residents' travel choices and travel needs that are not currently being met by transportation options in the region.

The consultants distributed the survey website link through a range of residential, business, and community / non-profit organizations that had contacts with residents and employees who work in the region. Organizational recipients were asked to publicize the survey link to residents or employees in their networks. The consultants also used social media channels, such as Facebook and Twitter, to alert potential respondents. A total of 411 respondents completed all questions.

Representativeness of the Survey Sample. It is important to note that the survey respondents do not represent a random sample of the Region's population, thus the survey results might not reflect the actual results if a random sample of residents had been surveyed. The survey sought to involve a broad sample of travelers and the distributions of respondents are reasonably close to those of the regional population in many demographic characteristics. But the survey distribution method relied on intermediaries to assist with data collection.

As is described more fully in the complete survey report included in the Appendix of this Plan, "*Western North Carolina 2012 Resident Travel Survey*," the survey sample differs from the regional population in several characteristics, thus some population segments likely are under- or over-represented. In particular, the survey sample includes a large share of respondents who cited a bicycle-interest organization as the source of their awareness of the survey. And the survey includes disproportionate shares of respondents who live in the City of Asheville and respondents who are employed. These sample characteristics could affect the regional representativeness of the results.

A random sample of the Region's population was not expected from this survey as the main purpose was to gather information about travel preferences that will help form the actions taken by the TDM program once re-established. Detailed analysis of the data, broken down by commute interests or geographic area, indicate the types of programs that might be most suitable for different interest or locations within the Region.

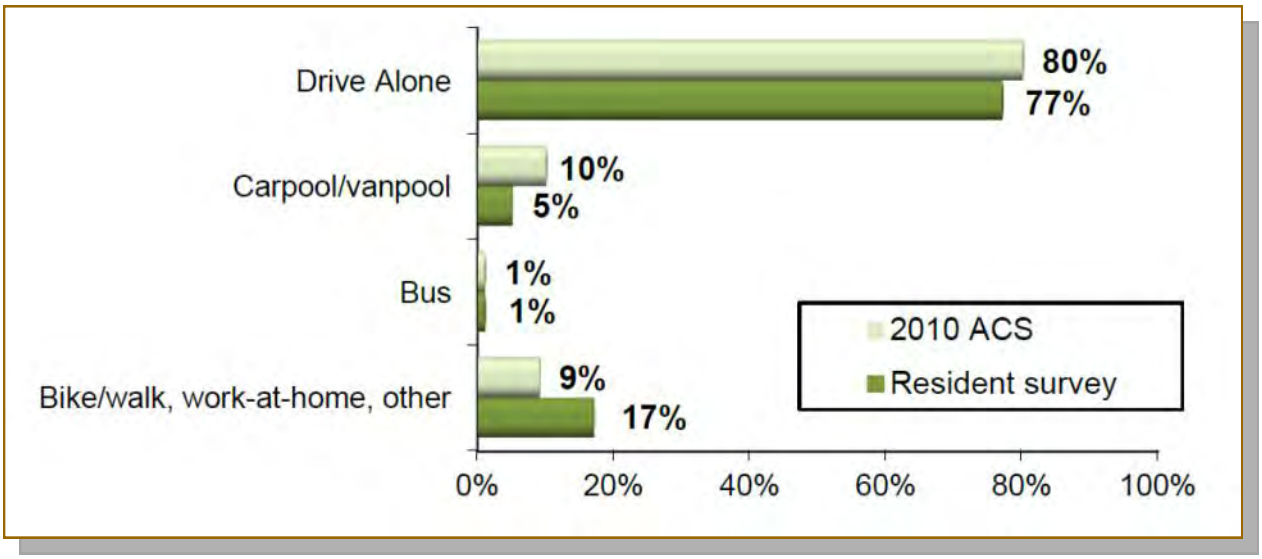
Current Commute Patterns

- ***Residents make most of their commute trips by driving alone.*** More than eight in ten (83%) survey respondents are employed and 77% of employed respondents said they drive alone to work most days (Exhibit 5-1). Twenty percent (20%) use a non-drive-alone "alternative mode" as their primary mode; nine percent (9%) bicycle and five percent (5%) carpool. Two percent (2%) walk and one percent ride a bus (1%) most days. The remaining six percent (6%) of respondents work at home, either as primary teleworkers or workers who are self-employed and work only at home.

  These results almost certainly over-represent use of some alternative modes in the region. The U.S. Census American Community Survey (ACS) reported a drive alone mode split of 80% and a carpool / vanpool share of ten percent for the three-county region in 2010. In particular, the resident survey bicycle mode share of nine percent is considerably higher than would be expected. The ACS reported nine percent for the "other" mode split, which would include bicycle, but also walk, telework, and self-employed/work at home. The high bicycle percentage in the resident survey likely reflects an over sampling of residents who have a strong interest in bicycling.

- ***More than four in ten (42%) employed respondents said they telework at least occasionally.*** For most of these respondents, telework is an occasional activity; 23% of employed residents telework less than one day per month and eight percent telework one to three days per month. One in ten (11%) regional

***Exhibit 5-1*: Primary Commute Modes—Resident Survey vs. 2010 American Community Survey (ACS)**



workers teleworks one or more days per week.

- ***Asheville residents commute shorter distances than do residents who live outside the City***. On average, residents in the region travel about 10.4 one-way miles to work. Six in ten respondents travel fewer than 10 miles; only 15% travel 20 miles or more. The relatively short regional commute average distance likely reflects the high proportion of Asheville residents and bicycle commuters in the survey sample. Residents who live in the City of Asheville travel an average of 8.0 miles to work, compared with 13.1 miles for respondents who live outside the city. And 23% of residents who live outside Asheville travel 20 or more miles, compared with only seven percent of Asheville residents.

Transportation Satisfaction

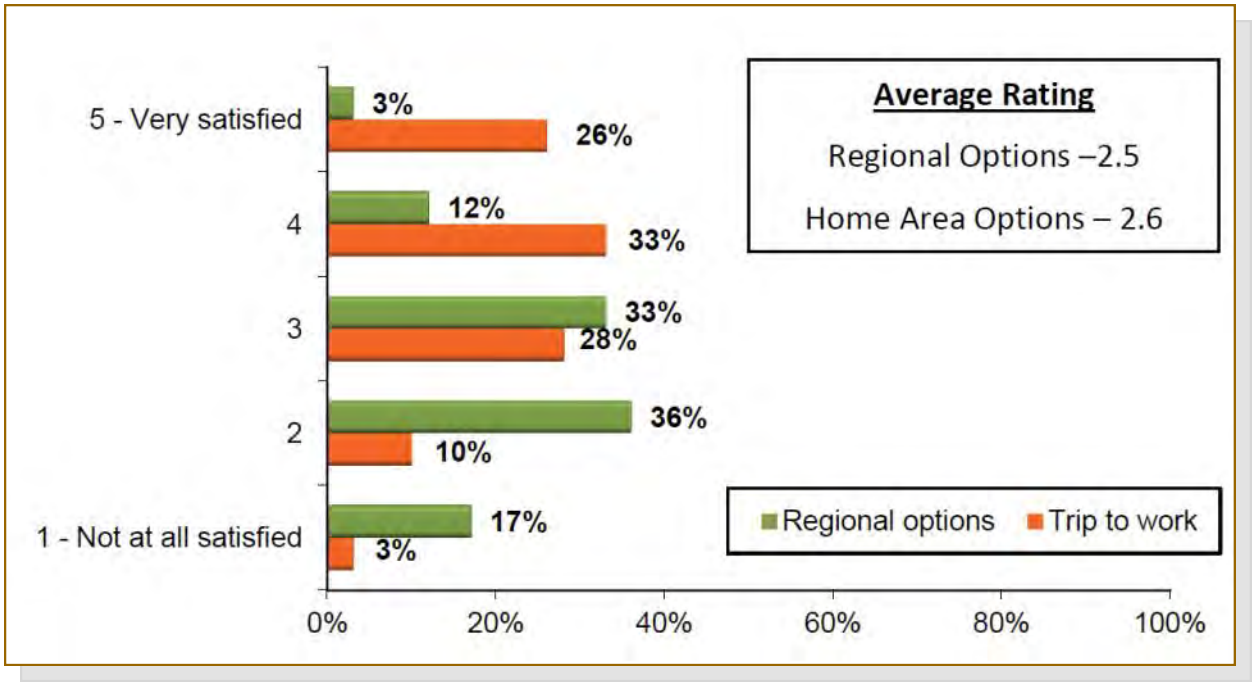
One purpose of the survey was to assess travelers' impressions of the transportation system in western North Carolina. The survey included a series of questions related to this topic. Respondents were first asked to rate how satisfied they are with transportation options in: 1) the Western North Carolina region overall and 2) the area where they live (home area). In the survey, "transportation options" was defined as "all the services available to travel around the region, including roads, buses, and services for bicycling, walking, and carpooling." Employed respondents also were asked to rate how satisfied they are with their current trip to work. Interestingly, results for this question were much more positive than were results for satisfaction with transportation options generally.

- ***Only 15% of respondents region-wide are satisfied with the transportation options available in the Western North Carolina region.*** A third of residents gave the middle-range rating of 3 on a 5-point scale. But more than half gave a low rating, indicating dissatisfaction; 17% gave the lowest rating (1 – not at all satisfied) and 36% rated their satisfaction as a 2. The average rating over all respondents is 2.5 (Exhibit 5-2). Residents who do not have access to a personal vehicle, younger residents, and lower income residents reported greater dissatisfaction with regional options.

- ***Respondents are slightly more satisfied with transportation options in the area where they live.*** About two in ten (21%) residents rated their satisfaction with home area options as a 4 or 5 on a 5-point scale (Exhibit X-2). Three in ten gave a rating of 3. But dissatisfaction is still high; 28% rated their satisfaction with home area options as a 2 and 20% said they are not at all satisfied. Their average rating for home area options is 2.6.

- ***Asheville City residents are less satisfied with regional options than are other residents, but they are more satisfied with options in their home area.*** Six in ten (57%) respondents who live in the City of Asheville reported being dissatisfied with regional transportation options (rating of 1 or 2), compared with about 46% of respondents who live in Buncombe County outside of Asheville and 48% of respond-

***Exhibit 5-2*: Satisfaction with Transportation Options—Options in Western North Carolina Region Overall and Options in Home Area.**



ents who live outside Buncombe County. But Asheville residents are less dissatisfied with home area options than are respondents who live outside the City; 40% of Asheville residents gave home area options a rating of 1 or 2, compared with 53% of respondents who live outside Buncombe County and 64% of those who live in Buncombe County outside of Asheville.

Dissatisfaction with transportation options	WNC Region	Home Area
City of Asheville	57%	40%
Buncombe County outside Asheville	46%	64%
Outside Buncombe County	48%	53%

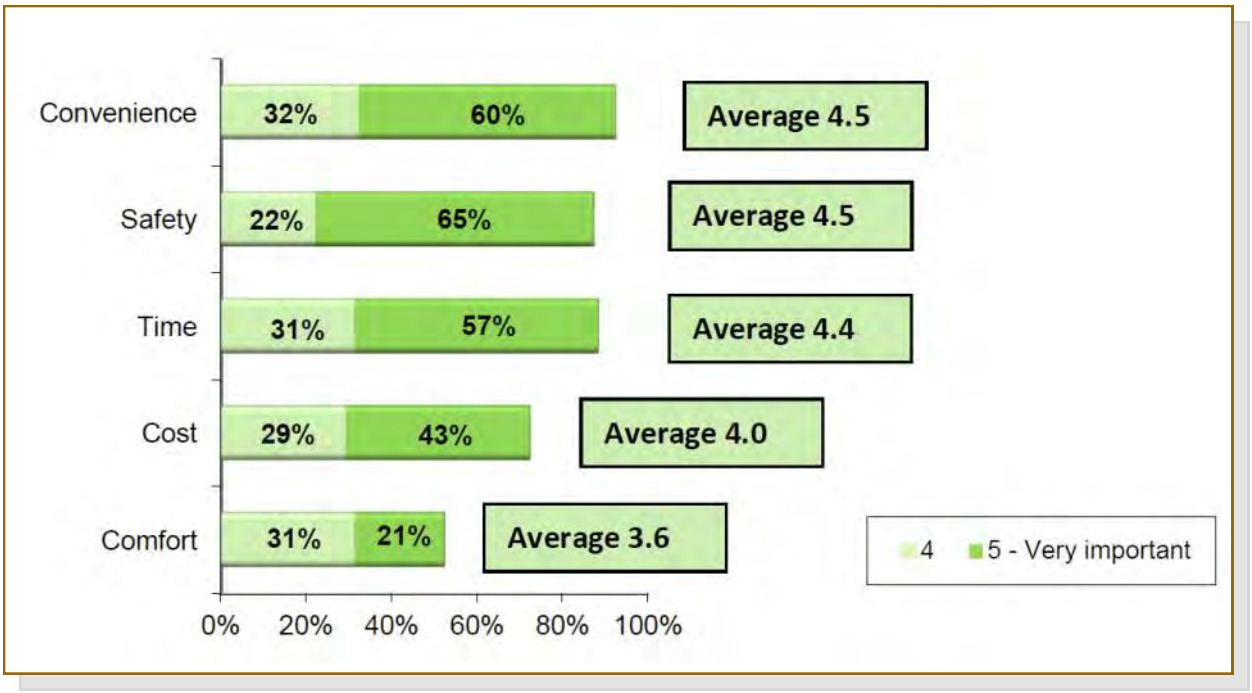
♦ ***Respondents reported much greater satisfaction with their commute than with transportation options generally.*** Almost six in ten (59%) respondents reported being satisfied (rating of 4 or 5) with their trip to work. Only 13% said they were not satisfied. Commute satisfaction declined as commute distance increased; 72% of respondents who travel fewer than 10 miles to work were satisfied, compared with 31% of those who travel 20 or more miles. And 70% of alternative mode commuters were satisfied with their commute, compared with 56% of respondents who drove alone to work.

Features Important in Choice of Transportation

The survey also included two sets of questions regarding factors that a traveler might consider in choosing a type of transportation. First, respondents were asked how important various transportation features (cost, convenience, safety, time to make trips, and comfort) are in their choice of transportation options to travel around western North Carolina. Then they were asked to rate bus service on these features.

♦ ***Residents rated convenience, safety, and time needed to make trips as the most important characteristics to their transportation choice.*** Respondents were asked to rate how important each of six travel characteristics was to their choice of travel mode (Exhibit 5-3). Convenience and safety were rated the most important features, with about nine in ten respondents saying these factors are important (rating of 4 or 5) and at least seven in ten saying they are very important (rating of 5). On average, these fea-

Exhibit 5-3: **Importance of Transportation to Features to Respondents' Mode Choice**
(Convenience n=402; Safety n=403; Time n=404; Cost n=405; Comfort n=407)



tures both received an average score of 4.5.

Time needed to make trips also was rated important/very important by about nine in ten respondents, but the average rating is slightly less than those for convenience and safety, because fewer respondents rated it as "very" important. It received an average score of 4.4. About seven in ten (72%) respondents rated cost as important and 43% rated it very important. The average score for this feature is 4.0. Comfort received the lowest score of the five features, 3.6, on average. About half (52%) of respondents said comfort is important, with only about 21% saying it is very important.

- ***Respondents rated bus service as moderately good on safety, cost per mile, and comfort, but gave low ratings for convenience, time to make trips, and frequency of service.*** Respondents were asked to rate bus service in the western North Carolina region on the same five features: convenience, safety, time, cost, and comfort, and on one additional transit service feature – frequency of bus service. About half of respondents rated safety (54%) and cost per mile (53%) as a 4 or 5 (Excellent) and almost four in ten (39%) gave a 4 or 5 rating to comfort. These features received overall average scores of 3.5, 3.8, and 3.3, respectively.

  Bus service received much lower ratings for convenience, time needed to make trips, and frequency of service. Only about one in ten respondents rated these features as 4 or 5. The average scores for these features were: convenience – 2.3, time – 2.1, and frequency – 2.2. Respondents who live in Asheville, where bus service is most easily available, rated all bus service features approximately the same as did respondents who live outside Asheville.

Importance to Invest in Transportation Improvements

The survey also explored respondents' views on how important it is for transportation agencies in western North Carolina to invest in six different types of transportation improvements (Exhibits 5-4 & 5-5):

- Expand bicycle trails and lanes
- Improve or expand bus service
- Develop more park-and-ride lots
- Build or expand highways
- Provide information and services to make it easier to carpool/vanpool

Exhibit 5-4: **Importance for Transportation Agencies to Invest in Transportation Improvements**
(Bicycle trails/lanes n=397; Bus service n=401; Bus info n=399;
Carpool info/services n=396; Park-and-ride lots n=383; Highways n=395)

Exhibit 5-5: **Importance for Transportation Agencies to Invest in Transportation Improvements**
Respondents Who Live in Asheville versus those Who Live Outside Asheville
Scale of 1 (Poor) to 5 (Excellent) - Average Rating

Investment / Improvement	City of Asheville (n = 205)	Buncombe Co Outside Asheville (n = 96)	Outside Buncombe Co (n = 82)
Expand bicycle trails /lanes	4.2	3.8	3.8
Improve / expand bus service	4.0	3.6	3.8
Provide bus info	3.9	3.6	3.5
Provide carpool/vanpool info / services	3.5	3.2	3.2
Develop more park-and-ride lots	3.3	3.3	3.4
Build / expand highways	2.3	2.7	2.8

- Provide information and services to make it easier to use a bus.

- ***Residents rated "build / expand highways" as the least important transportation investment.*** The highest ratings for importance of investment were given to: expand bicycle facilities, improve / expand bus service, and provide bus information and services. They received average importance ratings of 4.0, 3.9, and 3.7, respectively. Two-thirds of respondents said it was important to invest in each of these improvements. Six in ten rated investment in bicycle trails/lanes as "very important."

  Two alternative mode service improvements: provide carpool information and services and develop more park-and-ride lots, each received an average rating of 3.3. About four in ten respondents rated these as important investments. The lowest overall rating was given to build or expand highways; the average rating was 2.5. Only a quarter (24%) of respondents rated this as important and more than half (55%) rated it as not important (rating of 1 or 2).

- ***Asheville residents rated bicycle and bus investments as more important than did other residents.*** Respondents who live in the City of Asheville gave statistically higher importance ratings for three improvements, bicycle trails and lanes, improve / expand bus service, and provide bus information, than did respondents who live outside the City (Exhibit X-5). Respondents who live outside Asheville gave higher ratings for the importance of building / expanding highways. On this question, the ratings for Buncombe County residents outside Asheville and those who live outside Buncombe County were not statistically different from each other.

- ***Both residents who drive alone to work and those who use alternative modes gave high importance ratings to alternative mode investments.*** More than four in ten drive-alone respondents supported investments in park-and-ride and carpool support services, six in ten felt bus investments were important, and seven in ten rated bicycle facilities investments as important. Only 29% of drive commuters rated road building an important investment.

Availability and Use of Transportation Facilities

- ***Asheville residents have substantially greater access to transit than do other residents.*** About 70% of Asheville residents live less than one-half mile from a bus stop and 93% live within one mile. By contrast, only 18% of respondents who live outside Asheville live within one mile of a bus stop and two-thirds live more than two miles from the closest stop.

- ***About half (55%) of all respondents said they had ever used a bus service for a trip in the region.*** By far, the most widely used service was Asheville Transit, used by 48% of all respondents. Small shares of respondents had used another bus service. Use of transit is concentrated among Asheville residents; 68% had ever used transit for a trip in the region, compared with 45% of respondents who live in Buncombe County outside of Asheville and just 27% of respondents who live outside Buncombe County.

- ***Over a third (37%) of all respondents made at least one bicycling trip in the past month.*** Twenty percent made between one and five trips and 17% made six or more bicycle trips. Respondents who live in Asheville were much more likely to have made a bicycle trip than were residents who lived outside the City. Half (50%) of Asheville respondents made at least one bicycle trip, compared with 22% of residents in other areas of the region.

- ***Eight in ten respondents cited bicycle services or facilities that would make it easier or encourage them to make more trips by bicycle.*** To identify actions that could facilitate expand bicycle use, respondents were given a list of bicycle facilities and services and asked to check up to three that would make it easier for them to make trips by bicycle. More than seven in ten identified either bike trails / connectors to bike trails or bike lanes on streets as services that would make it easier to bicycle. About two in ten selected information on safe bicycle routes and about 15% mentioned lighting on bike paths, bikeshare / bike rentals, or bike lockers/racks. Small percentages named driver education (5%), help finding a bike buddy (3%) or classes on safe bicycling (2%).

Awareness, Use, and Interest in Local Transportation Services

Respondents were asked if they were aware of and if they had used services from six organizations that provide transportation information to residents of the region. The survey also asked how interested they would be in several new services: carshare (short-term car rental for members), bikeshare (short-term bicycle rental for members), bicycle route information, and community walking "club."

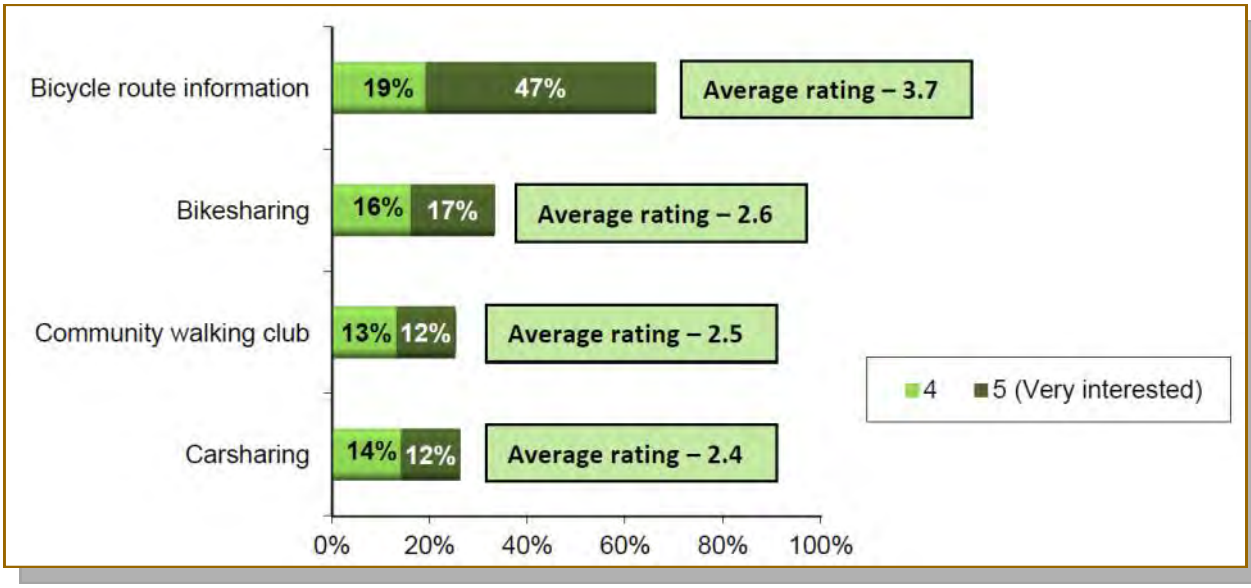
- ***Three regional / local transit operators had both the highest name recognition and highest use of the services named.*** More than nine in ten (91%) respondents had heard of Asheville Transit and 76% knew of Mountain Mobility. About four in ten (38%) were aware of Haywood Public Transit. Three in ten (29%) knew of ShareTheRideNC, which helps residents find carpool and vanpool partners. About 13% had heard of Blue Ridge Commuter Connections and six percent were aware of ZimRide, a ridematch service that operates primarily on university campuses. Nearly half (45%) of respondents had used

Asheville Transit. Use of all the other programs was quite low; between two and five percent of respondents indicated that they had used services from the other organizations.

♦ ***Residents reported moderate interest in several new transportation services.*** Respondents reported the greatest interest in bicycle route information (Exhibit 5-6). Two-thirds gave this service a rating of 4 or 5 (very interested) on a 5-point scale. The average rating for this service was 3.7. Ratings for the other three services were similar. About a third (33%) of respondents reported interest in bikesharing (average rating of 2.6) and about a quarter reported interest in community walking club (average rating of 2.5) and carsharing (average rating of 2.4).

Exhibit 5-6: **Interest in New Transportation Services**

(n = 382)



♦ ***Interest in both bicycle route information and carsharing was greatest among Asheville residents.*** They gave bicycle route information an average rating of 4.1, well above the 3.3 average rating of respondents outside Asheville. And Asheville residents rated their interest in carsharing as a 2.7, substantially higher than the 2.0 average ratings from respondents in other parts of the region. The higher carshare rating for Asheville respondents likely is related to their lower car availability and lower incomes. Eleven percent of Asheville respondents do not have a personal vehicle available for regular use, compared with just four percent of respondents who live outside Asheville.

Worksite Commute Services

♦ The survey next inquired about charges employees paid to park at work, the availability of commute assistance services at respondents' workplace, and employees' interest in these services. It is important to reiterate that results for these questions probably are not representative of results for the region overall. The survey invitation outreach likely reached a disproportionate share of employers that promote alternative modes to employees at a higher rate than do employers region-wide.

♦ ***Nine in ten respondents have free parking at work.*** The remaining eight percent said they pay or would pay to park if they drive to work. Four percent pay between $1 and $24 per month, two percent pay between $25 and $49 per month, and two percent pay $50 or more. Parking charges are concentrated among employees who work in Asheville. Twelve percent of respondents who work in Asheville pay a parking fee, compared with three percent of employees who work in other locations.

♦ ***About half (54%) of employed respondents said their employers offered worksite commute assistance services.*** The most commonly offered services are secure parking for bicycles, cited as available by 32% of respondents, and transit route/schedule/fare information, which was mentioned by 29% of respond-

ents. About two in ten said their employers offer bicycle/walking information (21%), showers/personal lockers (18%), and help finding carpool or vanpool partners (16%). Only a small share of respondents said the employer offers a financial incentive: nine percent mentioned a transit subsidy and five percent said their employer offers prize drawings or contests for employees who don't drive alone to work

- ***Most services had been used by at least half of the respondents who said the service is available.*** Two in ten (17%) respondents had used secure bicycle parking. One in ten had used transit schedule/route information (11%) provided by the employer or bicycle/walking information (11%). Slightly smaller shares of respondents showers/personal lockers (8%) or help finding carpool/vanpool partners (5%), and Guaranteed Ride Home (3%).

- ***Commute services are concentrated among Asheville employers.*** More than six in ten (63%) respondents who work in Asheville said they have access to commute services at work, compared with 52% of respondents who work in Buncombe County outside Asheville, and 42% of respondents who work outside Buncombe County. Asheville workers have substantially greater access to five of the ten services: bicycle parking, transit schedules, and ridematching, help finding carpool / vanpool partners, Guaranteed Ride Home, and financial incentive for bus riders.

- ***Drive alone respondents who did not have access to worksite services reported interest in both financial and non-financial services.*** Drive alone respondents who said that commute services were not available were asked how much the services would motivate them to use an alternative mode for their trip to work, if the service was offered. Not surprisingly, financial incentives topped the list; 50% of drive alone respondents said a $100 per month subsidy would encourage them to start carpooling and the same percentage said a $100 per month transit subsidy would influence them to use transit.

  About four in ten respondents said showers/personal lockers (41%) or Guaranteed Ride Home (38%) would influence them to use alternative modes. Prize drawings (36%), secure bicycle parking (29%), and bicycle/walking information (28%) were cited by about three in ten drive alone commuters. The remaining three services were named by about a quarter of respondents: ridematching assistance (25%), transit information (23%), and priority parking for carpools and vanpools (19%).

Desired Improvements in Regional Transportation System

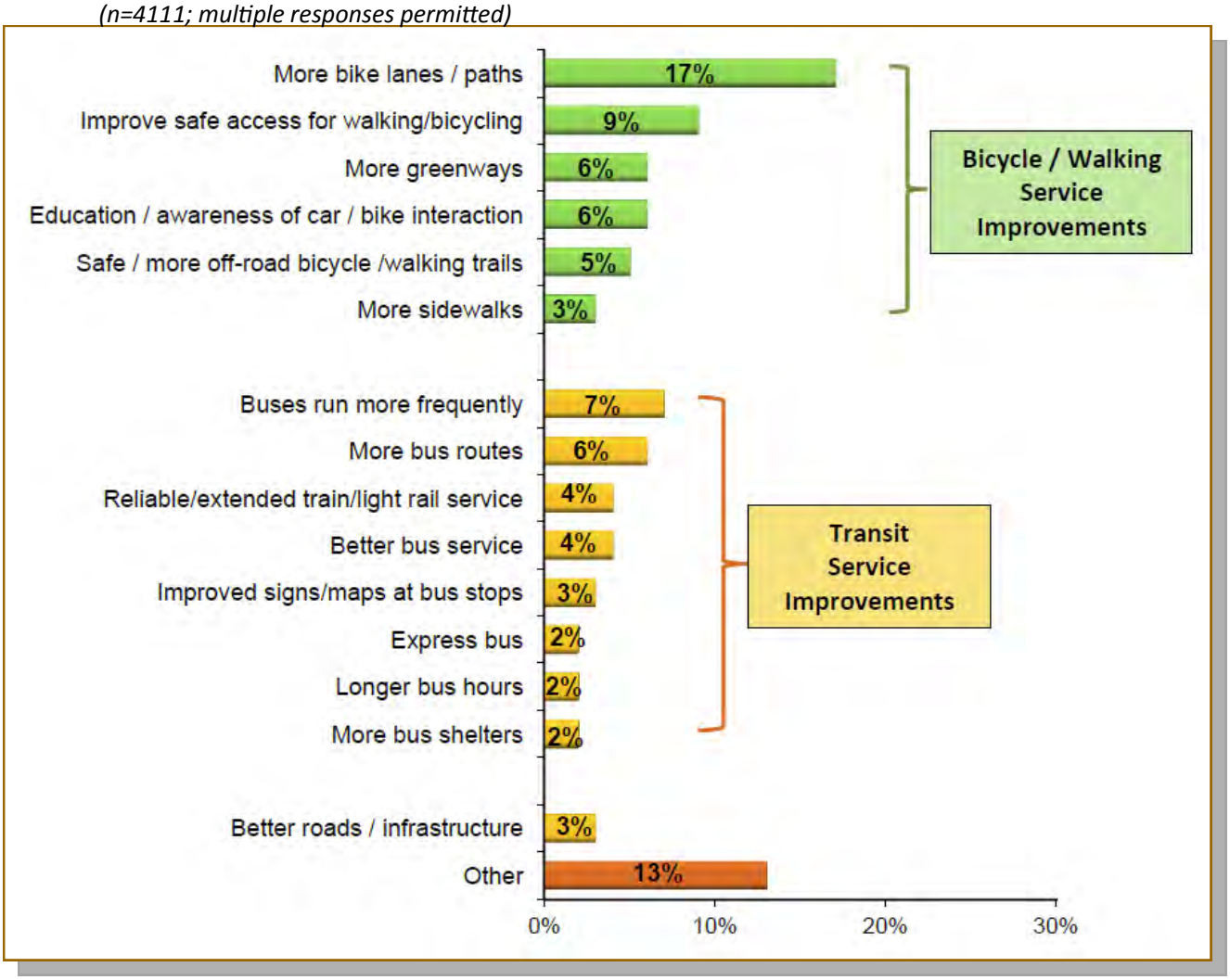
The final question in the survey offered respondents an opportunity to provide recommendations for ways to improve the western North Carolina region's transportation system. (Exhibit 5-7) About 45% of respondents wrote-in a comment. More than eight in ten comments were related to either bicycle/walking improvements or transit improvements. Three percent of comments focused on road or highway infrastructure and 13% were on other topics.

- ***About a third (37%) of all respondents made a suggestion about bicycle / walking facilities or services.*** Seventeen percent mentioned the need for more bike lanes or paths and nine percent wanted to see bicycle and walking safety improvements. Five to six percent of respondents mentioned a need for more greenways, education for drivers about bicycles and vehicles sharing the road, and off-road bicycle / walking trails. It is important to reiterate that the survey sample included a large contingent of respondents who were regular bicycle riders and member of bicycle clubs and interest groups, thus the predominance of these recommendations likely overstates the region-wide perception of the need for these improvements.

- ***Two in ten (21%) respondents mentioned a transit service recommendation.*** The most common suggestions in this category were for more frequent service (7%), more bus routes / routes in areas that are currently unserved by transit (6%), train / light rail service (4%), and better (higher quality) bus service

Exhibit 5-7: **Recommended Improvements in WNC Transportation System**

(n=4111; multiple responses permitted)



(4%). Respondents also mentioned the need for improved signage at bus stops, express bus, longer bus hours of service, and more bus shelters.

Implications of the Survey Results for the TDM Plan

The survey results presented above suggest several conclusions that are important to the TDM Plan:

- ***Residents report significant dissatisfaction with the current range of transportation options that are available in the region.*** The survey analysis clearly shows that residents throughout the region want additional travel options. The results also indicate that residents make a distinction between the options they want, need, or expect to get around a small, local area (home area) versus options to make longer trips through a larger area (region). Respondents consider the options that are actually available to them: personal vehicle, public transit, walking, bicycling, etc., as well as the characteristics of the trips they wanted to make.

  In Asheville, where options are most easily available, residents can be car-free and still be satisfied with their local mobility. But without a car, their regional mobility suffers. Residents who live outside Asheville and who have a personal vehicle have the opposite situation – good regional mobility but would like more options in the home area. The situation is much more difficult for car-free respondents who live outside Asheville. They have poor mobility for both local and regional trips.

- ***Residents take a broad view of option availability in their transportation options rating.*** Residents average rating of 3.7 for commute satisfaction is much higher than the 2.5 rating for satisfaction with regional transportation options and the 2.6 rating for home area options. This suggests that while many

respondents have been able to arrange commuting patterns that are acceptable, they also value having options to make non-work travel. But residents' satisfaction with their commute appears related to their satisfaction with regional options. Among respondents who are dissatisfied with their trip to work, 87% also are dissatisfied with regional transportation options. Conversely, among respondents who are satisfied with their commute, only 36% are dissatisfied and 21% reported being satisfied.

- ***Residents across the region support increased government investment to expand the menu of options.*** Residents gave high ratings for the need to invest in services to make it easier to get around by carpool, public transit, bicycle and walking. Support for transit investment was particularly strong, among both Asheville residents and residents of other parts of the region. And both drive alone commuters and residents who use alternative modes to get to work expressed strong support for alternative mode investments.

- ***The region has three distinct travel markets, with different needs and different expectations.*** It was clear from the analysis that Asheville residents view transportation differently than do residents of other parts of the region. They are less likely to have a personal vehicle available, so are more dependent on public transit, bicycling, walking, taxis, and other public travel options. This understandably influences the value they place on alternative travel modes for both work and non-work travel. Residents who live outside Buncombe County represent a second distinct market. They have few options other than driving, and while they would like additional options, they understand that choosing a non-urban location has travel consequences.

  The interesting third market is residents who live in Buncombe County, but outside Asheville. They have used transit services at nearly the same rate as have Asheville residents and their response to the question on satisfaction with home area options suggested they want, and perhaps expect, a higher level of mobility than the available travel options provide; they are substantially more dissatisfied than are other residents. But their ratings on importance of transportation investment and their interest in new transportation services are very similar to those of the "outside Buncombe County" residents and considerably lower than for Asheville residents.

- ***Some potential appears to exist for increased use of alternative modes for commuting.*** Nearly eight in ten work trips in the region are made by driving alone; less than 10% are made in carpool or vanpool, and only about one percent of trips are made using public transit. It is not likely that the region could expand regular-route bus service substantially throughout the region in the short-term, but targeted express bus service might be productive in certain areas. And carpooling could be increased if additional park & ride lots were available, information was provided to assist with carpool formation, and employers offered services and incentives to encourage carpooling.

- ***A substantial share of residents who drive alone say they would be motivated by alternative mode assistance services to try an alternative mode for their trip to work.*** More than half of drive alone residents say they would be influenced by a financial incentive to use an alternative mode and nearly four in ten would be motivated by non-financial incentives. Even if the stated interest is adjusted to discount for respondents who give a response they believe is socially acceptable, it's likely that as many as 15% to 20% of drive alone respondents would be motivated by a financial incentive and 10% would be encouraged by a non-financial service. These services could be provided by employers or through a region program that was open to all employees.

Chapter 6: Business & Market Development Plan

A major goal of this Plan was to develop a short-term and long-term implementation strategy to re-introduce the TDM program to the region and determine the most appropriate agency in which to house the TDM program. There is not a clear consensus across the United States on the best methods by which a TDM program can be governed and the peer region's analysis attempted to identify frameworks that best suit the region and the existing government structures within the region.

The sections contained in this chapter are to be a plan of action for the TDM program to undertake as it is re-established and integrated, at some point and to a level to be determined, into the broader public transportation discussion in the region. This chapter is about what the TDM program should aspire to become based on the state of the practice in 2012. Factors such as technology, the economy and characteristics of the region will evolve. The TDM program should be allowed to evolve along with these factors.

Governance Structure & Options

The Asheville/Buncombe/Henderson Regional Feasibility Study (2010) for public transportation in the region posed some potential organization structures as it relates to the existing framework of transit services consisting of Asheville Redefines Transit (ART), Mountain Mobility and Apple Country Transit. The topic of Transportation Demand Management (TDM) services was not a topic addressed in the 2010 study. The study posed the idea of the region's services transitioning based on the following model:

- **Cooperation:** Working together in a loose association; focusing primarily on information sharing; separate identities and control remain in place.
- **Coordination:** Group has formal arrangements to make decisions, take action, and manage resources; agencies remain separate organizations.
- **Consolidation:** One agency provides service through purchase service agreements or other arrangements.

These conceptual frameworks for organization of the region's transit service are important to consider as the TDM program is re-established, grows and evolves. The study noted that the region's transit services are currently operated under "Cooperation" and that short- to medium-term recommendations were to move to a "Coordination" model with a long-term goal of moving toward "Consolidation" by creating a Public Transportation Authority.

The proper governance framework for a TDM program is difficult to determine at any stage of cooperation, coordination or consolidation and may be best left that way until a more substantial framework and model emerges for public transportation in the region. This, however, should not be viewed as a detriment for the TDM program as such programs are housed in a variety of governance arrangements and all can be successful given the proper level of understanding and support of TDM within a region.

One potentially disconcerting assertion from the Regional Feasibility Study was an assumption that the Consolidation model resulted in one agency providing services. Regional public transportation authorities exist in many different models across the United States and these varying typologies for such authorities are generally based on the prevailing characteristics of transit service pre-establishment of the authority.

There appears to be a preference by NCDOT and others in the state that regional transportation authorities in North Carolina should be an "all or nothing" establishment in regards to oversight of services as opposed to regional authorities that operate more as a "bank" or central planning entity for transit services that operate under somewhat independent service boards based on model or typology of service.

This is important to consider for TDM program implementation. While association of the TDM program with regional transit service could raise the visibility of the TDM actions, case studies have shown that TDM services that are directly aligned from both a governance and funding standpoint under a regional transit authority can have a difficult time competing for priority decisions within the regional authority.

Below are some summary pros/cons of how a TDM program can be arranged under three different arrangements within the region.

- **Operates as Independent Program:** Under this framework, the TDM program would be independent either as a standalone entity or as a separately-funded entity within an existing municipal government such as a city or county.

  - ◊Pros: Does not have to compete for day-to-day funding with other transportation interests or dedicated transit funding. Can remain autonomous. Can be more nimble with less oversight.

  - ◊Cons: May have to compete against other transportation interests or transit funding with more established services. Program status can fluctuate based on individual municipal decisions. Autonomy can lead to less trust among other transportation services/ agencies in the region.

- **House at Regional Planning Agency such as MPO or COG:** MPOs and COGs are tasked with long-range endeavors within a multi-jurisdictional framework consisting of member governments and agencies. Some MPO and COG duties translate into more short-term actions and operations, such as Land of Sky Regional Council recently taking over operations of Mountain Mobility. Funding is generally supported via the MPO or COG membership structure or through funds allocated to the MPO, in part, through FHWA and FTA funding for MPOs.

  - ◊Pros: Housed in an agency that already is tasked with having a regional perspective. The type of "soft" implementation of programs (less project or infrastructure intensive) is closely aligned with services provided by an MPO or COG. Program can remain autonomous when compared to other regional transit services. TDM program can provide more short-term implementation of MPO-based goals or plans to help support the MPO's standing within the region. Can be more nimble to create individualized marketing for sub-sectors of the area.

  - ◊Cons: May have to compete against other transportation interests or transit funding with more established services. Political differences by member agencies of the COG or MPO can lead to diversion of resources if some members become inactive or disinterested, which can leave citizens or businesses engaged with the program in a difficult situation.

- **Part of a Regional Transportation Authority:** The regional transportation authority would be tasked as a catch-all organization for public transit, under which TDM is often considered an allied service. The TDM service within a regional authority would be another service or department alongside fixed route transit, demand response and other services that could emerge over time. The role of a TDM service within a regional authority can vary greatly based on the authority, funding sources, and political desires. The pros/cons include more detailed perspective on how placement of a TDM service could sort out within a regional authority where it is assumed the authority has direct influence over services under its purview.

  - ◊Pros: Housed in an agency with aligned regional transit interests and, potentially, a dedicated stream of funding. The marketing and promotional aspects are more easily aligned with the role of a regional authority to promote public transit and allied programs. The TDM program can remain more autonomous within the regional transit authority *if* funding is separate from traditional transit funding streams; thus less subject to decisions within the authority as it relates to annual operations decisions for fixed route services. TDM program can provide more cost-effective and politically-acceptable services at a higher "farebox recovery ratio" (mostly vanpools) for geographic areas that cannot support fixed route transit.

◊Cons: May have to compete internally for funding with other services offered by the authority; TDM can be viewed as a "back seat" interest in some regional authorities. Dedicated transit funding may only be usable within the defined boundaries of the authority and not within the broader service area of a TDM program. The "soft" implementation aspects of TDM may not be viewed as important to the regional authority as fixed route services and infrastructure. The challenges of providing fixed route services in a regional setting can take momentum away from the TDM program if the region becomes mired in the action and funding for the regional authority.

Short-Term Governance Recommendation. Based on the current framework within Western North Carolina and recommendations for a Regional Mobility Manager to be housed at Land of Sky, it is recommended that a TDM service be housed at Land of Sky as an integrated element of the Mobility Manager position.

Funding is still a difficult endeavor for the program. The existing interests at Land of Sky and French Broad River MPO have an established track record of pursuing and securing funding for a variety of roles and responsibilities. If funding can be secured for a joint Mobility Manager / TDM Program Manager position (detailed later in this chapter), it can be an initial infusion of energy and interest in a TDM program that can be allowed to evolve and expand over time. Within Land of Sky exists the flexibility to respond to different geographic markets, as evident by greater inclusion of Haywood County in recent years and the regional bicycle plan led by Land of Sky which included evaluation of Swain and Jackson Counties.

Long-Term Governance Recommendation. It may still be wise to have the TDM program housed within Land of Sky once established, even if a regional transportation authority is established. The regional authority defined in the Regional Feasibility Study is initially envisioned as a consolidated entity within Buncombe County, inclusive of Asheville. Further, the scope of the Study analyzed only Henderson County, Buncombe County and Asheville as the geographic areas over which an authority would be established. This does not consider Haywood County, Madison County and others within the region where commuters are still likely to reside or commute to/from.

Further, the scope of the TDM program and services in which it will be tasked to provide does not conform to neater service models under a regional authority (e.g. a city-specific or multi-city fixed route system, a single- or multi-county demand response service).

If it seems logical to someday move the TDM program under a regional transportation authority, some level of independence and operations should be preserved so the TDM program is not subject to the same geographic and service limitations that can be prescribed to traditional transit services.

Short-Term Costs & Major Tasks

This section summarizes recommendations for re-establishing the TDM program in the region, inclusive of staffing and evolution of services. It will be incumbent upon the agency in which the TDM program is housed to identify preliminary funding (most likely in years 1 through 3) going into program start-up to ensure its viability in this timeframe.

This section is divided into two parts—years 1-3 and years 4-6 and beyond. Each descriptive section corresponds to the detailed program costs Exhibits (3-2 and 3-3) for the corresponding timeframe. Contingencies of 5% for personnel and 10% for marketing/outreach are incorporated into the cost estimates and are intended to cover overruns, professional membership and some travel. Common marketing and outreach elements that repeat each year are not summarized under each timeframe unless there is an addition or change noted for a particular year.

Years 1 through 3. This timeframe is focused mainly on establishing the program through a joint role of Regional Mobility Manager and TDM Program Manager as the personnel cost. The individual responsible for this position is tasked with implementing basic program responsibilities, including oversight of marketing and outreach programs that are aimed at producing a regional brand for the TDM program and the collateral materials to promote that brand.

Land of Sky Regional Council / French Broad River MPO staff have expressed interest in having Land of Sky Regional Council begin pursuit of funding the Regional Mobility Manager position for FY 2014 and potentially splitting the duties of that position with those of a TDM Program Manager position. Therefore, the first three years of recommendations for the TDM program assumes a splitting of duties between the two efforts.

Year 1

- **Joint Mobility Manager / TDM Program Manager.** A key short-term concept that emerged from that study was the creation of a Regional Mobility Manager position housed within Land of Sky Regional Council. The study noted the position of Regional Mobility Manager should be tasked with "promoting the adoption of the recommendations contained in the study and identifying ways [the three existing transit services] can better integrate their services." The complementary position to this will be the TDM Program Manager, who is tasked with splitting the duties of the two positions roughly equally for the first three years of this recommended work program.

  A majority of the first-year responsibilities for the TDM Program Manager will be gaining a familiarity of the region and the various responsibilities for transportation services. Understanding funding mechanisms, NCDOT and reaching out to other TDM services in North Carolina and in nearby metropolitan areas (e.g. Greenville, Knoxville, Roanoke, Chattanooga) will be important duties. The Program Manager should begin outreach to area employers with an emphasis on those already offering some type of TDM program or showing interest in working with the TDM program. Some of these have been contacted through this Plan.

  Making presentations to COG and MPO committees, as well as transit service committees or advisory boards, elected officials, chambers of commerce and others is also a critical duty during Year 1 to build name recognition within the region. Service clubs and downtown associations are another potential audience for TDM presentations, as are advocacy groups such as bicycle clubs and environmental groups.

  The TDM Program Manager should play an active role in pursuing grants to help fund the program. In the early years, this will likely require some assistance from the MPO and others familiar with transportation funding sources and other funding programs.

  A sample job description for the TDM Program Manager duties is shown in Exhibit 6-1. This job description is intended to reflect full-time duties. The part-time duties will need to be adjusted based on the experience of the person chosen for the position, the priorities of a given fiscal year, and the realities of splitting time between two roles.

- **Marketing / Outreach.** The marketing and outreach mechanisms for Year 1 are closely aligned with what the Program Manager will be tasked with learning in terms of job duties, understanding the region, and establishing communication with TDM interests regionally, statewide and in the Southeast.

  - **Form Employer Network:** The employers in the region will help form and shape the TDM program, tells its success stories, and help provide valuable input. A first step to re-establishing the program is to develop an Employer Network committee, consisting of 8-10 employers in the core part of the region. These employers should be the target of the first employer surveys to begin compiling a greater sense of how employees view their individual travel options based on their own work site. The Employer Network can also serve as an advisory committee for the program to help establish program priorities.

  - **Develop Branding Concept:** A small contract should be funded for the Program Manager to secure a marketing company to research and recommend a brand to be used by the

***Exhibit 6-1*: TDM Program Manager Job Description**

TDM Program Manager Job Description

General Statement of Duties: Coordinates the TDM program and associated marketing and outreach activities; supervises the Employer Assistance Representatives and other support staff; performs other job related duties, as required. The TDM Program Manager is responsible for the outreach efforts to promote alternative transportation programs to employers in the region and will lead marketing efforts of the rideshare, vanpool and other TDM programs. The incumbent directs the activities of Employer Assistance Representatives (future) and monitors the effectiveness of the marketing and outreach programs. The nature of the work performed requires that an employee in this classification establish and maintain cooperative working relationships with subordinates, participant company representatives, Federal, State and Local representatives, the general public and other agency employees.

Essential Duties & Responsibilities:

- Plans, organizes and supervises the activities of TDM program;
- Plans, designs and implements procedures for marketing and outreach programs for all through advertising campaigns, relationships with the marketing departments of other alternative transportation providers in the region and state, development of promotional packages, and outreach to employers who provide incentives to employees who use alternative transportation;
- Establishes and implements quality control procedures and performance measures to ensure a high level of customer service, appropriate implementation of alternative transportation incentive programs, and effectiveness of marketing the TDM program;
- Assigns and evaluates consultant work;
- Develops and manages the marketing and outreach budget;
- Oversees advertising campaigns;
- Determines requirements and makes recommendations of participating employers and incentive participants;
- Coordinates with other alternative transportation providers in the region and the state to accomplish work program established for marketing and outreach of the TDM Program;
- Coordinates with and provides necessary support for the vanpool program in order to maintain current ridership and grow the program;
- Provides for special requests for TDM program marketing and outreach information from agency, regionwide, statewide and nationwide entities;
- Serves as the TDM Program's representative on regional transportation/transit committees related to marketing and outreach of alternative transportation.
- Plans, designs and implements procedures for assessment of development applications as they pertain to potential park-and-ride facilities, including coordination with transit services and local land use agencies;
- Organizes and manages Strive Not to Drive and associated committees (until Employer Assistance Representative can be hired);
- Plans, organizes and supervises the activities of clerical support staff (if applicable);

Peripheral Duties:

- Develops appropriate grant applications for TDM programs;
- Assists in management of Federal Aid programs that fund commuter service activities; and
- Assists in the planning of vanpool routes and work with vanpool providers.

Considerable Knowledge of:

- Alternative transportation program practices, including marketing and outreach;
- Federal Transit Administration and Federal Highway Administration Regulations;
- Public relations techniques;
- Computer operation and desk top publishing and database software; and
- Program management.

Good Knowledge of:

- Supervisory principles and pra-c-tices;
- Public Transportation Programs
- Local geography and commute patterns;
- FTA and FHWA grant application and administration requirement;
- Fiscal record keeping and budgeting procedures;
- Business mathematics and cost analysis.

Ability to:

- Communicate effectively by phone, in person and in writing;
- Conduct presentations before various types and sizes of groups;
- Read and interpret technical documentation;
- Compile, develop and organize data into written reports, publications, presentations etc.;
- Work independently to complete projects and tasks;
- Operate a computer and related business software.

Education/Experience: Experience in program management and/or public transportation; graduation from an accredited college or university with an Associate or Bachelor degree with emphasis in public relations or marketing; OR any equivalent combination of experience and training which provides the required knowledge, skills, abilities and experience.

TDM program. This can include research on a possible name for the program or build upon existing names already used previously (e.g. Blue Ridge Commuter Connections). A storyboard for full-scale development of marketing materials should be produced but recognize all may not be achieved at this stage.

◊ **Initial Materials/Printing:** Stemming from the branding concept effort, a set of marketing materials should be produced so the Program Manager can begin conducting outreach with companies and potential TDM program patrons. These materials should include brochures and banners, as well as some type of "takeaway" product with the program logo (e.g. transit pass holders, stress balls, pedometers, bike lights, etc).

◊ **Blue Ridge Commuter Connections Website Refresh:** The results of the branding concept effort will likely require a refresh of the Blue Ridge Commuter Connections website whether or not the name is maintained. This will include incorporation of a new logo and contact information as well as links to materials available for print. Language on the site should be updated to include the new messaging from marketing materials.

◊ **ShareTheRideNC contribution:** Currently, ShareTheRideNC.com is a jointly-funded website with half of the total annual cost paid for by NCDOT and the other half comprised of contributions from the state's metropolitan areas roughly proportionate to population. The approximate share of the Asheville region's contribution is $1,500 per year. This contribution is shown each year in the detailed tables.

Year 2

♦ **TDM Program Manager:** The position in Year 2 is still a joint endeavor with the duties of Regional Mobility Manager. With much of the groundwork for re-establishing the program laid in year 1, the second year of the TDM Program Manager position should focus on further establishment of the brand, interaction with more employers and working to expand upon other successful efforts such as Strive Not to Drive. In Year 2, the Program Manager should begin compiling performance measures for the program (outlined later in this Plan) as they become available or are applicable to the program in a particular year. The program manager can begin working on other tasks, such as working with the MPO and/or RPO to conduct cordon counts at downtown entry to points to gather an understanding on vehicle occupancy rates for commuters.

♦ **Marketing & Outreach:**

◊ **Expand Strive Not to Drive outreach & message:** The campaign has enjoyed success in Asheville and has expanded its mission to be any type of non-SOV mode beyond just bicycling. The campaign enjoys positive name recognition and should be expanded geographically to include the entire region. Expanding the campaign to other counties will require some effort to promote it among employers and in local media. Contests among employers or commuting interests (e.g. Mission Hospital vs. Pardee Hospital) can be encouraged as a way to playfully engage the different employers and hopefully promote an exchange of ideas among employers in common business sectors.

◊ **Additional materials/printing:** The budget and demands of program re-establishment will not likely be sufficient enough to produce all of the marketing materials required for the TDM program. County-, community- or business-specific materials may need to be developed for the website or in print form and hopefully the success of the program will require production of additional outreach materials.

◊ **Guaranteed Ride Home Program start-up:** In year 2, the TDM Program should establish a permanent Guaranteed Ride Home (GRH) program for the region. This program will provide emergency taxi service to those who are registered with the TDM program as persons who regularly commute via a TDM mode (e.g. transit, carpool, vanpool, bike).

The program requires patrons to register with the program and then request reimbursement of a taxi fare after the trip is made. The TDM program is responsible for setting annual limits on use of this program, which is why formal registration is a necessity to guard against abuse. A simple form can be developed for registration and reimbursement. Registration records and usage can easily be maintained in a simple database.

Year 3

- **TDM Program Manager:** The Year 3 efforts, both from a personnel and marketing standpoint, are similar to year 2 as the program continues to build momentum. By now, the Program Manager should be well-known among the region's major employers and those who are interested in promoting TDM strategies. More performance measures may become applicable as the program grows.

- **Marketing & Outreach:** The majority of the marketing and outreach tasks remain the same, focusing on continued printing of materials, refreshing the materials where necessary and continued implementation of the GRH program and ShareTheRideNC site.

    - **Employer-based Incentive Pilot Program:** During year 3, it is advised that the TDM program identify a funding source to actively promote incentive programs for employers who are interested in promoting TDM options to their employees. Based on interest and funding, many employers or a marquee employer may be integrated into the program. The basic purpose of the incentive program is to provide a "first month" incentive through a variety of mechanisms based on the chosen TDM mode of the employee. It may be a free transit pass for the month for those willing to try transit, a gift card for gas for someone willing to try carpooling, a gift card for shoes for someone willing to walk, or a gift card for a bicycle tune-up for someone commuting by bike. One-time use parking passes can also be part of the program.

      The critical component of this is for the person to track their mode for a month in order to be eligible for the incentive and allow the TDM program to track performance. The employee should track the number of times they used the mode (60% utilization is a common target for such programs; 3 days a week on average) and note their average commute distance. Carpool partners should each be eligible for the incentive.

      It is recommended that this pilot program be made available annually to new patrons willing to try different services. Aside from being a straight-forward encouragement method, the incentive pilot program establishes some baseline measures for TDM program performance. The goal should then be to track the progress of patrons over time to see if they sustained that mode, chose another mode, or had to revert to commuting alone once the subsidy was removed.

- **Vanpool Program Start-Up:** Year 3 should be the target for full-scale start-up of a regional vanpool program. Vanpools are the most operations intensive aspect of TDM services as they are seen as either a larger version of a carpool or a smaller version of an express bus route. Vanpools can utilize either 6- or 15-passenger vans and typically are able to achieve almost a full return on operating costs through the farebox. By Year 3, the program manager should have a comprehensive grasp on the state of commuting in the region, where demand exists, and which employer locations are most conducive to TDM services.

  The Vanpool Program Start-Up is envisioned as an effort to market and roll-out vanpool services as a more integrated component of the TDM program. Private companies offer vanpool services by providing the van, scheduling maintenance, and working with drivers to collect the fares of the riders. While this takes the burden off of the TDM program personnel, it should not

be viewed as a hands-off proposition. Drivers find it difficult to fill seats and identify new riders. The TDM program should be willing to provide support services to vanpool drivers and riders to keep vans full, thus keeping them on the road.

The Vanpool Program Start-Up should develop marketing materials for establishing vanpools and methods to promote vanpools to individual employers or clusters of employers (e.g. business parks, downtown areas). Services such as Vanpool Services Incorporated (VPSI) or Enterprise may be able to provide vanpools to individuals who are interested or those who were put in contact with a vanpool provider via the TDM Program Manager prior to Year 3. However, these services are simply tasked with providing the van and collecting the operating fare from a driver or group of drivers responsible for keeping the van full and fares paid. They are not tasked with forming new routes or putting potential drivers of new routes in touch with private fleet managers to secure the vans.

Some TDM programs own and operate their own vans, and are thus tasked with collecting fares, training drivers, and taking a more proactive role in filling seats and adjusting fares. It is not anticipated the TDM program for Western North Carolina would be in a position to do this in the first 10 years or perhaps beyond that based on the potential size of vanpool fleet (most likely less than 30) that would make it economically feasible to undertake full-scale operations oversight.

Program estimates for Years 1 through 3 at shown in Exhibit 6-2

Years 4 through 6 and beyond. Year 4 is when the program is proposed to undergo more substantial growth through the establishment of the TDM Program Manager as a full-time position. This is strictly a planning-based recommendation based on an assumption of success and available funding. This transition should be based more on progress of the program rather than a strict year for implementation, recognizing that funding availability will likely be the primary factor in program expansion. If funding does not materialize for a full-time program manager by this timeframe, the program should continue along an investment tract similar to year 3 with inclusion of tasks.

Year 4

- **TDM Program Manager:** The full-time position should be able to adequately fulfill all of the job duties summarized in Exhibit 3-1. The marketing and outreach efforts of the TDM program should be established and streamlined for ease of application and continue updates. It should become a primary duty of the Program Manager at this stage to secure funding for the program that helps ensure long-term viability and allows the program to grow in the coming years. Continued promotion and growth of the vanpool program should become a primary duty.

  At this stage, the TDM Program Manager should be able to engage in land use planning and providing technical assistance to communities who are looking for TDM-related options to promote to businesses, developers and others.

  The program at this stage should have some established methods to evaluate performance. New metrics can be identified and the Program Manager may have time to explore additional metrics in preparation for a program performance review and market study recommended in Year 5.

  Fulfilling expectations of the job description as well as these new outreach and funding duties will likely occupy much of the manager's time during this year.

- **Marketing & Outreach:** The expansion of duties for the full-time position is the only major change anticipated in this year and, with that, the marketing and outreach programs should maintain their current levels and efforts with no major new additions.

Year 5

***Exhibit 6-2*: TDM Program Estimated Costs—Years 1 through 3**

	Salary /Fringe	Direct Costs	Contingency
Year One			
TDM Program Manager	**$ 50,000**		**$ 2,500**
(50% of joint position with Mobility Manager)			
Marketing / Outreach		**$ 20,000**	**$ 2,000**
Develop branding concept		14,000	
Initial materials/printing		3,000	
Blue Ridge Commuter Connections refresh		1,500	
Share The Ride NC contribution		1,500	
		Year 1 Estimate	**$ 75,000**
Year Two			
TDM Program Manager	**$ 51,000**		**$ 2,500**
(50% of joint position with Mobility Manager)			
Marketing / Outreach		**$ 15,000**	**$ 1,500**
Expand Strive Not to Drive outreach/message		9,000	
Additional materials/printing		3,000	
Guaranteed Ride Home Program		1,500	
Share The Ride NC contribution		1,500	
		Year 2 Estimate	**$ 70,000**
Year Three			
TDM Program Manager	**$ 52,000**		**$ 2,500**
(50% of joint position with Mobility Manager)			
Marketing / Outreach		**$ 21,000**	**$ 2,100**
Refresh marketing/brand based on response		12,000	
Additional materials/printing		4,000	
Guaranteed Ride Home Program		1,500	
Employer-based Incentive Program Pilot		2,000	
Share The Ride NC contribution		1,500	
Vanpool Program Start-up	**up to**	**$ 20,000**	
		Year 3 Estimate	**$ 98,000**

- **TDM Program Manager:** Once the TDM Program Manager is full-time, the program should continue to grow, establish its brand, and continue with pilot incentive programs as well as vanpool services expansion.

- **Program Performance Review / Market Study:** The TDM Program will be entering or completing Year 5 and have enough background data to determine overall program effectiveness and what modifications should be made to the program. Whether or not the Program Manager has reached full-time status, Year 5 is an appropriate year to begin this evaluation to help move the program into its next phases.

  The Program Performance Review component should include an examination of the governance of the program, the context of governance within the region at that juncture, existing marketing and outreach campaigns, administrative procedures, funding status and opportunities, planning functions and performance measurement.

  The Market Study should evaluate the program in terms of its effectiveness in establishing the brand within the region. Mirroring a survey effort similar to the one conducted for this Plan will allow for comparison to the market penetration of the TDM program compared to the year prior to its re-establishment.

  This study should form the recommendations for the program beyond Year 5 and evaluate the need to hire an additional person to help further the effort (as shown in Year 6 through 10 below). This study is anticipated to be a consultant-led project for approximately $40,000.

Year 6 through 10 (and beyond). A solid foundation for the program should be established by this time with some level of dedicated funding secured for continued program implementation. The detailed recommendations for the next five-year timeframe should be led by the findings from the Program Performance Review and Market Study. Marketing and outreach efforts can be modified stemming from that study.

- **Employer Assistance Representative:** In Year 6 (at the earliest), the Program should secure funding and consider adding another full-time position to assist the Program Manager. A common name for this type of support position is an Employer Assistance Representative or EAR. The EAR allows the program manager to function in more of a management position to help guide and direct the program and continue large-scale outreach efforts.

  The EAR's duties are as the title suggests: assisting employers. Communication skills are essential for many EAR duties. The EAR is the frontline of communication to the employers who are engaged in promoting TDM in the region. The EAR is responsible for maintaining existing contacts and identifying new employers to participate in the TDM program. The EAR attends meetings and job fairs to attract new patrons and coordinate day-to-day marketing and outreach. A detailed job description for the EAR position is shown in Exhibit 6-3.

Beyond 10 Years. It is difficult, if not impossible, to predict what a TDM program for the region will look like in 10 years and beyond. The recommendations in Years 1 through 3 might take five years to fully materialize and impact any implementation actions beyond that timeframe. The transportation field will have experienced at least two more federal funding reauthorization bills and the status of funding for transit in the region and across North Carolina could change dramatically.

The long-term outlook of demand for TDM services, in general, is good considering the likely rise in gas prices that will take place and drive people to seek alternative modes of transportation to the single-occupant vehicle. The ability of TDM programs to meet that demand with timely and effective services will likely remain a challenge.

The rate at which the economy improves from the doldrums of the late 2000s will also have an impact. If growth re-emerges in Western North Carolina, the area will likely see an increase in traffic congestion that will increase demand for TDM services. Even at a slow recovery pace, there is a strong likelihood that long-

***Exhibit 6-3*: Employer Assistance Representative Job Description**

Employer Assistance Representative Job Description

General Statement of Duties: Promotes, designs, coordinates, and monitors employers alternative transportation programs; performs a variety of adminis-trative support duties; performs other job related duties, as required.

Features of the Position: The Employer Assistance Representative works independently to contact area employers to promote, design, coordinate and monitor alternative transportation programs. The nature of the work performed requires that an employee in this classification establish and maintain cooperative working relationships with participant company representatives, the general public and other agency employees.

Essential Duties & Responsibilities:

- Assists the TDM Program Manager in its duties, as needed;
- Contacts area employers and promotes alternative transportation programs for employees;
- Coordinates employer transportation fairs, information displays and facilitates employer informational meetings;
- Conducts presentations to businesses, civic groups, and schools to promote alternative transportation programs;
- Composes quarterly news bulletin which highlights employer activities and idea exchanges;
- Designs rideshare participant's flyers, posters and payroll stuffers for distribution;
- Coordinates some elements of the vanpool program;
- Organizes and manages Strive Not to Drive and associated committees;
- Contacts and educates business park developers on available rideshare services.

Peripheral Duties:

- Periodically monitors participating employers' alternative transportation programs;
- Assists in the development of recognition programs for participating employers;
- Composes articles for participating organizations' newsletters;
- Develops and facilitates the distribution of rideshare materials to participating employers;
- Develops, composes and signs routine correspondence;
- Investigates and assists in resolution of rideshare problems;
- Maintains a library of resource materials.

Considerable Knowledge of:

- Computer operation and desk top publishing and database software; and
- Fiscal record keeping and budgeting procedures.

Good Knowledge of:

- Supervisory principles and practices;
- Filing systems and form development;
- Business mathematics;
- Local geography and commute patterns; and
- Office management techniques.

Ability to:

- Communicate effectively by phone, in person and in writing;
- Conduct presentations before various types and sizes of groups;
- Use correct spelling and punc-tuation when proo-freading;
- Accurately complete forms;
- Accurately classify, file and retrieve materials and docu-ments;
- Work independently with little supervision;
- Operate a computer and related business software
- Establish and maintain effective relationships with area employer representatives, employees and the general public.

Education/Experience: Graduation from an accredited college or university with an Associate or Bachelor degree with emphasis in public relations or marketing; OR any equivalent combination of experience and training which provides the required knowledge, skills, abilities and experience.

distance commute trips will continue to be the norm as the region's population distribution and geography will continue to cause households to locate in small towns and in rural areas while at least one person in that household experiences a longer commute for work or other trip purposes.

The TDM program should continue to seek ways to evolve and respond to the market. TDM programs are fortunate to have this ability when compared to traditional transit services where fixed routes are difficult to change or add frequency. Estimates for the TDM Program, years 4 through 6, are shown in Exhibit 3-4.

Market Development Program

The ultimate success and continued growth of the TDM program will rely on establishing a brand within the region similar to how a business would aspire to market itself. The steps identified in earlier year recommendations are intended to do this.

Just as important as the TDM program establishing a brand for itself within the region is establishing a brand for the TDM program for municipalities seeking transportation solutions for private development applications. However, this will likely be a much longer-term strategy due to personnel and funding limitations. As noted elsewhere in this plan, there distinct trip-related markets (resident work, resident non-work, and tourist) and geographic markets (Asheville, Buncombe County outside of Asheville, and Counties other than Buncombe) for transportation whose population and employment characteristics require different approaches to TDM.

The Market Development Program should be designed to identify and address the transportation needs of the existing business community. Management policy, site design considerations and transportation alternatives must be coordinated to resolve transportation concerns. In order to have a significant impact on the reduction of single-occupancy vehicle use, it is essential that the business community, transit services, NCDOT and municipalities work together.

To best tailor its efforts to these diverse markets, the TDM program should include a distinct Market Development Program (MDP) designed to coordinate public and private sector efforts to help citizens, employers, and other agencies develop mobility-based solutions for reducing transportation demand. Its aim is to identify the transportation needs of the business community, develop public and private sector support for the use of transportation considerations in developments, and provide solutions to transportation issues identified by the private sector.

Its utility for the TDM program is to:

- Help existing agencies understand the unique role a TDM service plays with businesses and employees;
- Increase ridership on existing transit routes;
- Expand and develop existing transit service;
- Build new markets for short-term carpool and vanpool options that could someday transition into more traditional transit service;
- Provide a technical resource for municipal governments seeking to incorporate transportation demand management considerations into residential, commercial and industrial development;
- Encourage joint development projects; and
- Guide the TDM program in expanding its "brand" within Western North Carolina.

A major component is a Technical Review Assistance Program. The Technical Review Assistance Program will investigate types of TDM program design features, services and programs that may be used to reduce transportation demand in new and existing developments. The Technical Review Assistance Program can also evolve to a point where the TDM program participates in the technical reviews of site plans, community development plans, and other programs that encourage the use of TDM services, transit or other methods to reduce congestion and parking demand.

***Exhibit 3-4*: TDM Program Estimated Costs—Years 1 through 3**

	Salary /Fringe	Direct Costs	Contingency
Year Four			
TDM Program Manager (full-time)	**$ 104,000**		**$ 5,500**
Marketing / Outreach		**$ 18,500**	**$ 2,000**
Marketing/branding effort for vanpool		10,000	
Additional materials/printing		3,000	
Guaranteed Ride Home Program		2,000	
Employee-based Incentive Program		2,000	
Share The Ride NC contribution		1,500	
		Year 4 Estimate	**$ 130,000**
Year Five			
TDM Program Manager	**$ 105,000**		**$ 5,500**
Marketing / Outreach		**$ 17,500**	**$ 2,000**
Marketing/branding continued		9,000	
Additional materials/printing		3,000	
Guaranteed Ride Home Program		2,000	
Employee-based Incentive Program		2,000	
Share The Ride NC contribution		1,500	
TDM Program Performance Review / Market Study		**$ 40,000**	
		Year 5 Estimate	**$ 170,000**
Year Three			
TDM Program Manager	**$ 106,000**		**$ 5,500**
Employer Assistance Representative	**$ 70,000**		**$ 3,000**
Marketing / Outreach		**$ 20,500**	**$ 2,000**
Refresh marketing/brand based on response		12,000	
Additional materials/printing		3,000	
Guaranteed Ride Home Program		2,000	
Employer-based Incentive Program Pilot		2,000	
Share The Ride NC contribution		1,500	
		Year 6 Estimate	**$ 207,000**

TDM Peer Regions

Portions of the Business Plan were developed in consultation with the results of a Peer Regions analysis undertaken as part of this Plan. *Exhibit 6-5* is a summary table of some of the key findings of that Peer Regions analysis, which examined 10 TDM Services in nine regions across the United States. These regions were chosen based on similarities to Western North Carolina, both in terms of size and potential programs. The full summary reports for each Peer Region is included in the Appendix.

***Exhibit 6-5*: TDM Peer Region—Summary Table**

TDM Service	Parent Agency	Urbanized Area Population	Total Service Area	Staffing (full-time employees)	Annual Budget	Funding Sources
ACHD Commuteride Boise, ID	Highway District	500,000	697,000	8.0	$1,700,000	MPO-DA; Local; Fares; 5309
Commute Options Bend, OR	Non-Profit	84,000	200,000	4.0	$330,000	ODOT; SRTS; Local
Commuter Services of North Florida Tallahassee, FL	Florida St. Univ.	240,000	452,000	2.75	$312,000	FDOT
GO Maine Portland, ME	COG	325,000	1,300,000	3.5	$405,000 - $630,000	CMAQ; ME Turnpike Auth.
Missoula in Motion Missoula, MT	MPO	82,000	178,000	3.5	$327,000	CMAQ; Local; Parking; Univ.
Missoula Ravalli Transp. Manage. Assn. Missoula, MT	Non-Profit	82,000	178,000	2.0	$375,000	CMAQ; 5311; Local
RIDE Solutions Roanoke, VA	MPO	299,000	509,000	2.0	$195,000	VaDOT Commuter Assistance; Univ.
SmartTrips Fort Collins, CO	MPO	207,000	137,000	2.0	$1,543,000	Pass-through from Denver MPO; MPO-PL; Fares
Smart Trips Knoxville, TN	MPO	559,000	820,000	2.0	$265,000	CMAQ; TDOT
Ticket to Ride Louisville, KY	MPO	832,000	1,144,000	6.0	$815,000	MPO-PL; Fares

Chapter 7: TRIMMS Modeling Application

A new tool for evaluating the impacts of TDM—called TRIMMS—was developed by the Center for Urban Transportation Research (CUTR) at the University of South Florida. CUTR is the foremost academic institution in the United States conducting research and developing application for TDM services. Beyond its TDM applicability, TRIMMS helps MPOs respond to new requirements for performance measurements as a result of recent Federal transportation reauthorization bills.

TRIMMS (Trip Reduction Impacts of Mobility Management Strategies) was developed by CUTR to use the emission inventory of the Environmental Protection Agency Motor Vehicle Emission Simulator (MOVES2010a). It is more user-friendly than other models, such as the EPA COMMUTER model, and was developed to provide long-term analysis tools for TDM services to evaluate the impacts of broader study areas or site-specific developments (e.g. a business campus). This allows MPOs, transit agencies, and others to perform cost-benefit analysis without the cost and expertise required by more sophisticated models. TRIMMS is available for free from CUTR.

TRIMMS Performance Options

- **Air pollution**
- **Congestion**
- **Health & safety**
- **Noise**
- **Benefits**
- **Costs**
- **Benefits / Costs Ratio**
- **Fuel Consumption**
- **Mode Shares**
  - Auto
  - Carpool
  - Vanpool
  - Transit
  - Bike
  - Walk

TRIMMS allows users to provide a subjective assessment across different TDM program options and combinations. Like any model, it has inherent flaws, principally related to using nationally driven research to apply coefficients to various strategies to estimate the impacts of those strategies. The model does however offer a higher degree of reliability than purely anecdotal estimates of TDM performance; permits regional and site evaluations; and allows great flexibility in considering the relative impacts of packages of TDM strategies.

TRIMMS uses a variety of MSA (regional) inputs to create an area-wide estimate of the effectiveness / efficiency of different program options. Inputs for the Asheville metropolitan area (MSA) are not included with TRIMMS, so the efforts to produce site and regional evaluations involve replacing default values with a place of relatively similar size and composition (in this case Boulder, Colorado was the chosen starting point) with localized values.

Benefits of TDM programs are realized through providing several inputs to the TRIMMS model. These are generally divided into two categories: Financial and land use policy, and TDM support programs, including:

Financial and Land Use Policy Inputs:

- Parking & trip costs (by mode of travel);
- Travel time improvements (by mode of travel);
- Increasing the extent of programs; and
- Changing land use patterns (retail density, land use density, transit access, transit-oriented development.

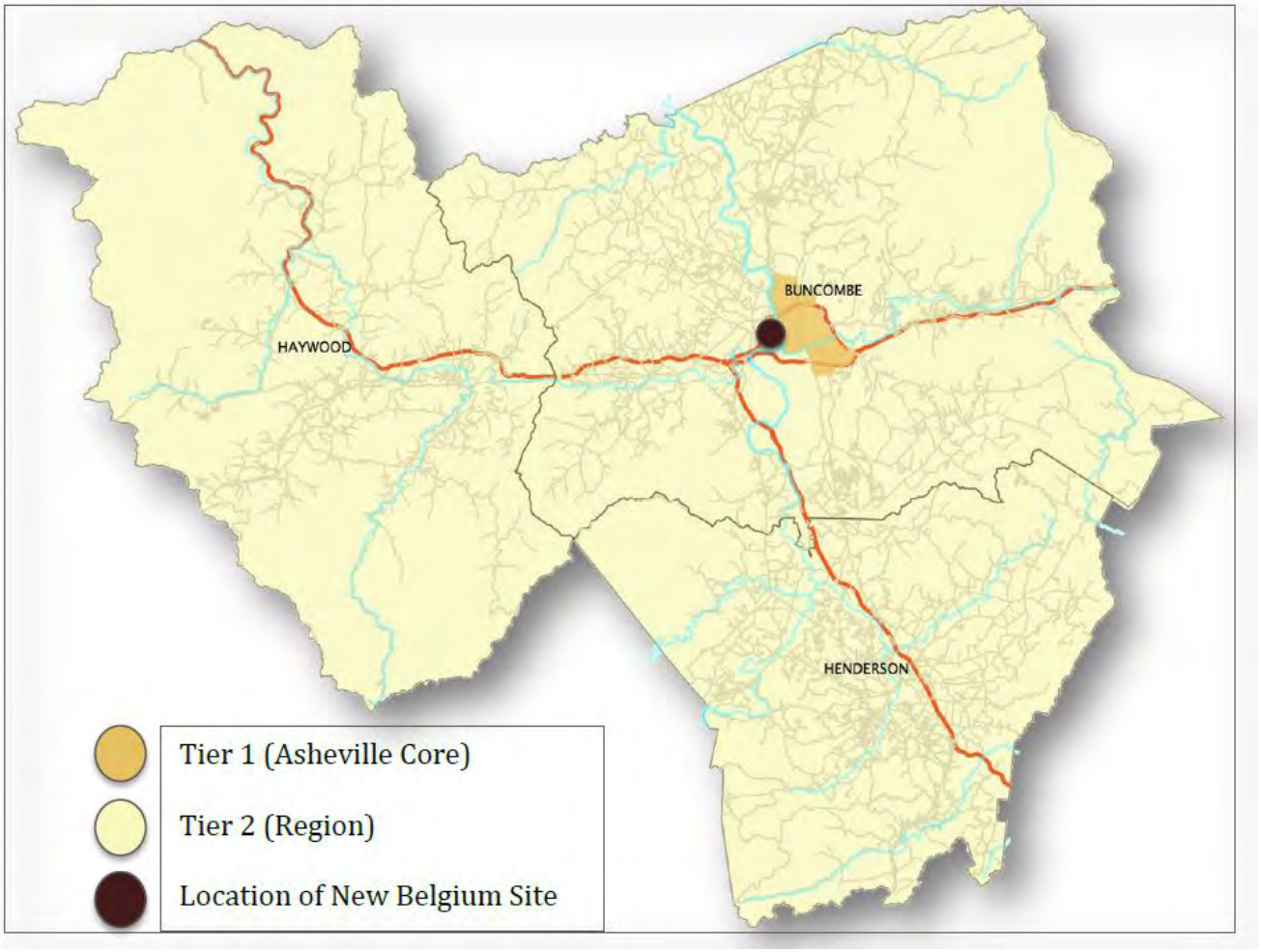
TDM Support Program Inputs:

- Incentives / subsidies (carpool, vanpool, etc.);
- Guaranteed Ride Home;
- Flexible work hours and telework strategies; and
- Site-specific inputs such as transit station proximity, bicycle lanes and sidewalks, shopping centers and other amenities proximity, and program marketing strategies.

It was recommended by the Plan's Steering Committee that this study create two models: a "core" model that considers central Asheville due to its density and availability of transit services, and a MSA-level model (*Exhibit 7-1*). A sample screen shot of the TRIMMS model is shown in *Exhibit 7-2*.

The TRIMMS model uses combined elasticities to describe how various TDM strategies may interact with one another, meaning that multiple actions are not necessarily additive but may work to support the effectiveness of each other. Upon testing, the model results were particularly sensitive to thresholds of parking pricing above one dollar difference from the baseline.

***Exhibit 7-1*: Tiers for Study Areas within TRIMMS Model Application**



The study committee and team recommended using the results of the local survey as well as their own experience in order to create three scenarios to be assessed with the TRIMMS model platform based on the two tiers (core and regional) and a sample site development and manager that would aggressively pursue various TDM strategies complimentary to that site. Additionally, the TRIMMS model was used to evaluate both a basic (short-term) and mature (long-term) assessment to address how the TDM program might change over time. The long-term, or mature, scenario might consider a program between eight and ten years in active service, with a greater level of acceptance, awareness, and adoption of the TDM concept and program elements being offered in the Region. The mature scenario also assumed some additional program or contextual elements that might be realized over time.

Exhibit 7-3 illustrates the results of the comparison for short- and long-term TDM development at the site, Asheville Core, and Regional assessment levels. Trends between basic and mature TDM operating levels are shown by the small bars: a green bar sloping downward, for instance, says that the direction of the TDM program is desirable for that statistic. A red bar indicates that the trend between short- and long-terms is heading in the wrong direction; a black bar indicates little or no change between the basic and mature TDM scenarios. The top (tan-colors) section describes the primary outputs for each of these three strategies and their respective terms; the bottom section (black/gray tones) indicate the inputs used to generate these results. Note that some of the inputs are reserved for a site-level assessment only and cannot be used in a regional scenario evaluation. Most symbols used to represent the strategies employed are in green shading, noting that they are generally perceived to incentivize certain behaviors; symbols in red (e.g., increasing parking pricing in core area) indicate that these strategies are perceived to be disincentives.

The unique inputs and major results of the TRIMMS model assessment are described in the following para-

***Exhibit 7-2*: Sample Screen Capture of TRIMMS Model Components**

Analysis Details

Analysis Title	Land-of-Sky TDM Analysis
Project Analyst	J. S. Lane Company
Analysis Date	8/12/2012
Location	Buncombe-Haywood-Henderson
Selected Urban Area	Boulder, CO
Program Cost	$80,000
Duration (years)	1
Commuters Affected	139,000
Occupations	All Occupations

Industry Sector

Agriculture & Mining	☑
Construction	☑
Education & Health	☑
Entertainment & Food	☑
Finance & Insurance	☑
Government	☑
Information Services	☑
Manufacturing	☑
Armed Forces	☐
Professional Services	☑
Other Services	☑
Retail Trade	☑
Transportation	☑
Wholesale Trade	☑

Financial and Pricing Strategies ($)

Mode	Current Parking Cost	New Parking Cost	Current Trip Cost	New Trip Cost
Auto-Drive Alone	6.00	7.00		
Auto-Rideshare	6.00	7.00		
Vanpool	6.00	7.00		
Public Transport			2.00	2.00
Cycling				
Walking				
Other				

Access and Travel Time Improvements (minutes)

Mode	Current Access Time	New Access Time	Current Travel Time	New Travel Time
Auto-Drive Alone				
Auto-Rideshare				
Vanpool				
Public Transport			18.00	14.00
Cycling				
Walking				
Other				

% Workforce Affected	20.0%

Program Subsidies

	Yes	No
Carpool Subsidies	◉	○
Transit Subsidies	◉	○
Vanpool Subsidies	◉	○
Bike Subsidies	○	◉
Walk Subsidies	○	◉

Guaranteed Ride Home and Ride Match

	Yes	No
Carpool matching service offered?	◉	○
Emergency ride home provided?	◉	○
Vehicle for non-work trips?	○	◉

Telework and Flexible Work Schedules

	Yes	No
Flexible working hours offered?	◉	○
Compressed work week offered?	◉	○
Telework program offered?	○	◉

Worksite Characteristics

	Yes	No
Accessibility		
Bus or train station onsite or within 1/4 mile	○	○
Bike lanes onsite or within 1/4 mile	○	○
Dedicated sidewalk onsite	○	○
Amenities		
Shopping onsite or within 1/4 mile	○	○
Restaurant onsite or within 1/4 mile	○	○
Bank onsite or within 1/4 mile	○	○
Childcare onsite or within 1/4 mile	○	○
Parking		
Parking charge for carpooling?	○	○
Parking charge for vanpooling?	○	○
Number of free onsite parking spaces	0	

Program Marketing

	Yes	No
Internal snail-mail of promotional material?	○	○
Internal promotional email?	○	○
Do you hold promotional events	○	○
Program management and promotion (hrs./week)	8	

Land Use Controls

Encouraging higher densities in residential areas	Current	New
Gross Population Density (persons/sq. mile)	362	
Increase (%)		0.0

Encouraging mixed land-use	Current	New
Retail Establishment Density (number/sq. mile)	1	
Increase (%)		0.0

Increasing station accessibility	Current	New
Walking distance to nearest station (miles)	1.50	
Decrease (%)		0.0

Implementing TOD stations	Yes	No
Presence of TOD stop	○	◉

% Workforce Affected	15.0%

***Exhibit =7-3*: Summary of TRIMMS Mode Evaluation**

TDM Report Card

		Basic Site	Mature Site	Trend	Basic Core Area	Mature Core Area	Trend	Basic Region	Mature Region	Trend	SCENARIOS
Trip-Making	**Change in the Number of Trips Made (Daily**	**-3.8**	**-13.5**	↘	**-938**	**-24**	↗	**-7,006**	**-10,822**	↘	OUTPUTS
	Auto-Drive Alone	-4	-14	↘	-993	-1,883	↘	-7,805	-12,553	↘	
	Auto-Rideshare	0.3	0.5	↗	16.4	134.8	↗	569.2	1,362.9	↗	
	Vanpool	0.0	0.0	↗	1.8	15.0	↗	1.2	37.2	↗	
	Transit	0.0	0.0	↗	9.1	1,396.3	↗	1.2	41.8	↗	
	Bike	0.0	0.0	↗	1.8	49.4	↗	1.2	4.6	↗	
	Walk	0.0	0.0	↗	9.1	247.2	↗	15.2	27.6	↗	
	Other	0.1	0.2	↗	16.4	16.4	↔	211.2	257.5	↗	
Miles of Travel	**Change in Vehicle Miles of Travel (Daily)**	**-27**	**-94**	↘	**-6,564**	**-11,617**	↘	**-49,604**	**-77,651**	↘	
	Auto-Drive Alone	-28	-96	↘	-6,654	-12,622	↘	-52,317	-84,149	↘	
	Auto-Rideshare	1	2	↗	77	631	↗	2,665	6,379	↗	
	Vanpool	0	0	↔	2	19	↗	1	47	↗	
	Transit	0	0	↔	1	167	↗	0	5	↗	
	Bike	0	0	↔	2	47	↗	1	4	↗	
	Walk	0	0	↔	5	138	↗	9	15	↗	
	Other	0	0	↔	3	3	↔	38	46	↗	
Social Accountability	**Change in Social Costs ($, Daily)**	**-$31**	**-$108**	↘	**-$2,735**	**-$4,815**	↘	**-$19,839**	**-$31,108**	↘	
	Air Pollution	$0	-$1	↘	-$54	-$70	↘	-$422	-$678	↘	
	Congestion	-$24	-$85	↘	-$1,191	-$2,107	↘	-$7,564	-$11,840	↘	
	Excess Fuel Consumption	-$5	-$18	↘	-$1,203	-$2,131	↘	-$9,645	-$15,099	↘	
	Global Climate Change	$0	-$1	↘	-$30	-$53	↘	-$230	-$360	↘	
	Health and Safety	-$1	-$2	↘	-$147	-$260	↘	-$1,108	-$1,735	↘	
	Noise Pollution	$0	-$1	↘	-$110	-$195	↘	-$869	-$1,396	↘	
	Gasoline Consumption (gallons/day)	-2	-5	↘	-370	-701	↘	-2,907	-4,675	↘	
Efficiency	**Benefit to Cost Ratio (B/C)**	**1.46**	**5.08**		**8.00**	**7.04**		**58.04**	**45.51**		
	Total Annual Benefits (B)	$7,349	$25,480	↗	$642,743	$1,131,598	↗	$4,662,070	$7,310,486	↗	
	Total Annualized Cost (C)	$5,020	$5,020	↔	$80,320	$160,640	↗	$80,320	$160,640	↗	
	Net Benefit (B-C)	$2,329	$20,460	↗	$562,423	$970,958	↗	$4,581,750	$7,149,846	↗	
BC TERM	*The charts at right compare the short-term and long-term B/C Ratios for each scenario.*										

Strategies Used							INPUTS
Program Subsidies	C/T/V	C/T/V	C/T/V	C/T/V	C/T/V	C/T/V	
Ride Home & Match	C/E	C/E	C/E	C/E	C/E	C/E/V	
Flexible Scheduling	F/CW	F/CW	F/CW	F/CW	F/CW	F/CW	
Accessibility	T/B	T/B	*NOTE: This section reserved for site-level actions ONLY*				
Amenities		CC					
Parking							
Marketing	M/eM/PE	M/eM/PE					
Pricing		AA+$0.50	AA+$1	AA+$1/V-$1/T-$1		AA+$1/V-$1	
TT Improvements		T		T/B/O		T	
Land Use Controls		D10/R10/SA60		D10/R10/SA20		D10/R10/SA10	
Other		PM+2/WA+20		WA+10		WA+10	

LEGEND FOR THE STRATEGY SYMBOLS

Green symbols indicate incentives; red symbols indicate disincentives; an empty cell indicates that no strategies of that type were usec
C=Carpool | T=Transit | V=Vanpool | E=Emergency ride home | F=Flexible work hours | CW=Compressed Work week
B=Bikelane within 1/4-mile | CC=ChildCare on site | SM=Snail Mail promotions | eM=eMail promotions | PE=Promotional Events he
D10=Density up 10% | R10=Retail Establishment Density up 10% | SA10=Station Accessibility up 10% | PM+2=Program Management h
WA+10=Workforce Affected up 10% (from short-term scenario)

graphs. Each description successively increases the scope and scale of the assessment, from a single site to the three-county (Buncombe-Haywood-Henderson) Region.

Sample Site Scenario

The selected sample site was the proposed (at the time of this writing) New Belgium Brewing Company site located on Craven Street near the French Broad River. The New Belgium Company actively promotes its status as a "green" company, and particularly active in creating opportunities for alternative means of transportation. In fact, one of the premier reasons that the company chose Asheville to locate its new plant was the city's commitment and demonstrated track record supporting infill development, alternative travel modes, and energy reduction.

For the sample site analysis, a base employment figure of 140 employees was assumed. Flexible work hours, carpool/vanpool and transit subsidies, and the presence of nearby bicycle and pedestrian facilities were assumed to be present in the short-term scenario. The mature scenario assumed a $0.50 increase per day in parking costs for employees parking their own car at the site (not vanpool or carpools), a slight (three minutes) reduction in transit travel times, and the addition of on-site child care. Also, 10% increases in the density of development (including retail development) and a 60% decrease in the distance to the nearest transit stop (from a quarter-mile to a tenth of a mile) were also assumed. The amount of effort being put into the TDM program on-site was assumed to grow from four hours per week to six hours per week from the basic to the mature TDM program scenarios.

The benefit-cost (B-C) analysis for the specific site indicate much greater potential for long-term impacts when compared to short-term benefits of TDM programs.

With only 140 employees for the TDM strategies to operate on (although one source reported that this number might grow to over 150 employees within seven years, so the mature scenario may be viewed as conservative in that regard), the changes resulting from either the basic or the mature TDM scenarios were relatively minor. Changes in the number of trips made each day declined by three in the short-term, and by 13 in the long-term, with commensurate changes in the number of miles traveled by single-occupant automobiles (28 miles and 96 miles). Even with these modest absolute changes, the $5,000 assumed to be put into the sample site program still translated into a positive benefit-cost ratio of between 1.5 and 5.0 (long-term).

A second site, UNC-Asheville, was also examined. With 3,800 students and 214 full-time faculty (source: UNC-Asheville University website, 2012), this site is both larger and more diverse. A university can have a higher level of top-down discretion with the types of TDM programs that it offers, but the variable schedules and inherently different travel behaviors and attitudes of students and faculty translate into a need for a greater range of TDM services. In this respect, UNC-Asheville certainly offers a broad array of programs such as flexible scheduling, telework (although not often utilized), and parking pricing incentives. When these figures were assessed using the TRIMMS model, the results indicated a benefit-cost ratio of 9.0 driven by a nearly 40,000 vehicle miles of travel drop compared to a base case where no TDM programs were offered.

Asheville Core Scenario

The Asheville Core Scenario considered nine Census Tracts within the I-240 perimeter and an area slightly north to encompass UNC-Asheville and higher-density, interconnected neighborhoods. These Census Tracts were the following: 37021002000, 37133000600, 37133000800, 37021000300, 37021000400, 37133001000, 37021000100, 37021000200, 37133000900, and 37133000700.

As with the site scenario, the incentive package was assumed to include subsidies for vanpools/carpools, public transportation subsidies, and carpool/vanpool matching services available in the basic scenario. In this scenario, it was also assumed that parking downtown would move from six to seven dollars a day to help support this program, which was assumed to cost $80,000, a figure that includes fringe benefits and salary for one person as well as marginal printing and other direct expenditures. The number of commuters

in this area is much larger than that of the single-site example, numbering 36,832. For the sake of comparison, the number of commuters was assumed to be unchanged in the mature scenario, but improvements in travel time for cycling (three minutes), walking (two minutes), and public transportation (five minutes) were assumed to be possible. Parking costs for vanpools/carpools would decrease by one dollar under the long-term scenario, again implemented to show support for the objectives of the TDM program. Population and retail densities were supposed to increase very slightly (10%) and access to transit would improve slightly (by 20%) compared to the basic scenario.

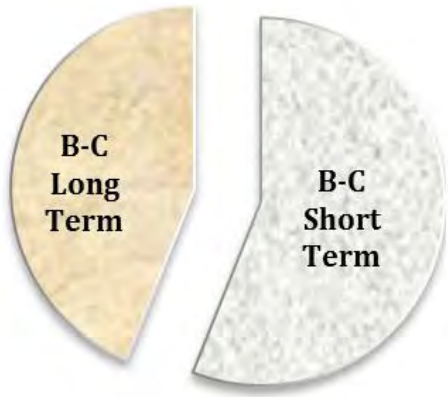
While the number of trips in the short-term decreased significantly (938), the decreases in the long-term automobile drive-alone trips was largely offset by increases in transit trips. This mode shift shows its importance in a number of ways: improvement in the reduction in vehicle miles of travel (from 6,500 to 11,600); a nearly 100% improvement in gallons of fuel consumed (370 to 700 gallons); and substantial improvements in all non-motorized and transit forms of travel, as well as ridesharing. Since the cost of the program was assumed to double in the long-term to account for a second position and offsetting the loss of some parking revenues, the benefit-cost ratio declines from the short- to the long-term, although the latter still achieves a very respectable 7:1 return on the TDM investment.

The benefit-cost (B-C) analysis for the core area of the City of Asheville indicates greater short-term benefits when compared to long-term benefits as the program matures and transit services remain relatively constant over time.

Land-of-Sky Regional Scenario

Three counties – Buncombe, Haywood and Henderson – were assumed to be included in this assessment of regional TDM impacts. Within this three-county area there were assumed to be 139,000 commuters, so the scale of TDM impacts would be assumed to be much greater. However, one offsetting factor in this assumption is that the degree of penetration, or the effect, of TDM would be diluted over this larger area. Some of the region does not have ready access to public transportation, for example, and parking is generally free-of-charge, unlike in the core area described previously.

As with the previous scenario, transit, carpool, and vanpool subsidies were assumed to be available. Flexible and compressed work schedules were also assumed to be offered to at least 15% of the workforce. Parking costs were set at a flat rate of $6.00 in both the baseline and alternative cases for the basic scenario, which has the net effect of suggesting no impact from parking fees. Some factors, such as retail establishment densities, were changed to reflect the diversity of this Region. The mature scenario included these same assumptions, but assumed that the number of commuters that would have access to transit – and the assumed improvements in transit travel times – would be greater than in the basic scenario. Additionally, the population and retail establishment densities were assumed to be greater as well, and the accessibility to transit improved by 10% (e.g., the distance to the nearest transit stop was reduced from 0.7 miles to 0.63 miles). A one dollar parking incentive was offered for 80% of the commuters, which is the only aggressive assumption about TDM incentives suggested in the mature scenario.



The benefit-cost (B-C) analysis for the overall region indicate slightly greater potential for short-term benefits versus long-term benefit cost ratios.

This larger study area translated again into larger results, with the total number of auto-drive alone trips decreasing by 7,800 (short-term) to 12,553 (long-term); transit trip-making changed very little, primarily due to the lack of incentives in fare reductions assumed for a region of this size (note: a $0.50 reduction in fares from $2.00 to $1.50 would result in an additional 1,400 transit trips). Changes in vehicle miles of travel ranged from a drop of nearly 50,000 (short-term) to over 77,000 (long-term), with commensurate improvements in fuel consumption, climate change-related costs, and other social metrics. As with the Core scenario, the benefit-cost ratios are very good, but dropped in the mature scenario due to the same assumption about doubling the TDM costs to cover the larger package of TDM incentives.

Chapter 8: Measuring Progress: How Should a TDM Program Perform?

Most federal, state and even local programs sponsored in part by governmental agencies are expected to provide indicators of how well those programs meet the objectives for which they were designed. In order to provide the French Broad River MPO / Land-of-Sky Regional Council with a clear conceptualization of how their TDM program is doing, this section describes what performance are and do; what they are doing in other places for other TDM programs; and provides a clear set of performance measures for the TDM program as we envision it in the Region.

What do Performance Measures do for Us, and How are They Chosen?

Performance measures are sometimes called "performance metrics" or "key performance indicators (KPIs)." Performance measures can be considered as measuring endogenous or exogenous conditions: an endogenous variable measures the amount of output per unit of effort or resource, while an exogenous variable measures the actual impact "on the ground" relative to the efforts being put into a program. An example of an endogenous performance measure is the statement that "312 surveys were sent out in the last reporting period." An example of an exogenous variable is "218 surveys were completed and returned in the last reporting period." Clearly, exogenous variables are more desirable in many circumstances for programs that are expected to have an impact on the public or outside agencies.

Regardless of what they are called, a good performance measure accomplishes at least the following three objectives:

- **Clear and Succinct.** Every performance measure should be easily understood by decisionmakers to help them understand how a program functions over time. If more than 10 seconds is spent explaining the measure, it is generally not a good performance measure.
- **Tied to the Goals of the Program.** Every performance measure should speak to at least one goal or objective of the program being assessed. There is little point in creating performance measures that describe an aspect of a program that is unimportant to stakeholders or, worse still, that describes a program element that is irrelevant to the stated objectives of the program.
- **Be Available.** Good performance measures typically rely on data or data sources that are readily available and, preferably, in a format that is easy to use to generate the performance statistic. If the people responsible for preparing performance measurements have to collect a lot of data that isn't readily available, the performance measure is unlikely to be carried forward for a long time.

Within the realm of a travel demand management program, achieving the first two objectives (clarity and goal-oriented) is usually easy, but sometimes acquiring the data necessary to populate the performance measure is difficult. Often, the data hurdle is overcome by choosing a surrogate variable that means almost the same thing as the more desirable (but less accessible) metric. Another option is to use data that is indirectly derived, such as that generated from a survey or a forecasting tool or model.

A final cautionary note on performance measurement is that KPIs should overlap as little as possible in terms of what they are trying to describe. For example, level-of-service, vehicle hours of delay, hours spent in congested conditions, vehicle/capacity ratios, and even numbers of accidents are all overlapping variables that may be used to describe the congestion levels of a roadway. If overlapping variables are used (sometimes called "cross-correlating") then an overstatement of a particular area of interest, goal, or objective may be created in the mind of a decisionmaker or stakeholder. Hence, it is important to use only as many performance measures as necessary to describe how well the goals and objectives of the sponsoring agency are being met by a particular program.

Audit of TDM Performance Measures

A review of performance measures used by other TDM programs yielded a long list of performance measures. Upon closer inspection, most of the performance measures could be placed into one of three categories:

Those that measure Program Awareness. These are measures of how much exposure the program is getting in the community or how much interest there is in the program. Some programs referred to these as measures of marketing or outreach.

Those that measure Program Participation. This was, by far, the largest group of performance measures, probably because populating the performance measure requires the least amount of effort in terms of data collection. Some of these measures could be used as a proxy for program outcomes – for example, it could be assumed that a participant who is logging several bike commute miles is thus not driving as much.

Those that measure Program Outcomes. These are the performance measures that most programs strive toward, but few were able to report. These are measures of the ultimate goals of a TDM program, such as reducing VMT. Data for these measures are generally more difficult to collect.

The following is a list of performance measures arranged in these same three categories (awareness, participation and outcomes) that were reviewed and compiled from other TDM programs, such as those in Roanoke, VA; Tucson, AZ; Knoxville, TN; Boise, ID; and Tallahassee, FL).

- **Program Awareness:** How Often do Commuters or Employers Ask about the Program?
  - Total program inquiries (RIDE Solutions, Roanoke, VA)
  - Total calls (RIDE Solutions, Roanoke, VA)
  - Total unique visitors to web site (RIDE Solutions, Roanoke, VA)
  - Website activity, number of site visits (Travel Reduction Program, Tucson, AZ)
  - RIDE Solver online calculator submissions (RIDE Solutions, Roanoke, VA)
  - Number of Smart Trips Facebook “likes” and Twitter followers (Smart Trips, Knoxville, TN)
  - Frequency of program advertising (Travel Reduction Program, Tucson, AZ)
  - Follow-up efforts/verifications (RIDE Solutions, Roanoke, VA)
  - Frequency of outreach to area employers (Travel Reduction Program, Tucson, AZ)
  - Presentations/outreach efforts, to employers (RIDE Solutions, Roanoke, VA)
- Program Participation: How Many People have Signed up for the Program?
  - Training of “transportation coordinators” at area employers (Travel Reduction Program, Tucson, AZ)
  - Commuters assisted (Commuter Services of North Florida, Tallahassee, FL)
  - Follow-ups reporting in (Commuter Services of North Florida, Tallahassee, FL)
  - Number of new registrants (Smart Trips, Knoxville, TN)
  - Program registrants (Travel Reduction Program, Tucson, AZ)
  - Program registrants, by mode or specific program (such as GRH) (Travel Reduction Program, Tucson, AZ)
  - Total database matching registrants (RIDE Solutions, Roanoke, VA)
  - Total GRH registrants (RIDE Solutions, Roanoke, VA)
  - Clean Commute Days registrations (RIDE Solutions, Roanoke, VA)
  - Registrations, at events (RIDE Solutions, Roanoke, VA)
  - Total employer clients (RIDE Solutions, Roanoke, VA)

- ◊ Number of Smart Trips employers (Smart Trips, Knoxville, TN)
- ◊ Total vanpool riders (ACHD Commuteride, Boise, ID)
- ◊ Online applications (Commuter Services of North Florida, Tallahassee, FL)
- ◊ Commuters participating (Commuter Services of North Florida, Tallahassee, FL)
- ◊ Participants/vendors, at events (RIDE Solutions, Roanoke, VA)
- ◊ Participation at TDM events, such as "Car Free Tucson" (Travel Reduction Program, Tucson, AZ)
- ◊ Number of registrants that submitted at least one daily commute log (Smart Trips, Knoxville, TN)
- ◊ Active program registrants (Travel Reduction Program, Tucson, AZ)
- ◊ Number of participants qualifying for gift cards (Smart Trips, Knoxville, TN)
- ◊ Seats filled in vanpool (SmartTrips, Fort Collins, CO)
- ◊ Active vanpool routes (ACHD Commuteride, Boise, ID)
- ◊ Guaranteed Ride Home usage (Commuter Services of North Florida, Tallahassee, FL)
- ◊ Total number of daily commute logs submitted by participants (Smart Trips, Knoxville, TN)
- ◊ Miles logged, by mode, past 30 days and total (Missoula in Motion, Missoula, MT)
- ◊ Commute days logged, by mode, past 30 days and total (Missoula in Motion, Missoula, MT)
- ◊ Number of trips, by mode (Smart Trips, Knoxville, TN)
- ◊ TDM programs offered by area employers (Travel Reduction Program, Tucson, AZ)

♦ **Program Outcomes:** What is the Impact and Value of the TDM Program?

- ◊ Vanpool passenger trips (ACHD Commuteride, Boise, ID)
- ◊ Total vanpool miles traveled (ACHD Commuteride, Boise, ID)
- ◊ Miles/vanpool route (ACHD Commuteride, Boise, ID)
- ◊ Vanpool miles traveled (SmartTrips, Fort Collins, CO)
- ◊ Days in the time period that you used a particular mode (Missoula in Motion, Missoula, MT)
- ◊ Commuters changing modes (Commuter Services of North Florida, Tallahassee, FL)
- ◊ CO2 emissions reduced (Smart Trips, Knoxville, TN)
- ◊ CO2 saved, by mode, past 30 days and total (Missoula in Motion, Missoula, MT)
- ◊ CO2 saved (Ticket to Ride, Louisville, KY)
- ◊ VMT reduced (Smart Trips, Knoxville, TN)
- ◊ PM saved (Smart Trips, Knoxville, TN)
- ◊ Fuel and maintenance cost savings (Smart Trips, Knoxville, TN)
- ◊ Mode shift; requires pre and post surveys (Missoula in Motion, Missoula, MT)
- ◊ Change in the frequency of use of non-SOV modes for commute (Missoula in Motion, Missoula, MT)
- ◊ SOV miles/route taken off road (ACHD Commuteride, Boise, ID)
- ◊ Parking needs reduced (Commuter Services of North Florida, Tallahassee, FL)

- ◊ Vehicle trips eliminated (Commuter Services of North Florida, Tallahassee, FL)
- ◊ Total VMT reduction (Commuter Services of North Florida, Tallahassee, FL)
- ◊ Total pounds pollution eliminated (Commuter Services of North Florida, Tallahassee, FL)
- ◊ Average commuter cost savings (Commuter Services of North Florida, Tallahassee, FL)
- ◊ Total reduced fuel consumption (Commuter Services of North Florida, Tallahassee, FL)

Note that several of these measures created by the different TDM programs are actually the same or are very similar, differing only in terms of specific wording.

Creating the raw performance measures is a necessary start, but communicating the measures in a logical system that links the performance measures back to the goals of the TDM program is crucial to achieve a high level of understanding by the stakeholders that support – or question the value of – a TDM program or program element. For example, RIDE Solutions (Roanoke, VA) plans to work toward the following performance measure compilation:

- ♦ Awareness and Attitudes
- ♦ Awareness of options
- ♦ Awareness of RIDE Solutions and its services
- ♦ Ratings of transportation options and GRTC/RideFinders services on specific attributes
- ♦ Factors influencing mode choice
- ♦ Consideration of alternative modes
- ♦ Participation/Use of Services
- ♦ Sources of information
- ♦ Inquiries
- ♦ Contact with RIDE Solutions
- ♦ Usage of specific services
- ♦ Frequency of use
- ♦ Length of time using
- ♦ Barriers to trial
- ♦ Consideration of future use
- ♦ Current services
- ♦ New programs
- ♦ Satisfaction
- ♦ Overall satisfaction ratings for transportation system and support
- ♦ Overall satisfaction ratings for RIDE Solutions
- ♦ Reasons behind ratings
- ♦ Areas for improvement
- ♦ Unmet needs
- ♦ Overall Impact
- ♦ Mode split

- Shifts to non-SOV modes motivated by use of services – trial and continued
- Perceived benefits of mode change – personal, business, societal
- SOV trips eliminated – cars taken off road
- VMT reduction
- Environmental consequences

Measuring Performance in the Region

Based upon our review of the survey results as well as what we have heard from our steering committee during the course of the TDM project, the performance measures described in *Exhibit 8-1* are suggested as a starting point for the program. Note that meeting a specific "target" within a specified timeframe is not as important in the early stages of a TDM (or any other) program as moving in the right direction and articulating the benefits of the program to stakeholders. The measures should be reported no less than every two years to help create continuity and facilitate tracking changes over time.

***Exhibit 8-1*: Suggested TDM Performance Measures & Data Sources**

	Performance Measure	Source	Variable Type
1	**Reduction in Single-Occupant Vehicle Miles of Travel (VMT)**	Survey/TRIMMS	Exogenous
This measure, while it has to be derived from surveys of TDM program participants, is the most highly valued in many TDM programs, in part because it both speaks to the core mission and can be used as an ingredient for other performance measures			
2	**Reduction in Fuel Consumption**	Survey/TRIMMS	Exogenous
This measure has to be created based on assumptions about changes in VMT (see measure #1) and average fleet fuel consumption profiles (which can be obtained from TRIMMS or NCDENR Division of Air Quality)			
3	**Program Participants (by Program Element and Total)**	Survey	Exogenous
This measure, combined with measure number four below, provides basic information about the growth of the TDM program over time; note that bicycling, pedestrians, transit users, telecommuters, etc. should be counted separately as well as totaled together			
4	**Number of New Registrants (by Year)**	Internal Records	Exogenous
The number of new registrants, unlike total program participants, provides a relevant degree of activity in the TDM program sphere of influence, particularly important in terms of determining a return on investment (see measure number 7 as well).			
5	**Meetings/Events Attended**	Internal Records	Endogenous
Although an endogenous variable, this metric helps to describe how often TDM support staff "get out of the office" and make contact with potential and existing TDM participants			
6	**Facebook "likes" or TDM Website "hits"**	Internet Records	Exogenous
While not every person in a community uses Internet-based information sources, many do, and it is popular in this Region that has widespread access to wi-fi connections and a highly educated populace			
7	**Benefit-Cost Analysis (BCA)**	Survey/TRIMMS	Exogenous
In order to create a true BCA, the program costs must be compared against a monetized approximation of the benefits of fuel consumption reductions and other program offsets; this calculation is done inside of the TRIMMS model or can be generated using fixed coefficients applied to each type of program element/ participant (refer to measure number 3)			

Appendix

Several detailed efforts were developed as part of this Plan and used for input into the various chapters contained in this Plan. The results of some of these efforts is included in this Appendix. A Table of Contents is included below.

Appendix A: Peer Regions Reports

The consultant team looked outside North Carolina to identify eight (8) peer services in seven regions across the United States that could be used for evaluation purposes in developing a short-term business plan for re-establishing TDM services. These peer regions were chosen based on a variety of factors related to how a potential regionwide TDM program would operate in the French Broad River region. These factors were based on one or more of the following:

- Successful TDM programs in regions with a population base similar to Western North Carolina.
- TDM programs located in the southern Appalachian Mountains that can potentially be tapped as a resource in addition to existing programs in North Carolina.
- Geography of the peer region in comparison to Western North Carolina, primarily a region with dispersed population and employment patterns that lead to long-distance commutes.
- Governance framework where the TDM program was housed in some type of regional agency, not necessarily a regional transit authority.

The eight peer services are listed below and summarized on the following pages:

- **Ride Solutions, Roanoke, Virginia:** Roanoke is probably the most similar region in the United States to Asheville in terms of location, geography, and development patterns. Ride Solutions has two full-time staff persons devoted to TDM and operates on a budget of less than $200,000 per year. VaDOT is also similar to NCDOT in terms of governance and responsibility for county routes.

- **SmartTrips, Fort Collins, Colorado:** SmartTrips is housed under the North Front Range MPO with characteristics very similar to the Asheville-Hendersonville Corridor. They operate 85 vanpools and 15 park-and-ride lots. Fort Collins is the home of New Belgium Brewing Company.

- **Smart Trips, Knoxville, Tennessee:** Like its counterpart in Fort Collins with the same name, Knoxville's TDM service is housed under the MPO—Knoxville Regional Transportation Planning Organization. Smart Trips manages several outreach and incentive programs but vanpools are limited.

- **Ada County Highway District Commuteride, Boise, Idaho**: In a region with a population of 500,000, Commuteride operates 97 vanpools—more than any metropolitan area in North Carolina—manages 22 park-and-ride lots and coordinates regional marketing and incentive programs including marketing and outreach for the area's bus system, which is managed under a different agency.

- **Ticket to Ride, Louisville, Kentucky**: Ticket to Ride (TTR) is managed by the Kentuckiana Regional Planning and Development Agency, which also operates the MPO. They have a robust multi-modal outreach platform, promoting traditional rideshare as well as schoolpool and bikepool.

- **Commuter Services of North Florida, Tallahassee, Florida:** Commuter Services is operated through Florida State University's College of Business, which makes it an interesting case study in TDM. It is a comprehensive service with 2.75 full-time positions funded. It conducts joint marketing with the area's transit services.

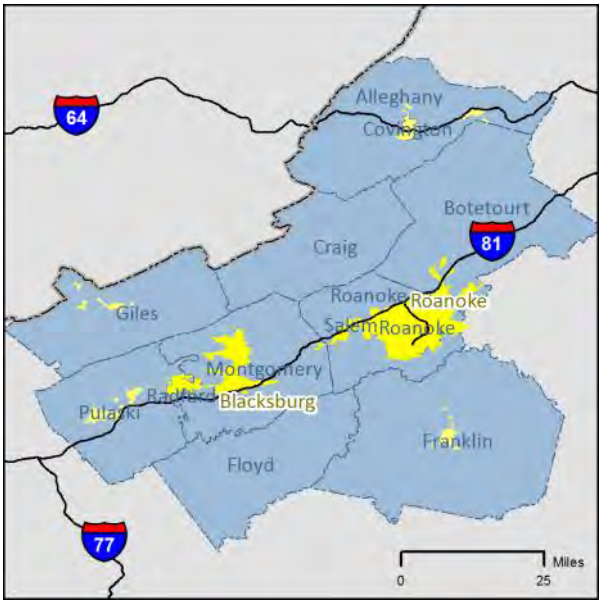
- **Missoula in Motion (MIM) & Missoula Ravalli Transportation Management Association (MRTMA), Missoula, Montana:** The two services are independent within the Missoula region (pop. 178,000 urbanized area) and have different roles for marketing and operations. Missoula in Motion promotes all modes of non-SOV transportation while MRTMA is a separate association in charge of vanpools in the region. Both provide outreach based on their services.

- **Go Maine:** The Portland-based TDM service focuses on the Portland area but also promotes TDM throughout the state. It is funded through the Maine DOT and Turnpike Authority. It has grown from its founding in two counties in southern Maine to now serve a statewide role.

- **Commute Options, Bend, Oregon:** This TDM service in Central Oregon is an independent non-profit agency funded through Oregon DOT, the Safe Routes to School Program and local sources. It began as a citizens advisory group and has grown to provide more comprehensive TDM services.

RIDE Solutions

Roanoke, VA



Parent Agencies

Roanoke Valley-Alleghany Regional Commission (MPO) and New River Valley Planning District Comm.

each is a state-legislated planning district commission

Partners

Sharebike.org, Roanoke Valley Cool Cities Coalition, Greater Roanoke Valley Asthma and Air Quality Coalition and others

provide event co-marketing, in-kind support and information sharing

Years in Operation: 11

Before program, a local transit agency operated a carpool ridematching service

	Population	Density
Urbanized Areas *Roanoke, Blacksburg*	298,653	1,703/mi^2
Urban Clusters *6 distinct areas*	41,683	1,141/mi^2
Total Service Area *9 counties, 4 cities*	509,155	135/mi^2

Staffing: 2.0 FTEs *(0.0039 FTE/1000 service area)*

Program Director and Marketing (0.5) at RV-ARC, Employer Outreach Coordinator (0.5) at NRVPDC; also support from other Commission staff, such as mapping and bike planner

Budget and Funding Sources

	Budget	*per capita (service area)*	Funding Sources		
Operating	$48,750	*$0.10*	Federal	–	
			State	$156,000	VA DRPT Commuter Assistance grant
Marketing	$146,250	*$0.29*	Local	$39,000	RV-ARC, NRVPDC and Virginia Tech
			Fares	–	
Capital	–	–	Federal	–	
			State	–	
			Local	–	
Total	**$195,000**	***$0.38***		**$195,000**	

Roanoke RIDE Solutions, Continued

TDM Programs

*Programs marked with ** were identified as the most successful or most important by the interviewee*

Carpool Ridematching**
- Uses database and Commuter Map to facilitate carpool matches
- Not instant; statewide service exists but has been more successful in metro areas
- Also facilitates vanpool creation, but does not operate any

Transit
- Link to Google Transit for trip planning
- TDM funds and manages Google transit feed

Park-and-Ride
- 11 official VDOT lots
- 12 unofficial lots: informal agreements, conversations or commuter use; working with VDOT to formalize use of private lots

Bike**
- Has become a bigger part of the program, with growing demand from commuters
- Support from local communities
- Economic development initiative to be an outdoor destination
- Roanoke trying to get LAB designation
- Improving visibility of cycling, mostly for commuting
- Works with local communities on bike infrastructure projects
- No demand right now for "bikematching"

Bike and Walk
- Links to resources, including BikeRoanoke.com and walkscore.com

Telework
- Links to resources, including Telework!VA
- Not much demand expressed locally
- Tried to frame Roanoke as place to live for statewide teleworkers

RIDE Solutions Workplace**
- 37 employers
- Work with employers to create company-wide alternative transportation programs
- Often focuses on parking management
- Initially had to actively outreach, now more requests with higher gas prices

Guaranteed Ride Home
- 4 free emergency rides per year on days when you use alternative transportation
- Voucher program
- For registered members only

Incentives
- Clean Commute Challenge
- Occasional drawings
- Identified a need to have more

Non-Traditional Special Event TDM
- Open streets events; TDM is main organizer

Other
- RIDE Solver: calculate commuting expenses
- Red Rack Program: donates bicycle racks to local businesses; advertising plaque on rack for RIDE Solutions; built by local contractor; $150/each with 3-4 installed per year
- Air Quality: initial impetus for TDM program, but becoming less relevant; more about physical health and job opportunities
- Looked into bike/walk buddies for schools

Future Vanpool?
- In 2-3 years, for rural to urban connection
- Have several resources to start: VPSI vanpool program, statewide liability insurance for vanpools, VA vanpool start program to subsidize startup

Roanoke RIDE Solutions, Continued

Employer Snapshot

Concentrated in downtown Roanoke and VA Tech in Blacksburg, then dispersed

Mostly education and healthcare; also retail, some manufacturing and some federal

***102,277** private non-farm jobs in 2010 in the nine-county service area*

Transit Snapshot (2010)

Valley Metro: 32 local routes; 1 express route
passenger trips: 2.4M; miles: 11.1M; hours:110K

BT: 11 local routes; 1 express route
passenger trips: 3.4M; miles: 6.5M; hours: 73K

Marketing

- Work with employers, such as printing and mailings
- Some TV; no print ads
- PR to get in print: OpEds, letters to the editor, press releases
- Some Facebook ads
- New website coming soon: trip logger with points, tied to incentives (may use third-party incentive program, such as New Ride)
- "Want to Carpool? So do I!" magnets for the side of cars: expensive and a third have fallen off and gotten lost; good concept but not sure how best to implement
- YouTube testimonials; not able to keep up due to staff constraints
- Sponsorships with associated efforts, such as Blue Ridge Marathon
- Clean Commute Challenge: TV and radio, media blitzes, events
- Facebook (lots of effort has paid off) and Twitter (getting better)

Technology Integration

- Google maps and other online tools

Performance Measures

- Monthly and quarterly reporting for VDRPT grant

Regulations or Policies that enable or support TDM in the region

- Overall land use trend toward encouraging density helps TDM
- Funding for transit is an issue

Other Things to Note

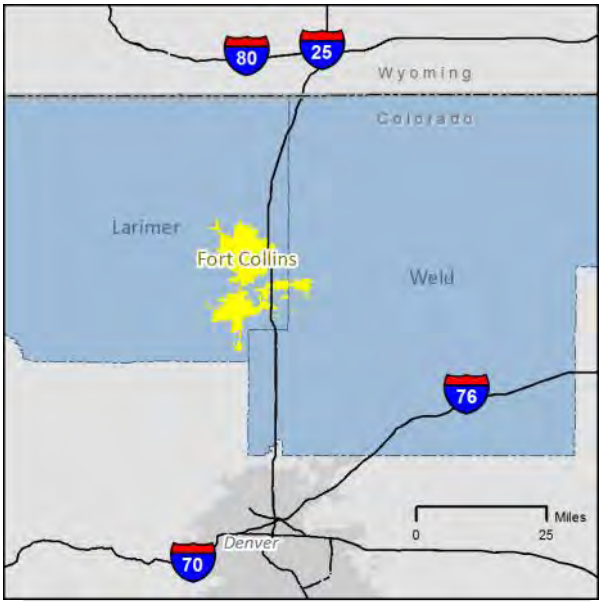
- Congestion is not a significant problem in the area, with the exception of a few small corridors and time periods; even so, the perception of congestion is growing. Though congestion is not of immediate concern, mobility is: Residents of the largely rural areas often have no option but to use SOV travel to get to work, and residents without access to a vehicle can be trapped.
- TDM program is framed as a community organization to help improve the community and quality of life, as opposed to just a ridematching organization. As a result, now get invited to participate in local efforts, such as downtown Roanoke parking study. Was made possible partly through social media and also focused outreach with employers, as opposed to just running "carpool" TV ads.

Contact

http://www.ridesolutions.org

SmartTrips

Fort Collins, CO



Parent Agency

North Front Range Metropolitan Planning Organization (NFRMPO)

Years in Operation: 18

Used to be larger program, with bigger service area and more staff; cut in favor of other CMAQ projects such as traffic lights and bike lanes

Staffing: 2.0 FTEs *(0.0146 FTE/1000 service area)*

Program Manager, Marketing (0.5), Administrative Assistant (0.5)

	Population	Density
Urbanized Area *Fort Collins*	206,757	2,461/mi^2
Total Service Area *2 partial counties*	137,200	2,589/mi^2

All figures from 2000 Census on 2010 NTD report.

Budget and Funding Sources

	Budget	*per capita (service area)*	Funding Sources		
Operating	$1,277,428	*$9.31*	Federal	$436,144	Pass-through NTD from Denver*
			State	–	
Marketing	–	–	Local	$8,297	NFRMPO**
			Fares	$832,987	Vanpool riders
Capital	$265,789	*$1.94*	Federal	$119,688	
			State	$140,436	
			Local	$5,665	NFRMPO**
Total	**$1,543,217**	***$11.25***		**$1,543,217**	

**Denver is cutting this funding down.*

***NFRMPO has given the TDM program 4 years to become self-sufficient.*

Fort Collins SmartTrips, Continued

TDM Programs

*Programs marked with ** were identified as the most successful or most important by the interviewee*

VanGo Vanpool**

- 85 routes
- 2010: 164,318 passenger trips; 9,273,762 miles
- No new vanpools; waiting list
- Owns most vans
- About 16 vans are leased; these will be phased to purchase when leases are up
- Contract with Fort Collins and Greeley for maintenance
- Driver has responsibility for bringing in for maintenance and is given loaner van
- Can no longer afford to have empty seats; current vanpools who don't have at least 5 seats are given the option to cancel the vanpool or pay for the value of the 5th seat

Carpool**

- Rideshare matching
- About 5000 people in the ridematch database
- Provides information, resources and links

Bus

- Provides information, resources and links, including links to local transit agencies

School Pool

- Provides information

Park-and-Ride

- 15 lotes

Bike and Walk

- Provides information, resources and links, including local bike maps

Employer Services

- No active outreach; told by elected officials to not actively outreach to employers
- Unsure how many are using the online tools
- Will assist in a limited capacity, if approached by the employer, but mostly limited to the available online resources

Guaranteed Ride Home**

- Only for VanGo participants
- Up to 2 free rides per 12 month period, up to 100 miles one-way

Incentives

- $50 discount for vanpooler and new vanpooler for recruiting new members, after riding vanpool for two months
- $50 for signing up for recurring payment for VanGo

Other

- Commute cost calculator

Fort Collins SmartTrips, Continued

Employer Snapshot

Largest employers include technology, insurance, education, federal and beer

***171,467** private non-farm jobs in 2010 in the two-county service area*

Transit Snapshot (2010)

Transfort: 18 local routes; 1 express route

passenger trips: 2.0M; miles: 7.1M; hours: 80K

Marketing

- VanGo and CarGo newsletter: sent to vanpoolers and everyone in ridematch database on a quarterly basis; using Constant Contact; written by staff
- YouTube testimonial videos; no longer have staff to develop new videos

Technology Integration

- VanGo™ Online Bill Pay: started about 8 months ago; software was part of NFRMPO's accounting package
- About 3 years ago started recurring payment option with credit or debit card

Performance Measures

- Ridership reported to NTD
- Miles traveled
- Seats filled in vanpool
- Fare recovery, costs covered by fares
- Used to have goals to grow the program by 20%

Regulations or Policies that enable or support TDM in the region

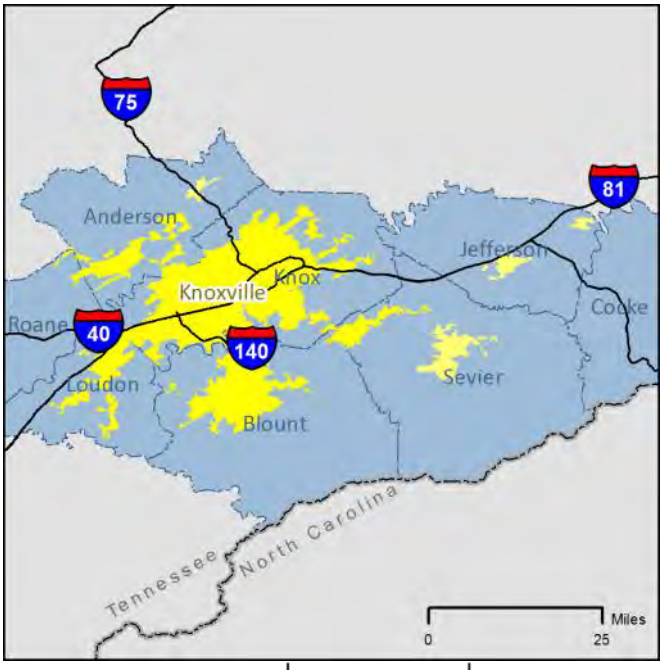
- MPO requirements support TDM on paper
- Vanpool and carpool are part of transportation goals, along with reducing SOV, improving air quality
- Vanpool Strategic Plan developed about 5 years ago

Website

https://smarttrips.org

Smart Trips

Knoxville, TN



Parent Agency

Knoxville Regional Transportation Planning Organization (MPO)

Partners

Knox County Air Quality *provided $10,000 annually but this will be the last year*

Years in Operation: 9

Started with a 0.5 FTE coordinator

Staffing: 2.0 FTEs *(0.0024 FTE/1000 service area)*

Smart Trips Coordinator and Outreach Coordinator; also use part of the MPO bike manager's time to manage the overall program

	Population	Density
Urbanized Areas *Knoxville*	558,696	1,275/mi^2
Urban Clusters *6 distinct areas*	51,692	928/mi^2
Total Service Area *6 counties + 2 partial*	820,217	316/mi^2

Budget and Funding Sources

	Budget	*per capita (service area)*	Funding Sources		
Operating	$194,000	*$0.24*	Federal	$265,000	CMAQ 100%, competitive TDOT program
			State	–	
Marketing	$71,000	*$0.09*	Local	–	
			Fares	–	
Capital	–	–	Federal	–	
			State	–	
			Local	–	
Total	**$265,000**	***$0.32***		**$265,000**	

Knoxville Smart Trips, Continued

TDM Programs

*Programs marked with ** were identified as the most successful or most important by the interviewee*

Smart Trips Overview

- Database has about 800 registered participants
- About 350 are heavy users and about 550 are occasional trip loggers

Carpool and Biking Ride matching

- Uses Ride Shark software (trouble with the software's customer service aspect)
- May move to more dynamic ride matching soon

Transit

- Provides link to KAT and resources on riding the bus

Bike and Walk

- Provides resources and links
- Bike Month

Creative Work Scheduling

- Provides resources and links

Employer Services

- About 60 worksites listed in online system, but not all "active"
- Revamping to a more formalized participation plan
- Active outreach; look at individuals signing up and see where there are several from one employer to make contact
- Use employee transportation coordinators at worksites; emails; events
- Considering establishing a SmartTrips business program to recognize active participating businesses (not as stringent as the Best Workplaces for Commuters program)

Emergency Ride Home**

- Voucher program, for participants who have logged at least 1 clean commute in the past 30 days
- Contracted transportation providers
- Up to 5 per year

Commuter Rewards**

- Up to $20 in gift cards each quarter for participants who log at least 30 days of smart commutes in a quarter
- Gift card for being profiled for the Commuter Close Up
- Random drawings for $50 monthly and $100 quarterly prizes
- Merchants sell gift cards to SmartTrips at a discounted rate (5-10% off)

Other Incentives

- Best Workplaces for Commuters: Smart Trips will help fill out application and pay the annual fee for the first year
- Pass on the Parking: four free parking passes to participants who cancel their downtown parking pass in favor of a greener commute

Non-Traditional Special Event TDM

- Clean Commute Day (2010 and 2011): more than 400 participants in 2010
- Booth at the farmer's market
- No involvement with UT football

Other

- Commuting cost calculator

NO Vanpools

- Comes up in conversations with employers, but no interest to start one
- Univ. of Tennessee has one vanpool

Knoxville Smart Trips, Continued

Employer Snapshot

Largest employers are education, healthcare and Oak Ridge National Laboratory

***509,202** jobs in the service area*

Transit Snapshot (2010)

KAT: 23 local routes; 2 express routes

passenger trips: 3.0M; miles: 11.9M; hours: 213K

Marketing

- Neighborhoods program is mailing a newsletter to every household in a target zip code; first attempt launched May 1, 2012; similar to efforts in Portland and Minneapolis/St. Paul
- Bus wraps
- MetroPulse (weekly free paper)
- Business Journal
- Web ads, TV and radio in the past but budget isn't enough to make it worthwhile
- Facebook, Twitter
- Special events and guerilla marketing
- Flash mob (2011) using beach balls with SmartTrips logo, each representing a pound of air pollution, thrown into a big net to represent how much air pollution each individual produces; will try this year by hiring a dance agency to stage a dancing flash mob then use the opportunity to hand out literature
- Smart Trips Ambassadors

Technology Integration

- Rideshark

Performance Measures

- Number of new registrants
- Number of registrants that submitted at least one daily commute log
- Total number of daily commute logs submitted by participants
- Number of trips by mode
- Number of participants qualifying for gift cards
- CO_2 emissions reduced
- Number of Smart Trips employers
- Number of Smart Trips Facebook "likes" and Twitter followers

Regulations or Policies that enable or support TDM in the region

- Free parking hinders TDM
- Gas prices currently help TDM

Contact

http://smartrips.knoxtrans.org

ACHD Commuteride

Boise, Idaho

Parent Agency

Ada County Highway District

an independent government entity with an $80-90M annual budget and ~300 staff

Partners

Valley Regional Transit, Compass (MPO) and Community Transportation Association of Idaho *provide mutual support*

IDOT *provides grant opportunities, mostly for capital*

Years in Operation: 36

Started with 2 vanpools in response to gas crisis

	Population	Density
Urbanized Areas *Boise & Nampa*	501,183	2,466/mi^2
Urban Clusters *7 distinct areas*	63,371	1,785/mi^2
Total Service Area* *8 counties*	697,535	28/mi^2

**This is the core service area, but any commute that passes through Ada County is eligible.*

Staffing: 8.0 FTEs *(0.0115 FTE/1000 service area)*

Program Manager, Marketing and Outreach (2), Vanpool (2), front desk, accounting, fleet tech (0.5),
temp (0.5); also draw from ACHD staff, including GIS, legal, HR, accounting and others

Budget and Funding Sources

	Budget	*per capita (service area)*	Funding Sources		
Operating	$1,450,000	*$2.08*	Federal	$225,000	STP-DA Ada County
				$55,000	STP-DA Canyon County
			State	–	
Marketing	$250,000	*$0.36*	Local	$200,000	ACHD
			Fares	$1,200,000	Vanpool
Capital	$0-1M*	*$0-1.43*	Federal	80-100%	Typically 5309 grants
			State	–	
			Local	0-20%	
Total	**$1,700,000**	***$2.44***		**$1,700,000**	

**Varies based on grants.*

ACHD Commuteride, Continued

TDM Programs

*Programs marked with ** were identified as the most successful or most important by the interviewee*

Vanpool**

- 97 routes (a program high)
- 2011: 246,000 passengers trips; 1.6M miles
- Owns vans
- Fares per seat, based on mileage
- Minimum of 10-11 riders per van
- Of note: Recently acquired 6 new minivans for nontraditional commutes; wants to expand service more to rural areas

Carpool Ridematching

- Dynamic matching
- Operated through rideshareonline.com

Park-and-Ride

- 20 total; 5 owned and operated by ACHD, paid for with 5309; 3-4 private lots with monetary agreements; remainder are private lots with liability agreements (such as church)

Bike and Walk

- Provides information, including an interactive bike lane map
- Participate in ACHD bike advisory committee

Employer Services

- 200 participants; only 100 active
- Active outreach initially, but not currently since program is so successful
- Provides assistance, including GIS mapping (by ACHD GIS staff) of employee locations and work schedules
- Promotes all modes
- Quarterly events at businesses
- Each outreach staff required to make at least one cold call per week

Guaranteed Ride Home**

- Voucher for vanpool riders
- Reimbursable for all other modes, for registered participants
- Up to six times and $300 per calendar year, while funding is available

Incentives

- First month free for vanpools
- Transi-Cheks, $20 off each of the first three months of the vanpool or Valley Ride monthly bus pass, through participating employers, at no cost to employers
- Full-time monthly vanpool riders with no late payments qualify for a $10/month rebate, awarded quarterly (program being discontinued in favor of not raising fares)
- Vanpool drivers earn up to $35/month, if making on-time payments
- Prizes in fall as part of Ride Share online
- Rider appreciation month, meet the vanpool riders, donuts

Non-Traditional Special Event TDM

- GreenExpo
- May in Motion
- No capacity to do sporting events

Other

- Serve as a retail outlet for Valley Regional Transit bus passes

ACHD Commuteride, Continued

Employer Snapshot

Downtown core with government, otherwise spread out along east/west elongated valley

Largest employers are technology, healthcare and military

***229,450** private non-farm jobs in 2010 in the eight-county service area*

Transit Snapshot (2010)

ValleyRide: 21 local routes; 7 express routes
passenger trips: 1.4M; miles: 7.7M; hours: 90K

Treasure Valley Transit serves rural areas; no demand from program participants

Marketing

- Direct mailed and used phonebooks in the past, but "not a modern approach"
- Radio, billboards, TV
- Event sponsorships
- Internet banners
- Facebook, Twitter, FourSquare, YouTube
- May in Motion, annual employer event

Technology Integration

- Website with ride matching and online vanpool fare payment
- No GPS in vans

Performance Measures

- Total riders
- Passenger trips
- Total miles traveled
- Active routes
- Miles/route
- SOV miles/route
- Taken off road

Regulations or Policies that enable or support TDM in the region

- Ada County Highway District requires large commercial (big box, office park) developments to set-aside parking spaces on the periphery of the parking lots for park-n-ride use.

Website

https://www .commuteride.com

Ticket to Ride (TTR)

Louisville, KY

Parent Agency

Kentuckiana Regional Planning & Development Agency (MPO)

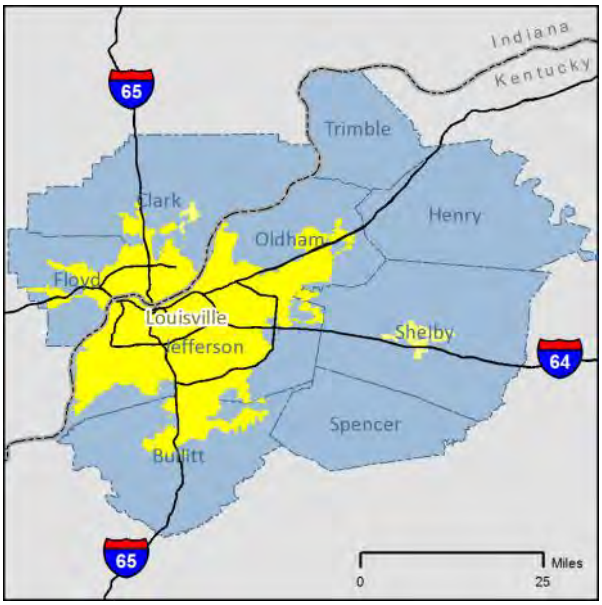
Partners

Transit Authority of River City (TARC) *provides fleet management services for the TTR vanpool program*

Years in Operation: 18

Staffing: 6.0 FTEs *(0.0052 FTE/1000 service area)*

Manager, Marketing/Web/Outreach, Finance/Invoicing, Customer Service/Administration, Maintenance Coordinators (2); also draws from MPO's GIS, finance and HR, and TARC's program management, purchasing, finance and maintenance



	Population	Density
Urbanized Area *Louisville/Jefferson County, KY-IN*	832,366	2,174/mi^2
Urban Clusters *2 distinct areas*	27,542	1,599/mi^2
Total Service Area* *9 counties*	1,143,901	479/mi^2

**Live or work in one of nine counties*

Budget and Funding Sources

	Budget	*per capita (service area)*	Funding Sources***		
Operating	$525,000	*$0.46*	Federal	$472,000	STP-PL
			State	–	
Marketing*	$65,000	*$0.06*	Local	$118,000	Vanpool fees, in-kind marketing
			Fares	–	
Capital**	$225,000	*$0.20*	Federal	–	
			State	–	
			Local	–	
Total	**$815,000**	***$0.71***		**$815,000**	

**Marketing is split: $50,000 for advertising and $15,000 for incentives, such as vanpool start-up subsidies. Used to spend about $200,000 on advertising, but changed focus to web development.*

***Would typically purchase 10 vans at $22,500 each. This year, instead, will spend $60,000 on custom software.*

****Have used CMAQ and ARRA in the past.*

Louisville Ticket to Ride, Continued

TDM Programs

*Programs marked with ** were identified as the most successful or most important by the interviewee*

Vanpool**

- 80 routes
- Manual ridematching
- About 90% of staff time is spent on this program; "most bang for buck"
- 102 vans in the fleet, with 10 used as backups
- Contracts with TARC for fleet management: TARC acquires the vans (with funding from KIPDA), holds title to the vans and provides maintenance, repairs and liability insurance
- KIPDA staff communicates with drivers for scheduled maintenance; vans inspected every 9000 miles
- Riders billed individually (as opposed to billing the driver who then collects from passengers)
- Of note: Vanpool started with VPSI contract, then moved to in-house operation in 2001. It was important to get the fares down from the VPSI rates. Was also a negative perception of selling a third-party vanpool.

Carpool

- Provides information and resources
- Manual ridematching

Schoolpool

- Provides information, resources and an online forum
- Manual ridematching
- Of note: Program is not really marketed; started in past few years

Bikepool

- Provides information, resources and an online forum
- Manual ridematching
- Of note: Program is not really marketed; started in past few years

Park-and-Ride

- A few formal lots maintained by KDOT
- Some informal arrangements between vanpools and private lots

Employer Services

- No "active" employers; attributed to lack of TDM mandate, minimal traffic and commutes
- No current active outreach; only situation based, such as a new large development or specific identified congestion issue
- Private companies generally willing to educate employees but not pay for a program; notes that it is "best to start with HR when approaching"
- Provides training for staff responsible for managing employee transportation issues

Guaranteed Ride Home

- For registered participants who carpool, vanpool, bikepool or ride TARC
- Reimbursable, 80% of cost, up to 100 miles
- Submit receipt with TTR voucher

Incentives

- Subsidies for recruiting new vanpool members

Louisville Ticket to Ride, Continued

Employer Snapshot

Large federal presence, with nearly half of the vanpools going to Fort Know

***496,372** private non-farm jobs in 2010 in the nine-county service area*

Transit Snapshot (2010)

TARC: 31 local routes; 14 express routes

passenger trips: 15.8M; miles: 60.9M; hours: 577K

Marketing

- Email blasting for announcements to participants
- Brochures
- Posters and flyers (available online)
- State highway signs
- Some radio and internet, because vans are currently available
- Twitter
- Van decals
- May event to celebrate van #100 with press conference

Technology Integration

- Website, including mobile version
- Custom software for billing, invoicing, online bill pay, rosters, membership, maintenance, vehicle records (currently in development)
- No GPS on vans

Performance Measures

- Vanpool data for quarterly reporting
- Will soon start reporting to NTD
- Some measures such as CO_2 saved calculated on as-needed basis for presentations
- Hard to calculate benefits of programs other than vanpool

Regulations or Policies that enable or support TDM in the region

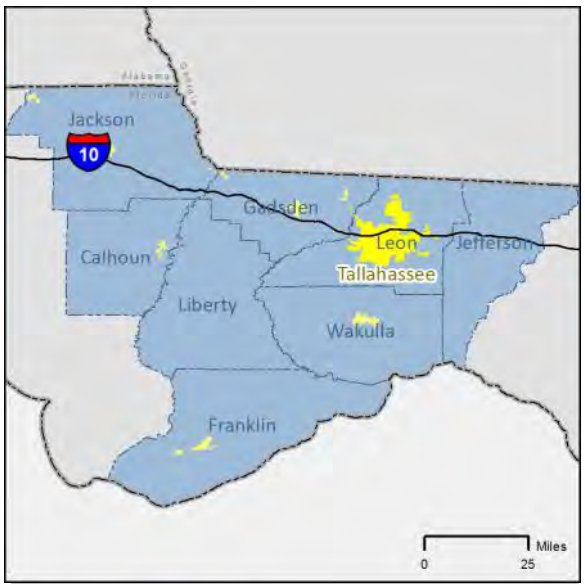
- An average commute of 15 minutes, not highly congested and no mandate for TDM do not help the program
- Commuting pattern helps vanpool program
- No partnership with the City of Louisville to establish things like preferential parking for vanpools or carpools

Contact

http://tickettoride.org

Commuter Services of North Florida

Tallahassee, FL



Parent Agency

Florida State University, College of Business's Marketing Institute *under contract through FDOT District 3 and governed by 6-member Board of Directors; MPO thought to be too geographically restricted for regional TDM*

Partners

StarMetro, Capital Region Transportation Planning Agency, FDOT, Big Bend Transit, West Florida Regional Planning Council, and J-Trans *provide joint marketing and intergovernmental coordination*

Years in Operation: 16

Previously served only Tallahassee

	Population	Density
Urbanized Area *Tallahassee*	240,223	1,899/mi^2
Urban Clusters *8 distinct areas*	44,478	1,199/mi^2
Total Service Area *8 counties*	451,698	86/mi^2

Staffing: 2.75 FTEs *(0.0061 FTE/1000 service area)*

Executive Director (0.25), Commuter Programs Manager, Transportation Planning Coordinator, GIS/Web/Social Media Specialist (0.25), Office Manager (0.25), occasional student helpers

Budget and Funding Sources

	Budget	*per capita (service area)*	Funding Sources		
Operating	$252,982	*$0.56*	Federal	–	
			State	$312,000	FDOT District 3, through a contract
Marketing	$59,018	*$0.13*	Local	–	
			Fares	–	
Capital	–	–	Federal	–	
			State	–	
			Local	–	
Total	**$312,000**	***$0.69***		**$312,000**	

Commuter Services of North Florida, Continued

TDM Programs

*Programs marked with ** were identified as the most successful or most important by the interviewee*

State of Florida has "vague" guidelines for what commuter assistance programs are supposed to do.

Vanpool**
- 20 vanpools with 181 commuters
- Manual vanpool ridematching
- Assistance with acquiring or leasing a van (through VPSI)
- FDOT's Rural Vanpool Program subsidizes costs for rural vanpoolers; pay only 40% of traditional vanpool operational costs; exclusive agreement with VPSI (the region's widely dispersed population base makes this service not as successful)
- State of Florida has very liberal flex-time policy for its employees, which can make vanpools especially difficult

Carpool Ridematching**
- EZRide online computerized ridematching

Transit
- Provides information and links to local transit systems

Park-and-Ride
- 9 lots

Biking
- Provides resources and links
- Free Safe Cycling classes for adults; local cycling groups perform training, often on a volunteer basis but sometimes at cost; offered at least twice a year; sometimes used as a foot in the door to employers related to wellness, as opposed to air quality or congestion

Walking
- Provides information and links

Telework and Flexible Work Scheduling
- Provides information; free consultation for employers

Employer Services**
- ~25 participate
- No-cost assistance and consulting services
- Active outreach when opportunity is right
- Often use network of contacts to meet new opportunities
- Networking through Chambers for smaller employers
- Has been less interaction as budgets are cut
- A few years ago, each State department had a dedicated Employee Transportation Coordinator; all were lost when State HR was privatized

Emergency Ride Home**
- Live or work in service area and commute to work at least three days per week by carpool, vanpool, walk, bus, or bike
- Voucher program

Incentives
- Best Workplaces for Commuters

Other
- Fuel Price Survival Guide: tips for reducing daily commute costs
- Commute Cost Calculator
- For College Students: about 60000 college students in Tallahassee

Commuter Services of North Florida, Continued

Employer Snapshot

State government is about 50% of jobs; also a lot of education

Mostly large and small employers, not medium

Large regional hospitals not receptive to TDM

***181,316** jobs in the eight-county service area*

Transit Snapshot (2010)

StarMetro: 35 local routes; 12 campus routes

passenger trips: 4.8M; miles: 13.6M; hours:186K

Big Bend Transit: 1 express route

Marketing

- Internal marketing to database subscribers
- Posters (available online)
- Billboards, mostly in rural areas; has been effective
- Some TV (expensive) and radio (not effective)
- Blog
- Facebook, Twitter and YouTube
- To note: Will use State of Florida's recent evaluation to frame future marketing efforts

Technology Integration

- Website and online ridematching

Performance Measures

- Quarterly Progress Reports, includes several performance measures according to a number of objective-oriented tasks, grouped into three categories: Commuter Programs, Intergovernmental Coordination, and Marketing and Communications

Regulations or Policies that enable or support TDM in the region

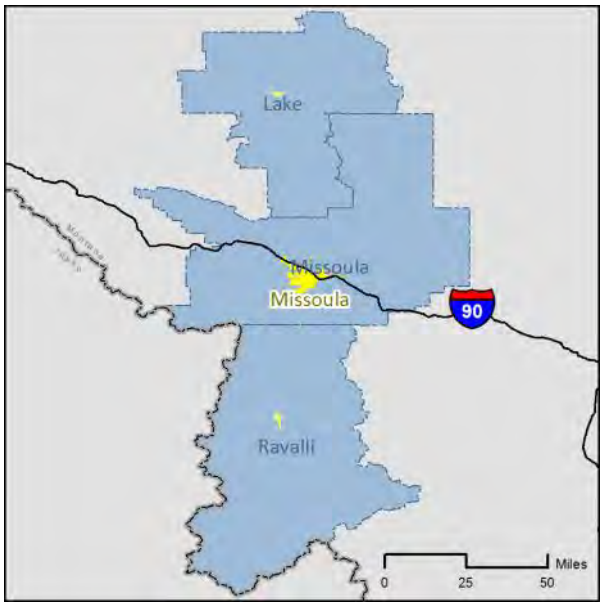
- TDM program is heavily involved in MPO and local transportation planning to make sure they pay attention to the needs of commuters
- Tallahassee provides exemptions for parking for commercial developments that implement TDM, with an emphasis on urban infill
- Tallahassee is in the process of establishing a multimodal transportation district around their CBD, which will apply parking exemptions to any project that implements TDM
- State law requires "developments of regional impact" to incorporate TDM in order to be approved; current governor is trying to get rid of this law

Contact

http://www.commuterservices.org

Missoula in Motion

Missoula, MT



	Population	Density
Urbanized Area *Missoula*	82,157	1,818/mi^2
Urban Clusters *2 distinct areas*	10,945	1,555/mi^2
Total Service Area* *3 counties*	178,257	28/mi^2

**Service area is "live or work in Missoula County." For consistency, service area is the same as MRTMA.*

Parent Agency

Missoula County, Office of Planning and Grants, Transportation Department (MPO)

Partners

City of Missoula, Missoula County, Parking Commission, Univ. of Montana, Transit District *provide local match*

City of Missoula Bike/Ped Committee and MR TMA *provide mutual support*

Years in Operation: 15

Started in response to PM nonattainment

Staffing: 3.5 FTEs *(0.0196 FTE/1000 service area)*

Program Supervisor (0.9, budgeted for 1.0), Program Specialist, Program Assistant (0.8), Administrative Assistant (0.8); also draw from the County for HR, bookkeeping, GIS

Budget and Funding Sources

	Budget	*per capita (service area)*		Funding Sources		
Operating	$247,700			Federal	$277,695	CMAQ
				State	–	
Marketing	$79,000			Local	$49,005	City, County, Parking Commission, UM, Transit District, event fees, sponsors
				Fares	–	
Capital	–			Federal	–	
				State	–	
				Local	–	
Total	**$326,700**				**$326,700**	

Missoula in Motion, Continued

TDM Programs

*Programs marked with ** were identified as the most successful or most important by the interviewee*

Purpose of program is to "market, promote and incentive TDM."

Carpool/Vanpool

- Provides links to the Missoula Ravalli Transportation Management Association (MRTMA) website

Bus

- Provides links to Missoula's Mountain Line

Bike and Walk

- Provides links and resources

Telecommute

- Provides links and resources

Employer Services – Momentum**

- 103 peak during Commuter Challenge; ~80 active
- Provides quarterly meetings, outreach, and support so businesses can support their employees' and customers' use of sustainable transportation
- Mostly employers who seek out the program for the bus pass program, then that is used as the foot in the door to other TDM
- Also do outreach through Commuter Challenge by asking WTG! members to sign-up their employer

Guaranteed Ride Home

- For WTG!C members, EZ PASS holders…
- Up to 4 free rides per year
- GRH program for the entire region, including MR TMA

Incentives – Way To Go! Club**

- Provides rewards and incentives for people who commit to commuting sustainably
- Prizes for signing up, logging sustainable commutes and reaching certain milestones
- About 3000 members, which has been steady over past 5 years

Other Incentives

- Transportation Best Practices Awards: given to businesses and organizations that have gone the extra mile in making a solid commitment to sustainable transportation programs
- Breakfast on bridges

Non-Traditional Special Event TDM

- Bike Walk Bus Week
- Commuter Challenge, a business-to-business competition
- "Sunday Streets" (close streets)
- Used to do "Pedal Festival" as a fundraiser to celebrate biking
- Bikes, Baseballs and umBrellas; partner with Missoula Osprey
- Hospital bike helmet sales; partner to distribute

Other

- EZ PASS: annual bus pass that employers can purchase for their employees; unlimited rides on Mountain Line buses. At least 8 employers participate. Available to all members of the downtown business association, but also on a case-by-case basis to other employers.
- Commuter Calculator

Missoula in Motion, Continued

Employer Snapshot

Most concentrated in City of Missoula (4mi^2)

Largest employers are federal, hospitals, city/county and Univ. of Montana
A lot of nonprofits; not many medium-size businesses

***61,477** private non-farm jobs in 2010 in the three-county service area*

Transit Snapshot (2010)

Mountain Line: 12 local routes
passenger trips: 0.8M; miles: 2.7M; hours: 45K
Of note: 3-slot bike racks on all buses

Marketing

- WTG!C quarterly newsletter
- Internet videos
- ~10 bus benches (looks like a couch)
- TV and radio
- Posters (available online) used for employer kiosks
- Print ads, in daily and weekly newsletters
- Billboards, 6 out of 12 months in two strategic locations
- Facebook (successful) and Twitter
- Will be looking at individualized marketing through employers

Technology Integration

- Website and backend database specifically designed for MIM; robust filtering capabilities
- Constant Contact for member newsletter
- Created flash drive with Momentum files as giveaway to employers
- Would like a trip log mobile app

Performance Measures

- CO_2 saved, by mode, past 30 days and total
- Miles logged, by mode, past 30 days and total
- Commute days logged, by mode, past 30 days and total
- Trying to look at mode shift; requires pre and post surveys

Regulations or Policies that enable or support TDM in the region

Many that support TDM!

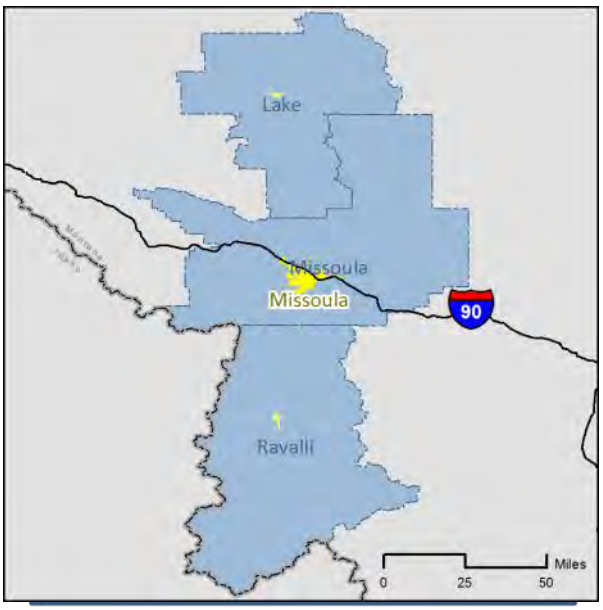
- Transportation department focused on land development that supports TDM
- Parking code allows reductions in car parking if bike parking provided
- Some parking reduction as part of development review when TDM provided (case-by-case basis, not codified)
- City of Missoula has a complete streets policy
- Health department has a healthy built environment program
- Parks department engaged in both commuter and recreational trails
- TDM is in the LRTP, and has been for a long time
- Local active transportation plan

Website

http://www.missoulainmotion.com

Missoula Ravalli Transportation Management Association (MR TMA)

Missoula, MT



MR TMA is a nonprofit governed by a board, with members voted on by the board, typically from funding agencies but also vanpool drivers

Partners

City of Missoula, Missoula Co., Ravalli Co., Montana Parking Commission, Univ. of Montana, UM Found. and GlaxoSmithKline *provide financial support*

Years in Operation: 15

Recommended as alternative to widening Hwy. 93

Staffing: 2.0 FTEs *(0.0112 FTE/1000 service area)*

Executive Director (0.5), Vanpool/Ride Match Manager, School Outreach Coordinator (0.5)

	Population	Density
Urbanized Area *Missoula*	82,157	1,818/mi^2
Urban Clusters *2 distinct areas*	10,945	1,555/mi^2
Total Service Area *3 counties*	178,257	28/mi^2

Budget and Funding Sources

	Budget	*per capita (service area)*	Funding Sources		
Operating	$260,999	*$1.46*	Federal	$76,320	CMAQ
				$115,492	5311
			State	–	
Marketing	$2,110	*$0.01*	Local	$71,297	Consortium of Ravalli, Missoula and Lake County organizations
			Fares	–	
Capital	$112,000	*$0.63*	Federal	$88,000	State of Good Repair Grant
			State	–	
			Local	$24,000	Consortium of Ravalli, Missoula and Lake County organizations
Total	**$375,109**	***$2.10***		**$375,109**	

Missoula MR TMA, Continued

TDM Programs

*Programs marked with ** were identified as the most successful or most important by the interviewee*

iRide Vanpool**

- 19 routes; about 175 people
- Currently have a waitlist of 123 people, partly due to a delay in acquiring vans (7) awarded over the past 3 years
- Owns vans (used to lease, but owning viewed as better long-term option)
- Fares are per mile on a scale, with those driving farthest paying lowest per mile rate; all inclusive

Carpool Ridematching

- Provides tips and application
- Not dynamic (used to be, but got only 2 matches over a 3 year period)
- Viewed by staff as support for the vanpool program, but not very successful (only ~200 in database and most looking either don't have a car or don't want to drive)

Park-and-Ride

- 26 lots
- Some developed in MDOT right-of-way during road construction projects
- Most voluntarily established in grocery store parking lots (motivation: vanpool/carpool riders will go in at beginning or end of trip)

Employer Services

- ~6 active employers
- 97 total employment sites served, initiated by employees rather than the employer
- Hard to have active outreach with a long vanpool waitlist
- Go to staff meetings to discuss how to set up TDM, then work with employers if interested

School Outreach

- Educational presentations about transportation options, environmental concerns and alternatives to driving alone for students in Missoula and Ravalli Counties
- One of first programs implemented; School Outreach Coordinator has a teaching degree, so materials are developed in-house

Guaranteed Ride Home

- Operated by Missoula in Motion

Non-Traditional Special Event TDM

- Use vanpool to take elected officials on trips, such as tours developments
- Try to not get into charter bus territory

Other

- Preferential Parking for Carpools and Vanpools: works with the Missoula Parking Commission, the Univ. of Montana and various employers to create preferential parking areas for carpoolers and vanpoolers. Has also worked with MDOT during road construction projects to ensure vanpool gets through flagging operations more quickly.
- Used to use vans during the day to transport seniors and persons with disabilities with hired drivers M-F 8-5. MDOT consolidated program into Mountain Line Transit as a cost-saving measure. In near future, may be contracting with another local organization to allow them to use the vans during the day.

Missoula MR TMA, Continued

Employer Snapshot

Most concentrated in City of Missoula (4mi^2)

Largest employers are federal, hospitals, city/county and Univ. of Montana
A lot of nonprofits; not many medium-size businesses

***61,477** private non-farm jobs in 2010 in the three-county service area*

Transit Snapshot (2010)

Mountain Line: 12 local routes
passenger trips: 0.8M; miles: 2.7M; hours: 45K
Of note: 3-slot bike racks on all buses

Marketing

- Van wraps (generates 93% of calls)
- Word of mouth (generates remaining 7% of calls)
- Have done TV, radio and print advertising in the past, but not now

Technology Integration

- No GP S in vans

Performance Measures

- Lots of typical vanpool related measures
- Some carpool measures
- No way to measure if school outreach program is successful

Regulations or Policies that enable or support TDM in the region

- Locally reducing parking requirements may help, though interviewee was skeptical

Contact

http://www.mrtma.org

GO MAINE

Maine

Parent Agency

Greater Portland Council of Governments

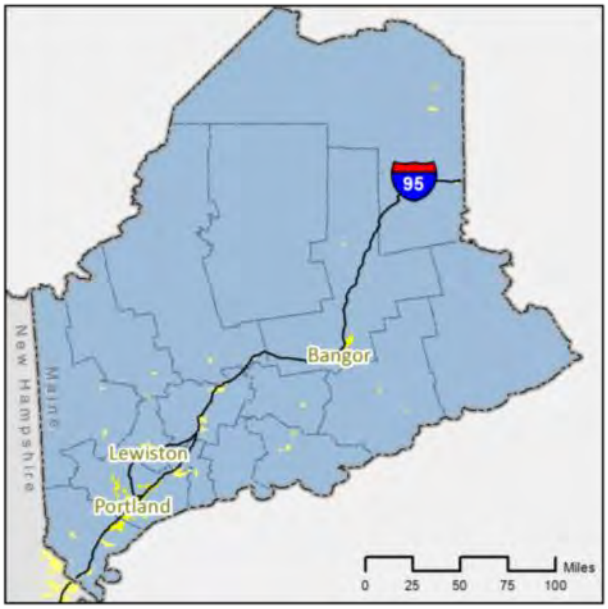
Partners

Maine Department of Transportation and Maine Turnpike Authority *provide funding*

Portland Area Comprehensive Transportation System (MPO) and the City of Portland *provide mutual support*

Years in Operation: 14

Started in York and Cumberland Counties as "Southern Maine Rideshare;" transitioned to statewide in 2001



	Population	Density
Urbanized Areas *Portland, Bangor, Lewiston*	324,521	1,518/mi^2
Urban Clusters *23 distinct areas*	189,021	1,296/mi^2
Total Service Area *16 counties*	1,328,361	43/mi^2

Staffing: 3.5 FTEs *(0.0026 FTE/1000 service area)*

Program Manager, Vanpool Coordinator/Database Management, Technical Coordinator/Outreach, E-Communications (0.5); also indirect and admin from COG

Budget and Funding Sources

	Budget	*per capita (service area)*	Funding Sources***		
Operating	$303,750-$420,000	*$0.23-$0.32*	Federal	$175,000-$400,000	CMAQ through MDOT
			State	$230,000	Maine Turnpike Authority
Marketing*	$101,250-$210,000	*$0.08-$0.16*	Local	–	
			Fares	–	
Capital	–	–	Federal	–	
			State	–	
			Local	–	
Total	**$405,000-$630,000**	***$0.31-$0.47***		**$405,000-$630,000**	

TDM Programs

*Programs marked with ** were identified as the most successful or most important by the interviewee*

Vanpool

- At peak, had 28 vanpools throughout the state
- Vanpools were owned and maintained by MDOT; day-to-day management by GPCOG
- Started with state employee vanpools in late 1970s
- With discontinuance of program, down to 8 vanpools that staff were able to salvage by connecting existing vanpool riders with private vanpool companies

Ridematching

- For vanpools, carpools, bike and transit partners
- 9,500 participants registered
- Use Trapeze Ridepro ridematching software; split cost with Vermont and also share database with New Hampshire for cross-border commuters
- Ridematching needs to move toward mobile platforms to keep up with technology

Park-and-Ride

- About 55 total; most owned or leased by MDOT, some by Maine Turnpike Authority
- Some informal park-and-rides in the rural areas filling in the gaps

Transit

- Links to transit agencies throughout the state
- Ridematching for transit partners

Bike and Walk

- Resources and information
- Ridematching for bike or walk partners

Emergency Ride Home

- For registered participants, regardless of mode

Employer Services

- Provides no cost, turnkey TDM solutions for employers
- 300 to 400 employers in database; about 50 active
- Combination of active outreach and responding to inquiries; some targeted marketing
- Program has never been able to change the commute culture

Marketing and Outreach**

- Nationally recognized marketing efforts
- Commuter Week was an annual outreach event for 17 years; cut last year
- Exhibited at Maine Human Resources exhibition

Other

- Trip Planner helps find ridematches for nontraditional work schedules, such as students
- E-Z Pass for toll roads

Employer Snapshot

480,932 private non-farm jobs in 2010 in the statewide service area

Transit Snapshot (2010)

METRO (Portland): 8 local routes

passenger trips: 1.4M; miles: 5.8M; hours:69K

19 other transit systems in communities throughout the state

Marketing

- Direct mail every couple of years
- Monthly e-communication, such as newsletter
- Social media
- Posters and other collateral for displays
- Fair amount of radio, though not enough to be effective due to budget constraints
- TV too expensive
- No billboards in Maine
- Tried variable message boards, but not able to work with MDOT to make it happen

Technology Integration

- Ridepro ridematching software

Performance Measures

- Measures that showed whether the program's reach was increasing, such as number of registered participants, Facebook "likes" and website visits

Regulations or Policies that enable or support TDM in the region

- City of Portland requires employers of a certain size to have a TDM plan
- No trip reduction requirement in the state, so operating in a "free-form environment" with respect to TDM

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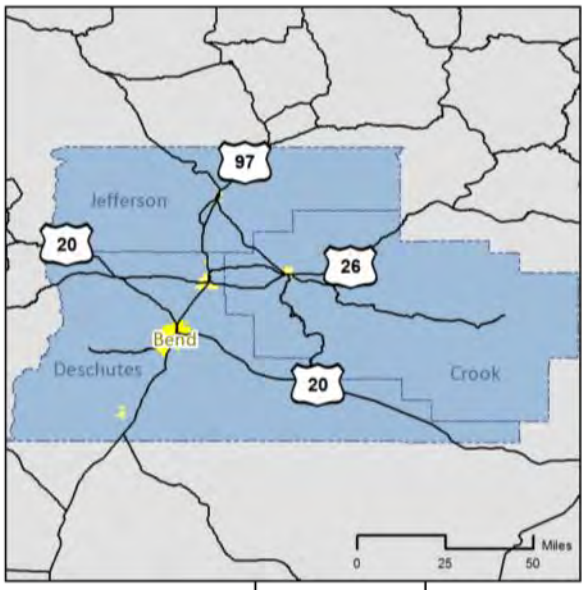
Commute Options

Bend, OR

4.0



Parent Agency

Commute Options, *a non-profit organization*

Partners

Board of Directors *oversees long range planning and fiscal aspects*

Working Group *helps make program-level decisions*

Commute Options Partners (COPs) *are employers who participate in rewards program*

	Population	Density
Urbanized Areas *Bend*	83,794	2,110/mi^2
Urban Clusters *3 distinct areas*	49,251	1,699/mi^2
Total Service Area *3 counties**	200,431	26/mi^2

**employer outreach in The Dalles and Klamath Falls*

Years in Operation: 21

Began as a citizen advisory group; after four years, awarded funds for rideshare matching and promoting teleworking

Staffing: 4.0 FTEs *(0.0200 FTE/1000 service area)*

Executive Director, Community Outreach, Partners Liaison, Safe Routes to School Coordinator

Budget and Funding Sources

	Budget	*per capita (service area)*	Funding Sources		
Operating	$300,000	*$1.50*	Federal	$80,000	ODOT Region 4
			Federal	$57,000	SRTS
			State	$116,000	ODOT contract
Marketing	$30,000	*$0.15*	Local	$77,000	various (^see next page)
			Fares	–	
Capital	–	–	Federal	–	
			State	–	
			Local	–	
Total	**$330,000**	***$1.65***		**$330,000**	

TDM Programs

*Programs marked with ** were identified as the most successful or most important by the interviewee*

Employer Partner Program**

- 75 businesses participate
- Staff assesses employer's needs, makes specific recommendations for TDM options, then connects employer with appropriate resources
- Main incentive for employers is tax credits, cost savings and reducing carbon footprint
- In 2010-11, program expanded to cover an area about 265 miles from north to south; involved collection of information on employers and a diverse outreach campaign

Vanpool

- Assists with coordinating between commuters and Enterprise or VPSI
- 8 routes in operation
- Recommends vanpools for employers with a large concentration of employees in the same area who commute 20 miles or more
- Volunteer drivers generally commute at no cost
- Each vanpool sets its own rules

Carpool Ridematching

- Manage the Central Oregon Rideshare Database, which also serves as the statewide ridematching database
- About 450 registered participants
- Registrants fill out online application then are contacted by Commute Options with matches

Park-and-Ride

- 8 in the region; most small with 5 to 20 spaces
- Most funded by ODOT; managed by Commute Options

Transit

- Provides link to Cascades East Transit

Bike and Walk and Telework

- Provides resources for safe walking and biking
- Provides presentations and resources for employers regarding teleworking

Rewards and Incentives

- Employees of Partner employers receive a $25 gift certificate from a local business for every 45 days an alternative commute is logged
- Discount at local business for mentioning Commute Options

Other

- Annual Commute Options Week, promotes alternative modes through contests and outreach activities
- Manages the region's Safe Routes to School program for 13 schools; branching into health promotion with participation in Kids@Heart, funded by St. Charles Medical Center to fight childhood obesity and promote heart health

^Local sources include Commute Options Partners dues; City of Bend TDM contract; Deschutes County ODOT match; Commute Options Week sponsorships and other revenue; concert and other revenue; donations; business energy tax credit outreach; scholarships; and merchandise

Employer Snapshot

Employers are concentrated in Bend

Employment in the region is heavily focused on tourism related to Mt. Bachelor

58,621 private non-farm jobs in 2010 in the 3-county service area

Transit Snapshot (2010)

Cascades East Transit: 7 local routes; 9 regional

Bend Area Transit recently merged with Cascades East Transit to provide a seamless bus service in the region

Marketing

- TV, radio, print, posters, assorted collateral
- Social media and website
- Special events
- Earned media such as local articles, new stories and radio interviews
- Hands-on employer outreach at events works the best

Technology Integration

- Interactive web portal through Drive Less Connect

Performance Measures

- Many as required by the board and contract managers, including:
  - Number of visits to the website
  - Number of TDM events, conferences and meetings attended, for education and outreach
  - Number of meetings with potential Commute Options Partners

Regulations or Policies that enable or support TDM in the region

- We are working on this, some parking regulations with the city governments, not enough

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Appendix B: Plans & Policy Review

A number of transportation, land use and economic development plans in the region were reviewed to see to what extent transportation demand management is already supported in the region. This helps to establish a baseline for any new TDM efforts and also identifies potential opportunities for strengthening support for TDM through these related plans.

Since TDM can encompass a broad range of ideas, and because many plans do not specifically refer to TDM, it was necessary to establish distinct ways that a plan might support TDM:

- **Specifically supports TDM:** Goals or recommendations that specifically mention Transportation Demand Management;
- **Directly supports TDM-type efforts:** Goals or recommendations that support education, encouragement, incentives or other types of programs for:
  - Ridesharing;
  - Transit;
  - Non-motorized;
  - Flexible work; and
  - Other
- **Supports efforts that support TDM:** Goals or recommendations that support other related efforts that improve the chances of success of a TDM program, such as:
  - Compact communities
  - Road connectivity or design
  - Transit facilities or operations
  - Non-motorized facilities
  - Multi-modal transfers

Exhibit X-X on the following page provides a summary of the results of this review. The text summaries that follow provide specific examples from each plan that support TDM. The bulk of this section will likely be moved to the Plan's Appendix with the matrix and recommendations contained in the final report.

Asheville Comprehensive Bicycle Plan (2008). Provides for transportation alternatives and enhanced quality of life by creating continuous linear bicycle connections, providing bicycle facilities for the full range of users, and increasing safety and mobility of bicyclists in Asheville.

- Directly supports TDM-type efforts
  - Non-motorized
    - Provide transportation alternatives
    - Work with UNC-Asheville and other local schools to identify, evaluate and prioritize the most cost effective strategies to support bicycling to and from campus
    - Support Employer Incentive Programs to encourage bicycle commuting by providing information about economic benefits, health benefits, and potential commuting routes to employers and employees
- Supports efforts that support TDM
  - Road connectivity or design
    - Roadways should be designed so that bicycles and buses co-exist safely and efficiently
  - Non-motorized facilities
    - Undertake a detailed analysis of Asheville's policies, funding mechanisms and maintenance policies looking for opportunities to better provide for bicycle needs
    - Continue to support Asheville Transit's "Bike on Bus" program
  - Multi-modal transfers
    - Improve bicycle access to bus stops and stations to make the transition between trans-

TDM Elements of Various Plans in the French Broad River Region

		Directly supports TDM-type efforts					Supportive elements that promote TDM				
Plan & Documents	Specifically Supports TDM	Ridesharing	Transit	Non-Motorized	Flexible Work	Other	Compact Communities	Road connectivity or design	Transit facilities or operations	Non-motorized facilities	Multi-modal transfers
Asheville Bicycle Plan				●				○		●	●
Avl-Bunc. Reg. Feasibility Study	○	○	●			●			●		●
Asheville City Dev. Plan	●		●				●	●	●	●	●
Asheville Downtown Plan				○		○	○		○	○	
Asheville Pedestrian Plan	●			○				○		●	
Asheville Reg. Housing Plan	○		○	○			○				
Asheville Transit Plan			●				○	○	●	○	
Black Mountain Ped. Plan							○			○	
Buncombe Greenways Plan				●			●	○		●	○
Buncombe Land Use Plan	○	○					●				
Buncombe Sustainability Plan		○	○	○		○	●	○	○	○	
FBRMPO CMP		○			○	○	○		○	○	
FBRMPO CTP					○				●	○	
FBRMPO Coordinated Plan			●						●	○	
FBRMPO LRTP 2035		○			○		○	●	●	●	●
Haywood Bike Plan				●							
Hendersonville Comp Plan				●			●	●	●	●	
Hendersonville Ped. Plan			○	○						○	
LOSRC Econ Dev. Plan							○		●	●	
NC Statewide Logistics Plan								○			
NC Statewide Trans. Plan									○	●	
NCDOT Complete Streets								●			
Seven Portals Study						●			○		
Trans. Options for WNC		○	○	○			○		○	○	
Transylvania Co. CTP			○						●	●	
Waynesville Land Dev. Plan							○	○	●	●	
Waynesville Ped. Plan								○		●	

● Strong support; ○ Moderate support

portation modes as seamless as possible
- Bicycle route information should be integrated into transit route maps and signs

Asheville-Buncombe Regional Feasibility Study (2010). Plan is summarized in Chapter 6 Business Plan.

Asheville City Development Plan 2025 (2002). Proposes a land use pattern, transportation network and system of City services and infrastructure that reflects the community desires and wishes concerning the future growth of the City of Asheville.

- ♦ Specifically supports TDM
  - ○ Develop plans and marketing materials to provide a strong local Transportation Demand Management Program, including updating the long-range transportation plan to provide a Transportation Demand Management component and working with the NCDOT to secure funding for such a program
- ♦ Directly supports TDM-type efforts
  - ○ Transit
    - Increase community knowledge of the transit system through marketing
    - Locate and implement informal park and ride areas
- ♦ Supports efforts that support TDM
  - ○ Compact communities
    - Pursue compatible adaptive reuse, redevelopment and infill development, while insuring that sufficient infrastructure capacity exists or will be provided to accommodate this development
    - Implement a new urbanist development pattern along selected commercial corridors and in infill areas where appropriate
    - Permit and encourage transit supportive density along and adjacent to major corridors and at logical transit nodes
    - Create pedestrian oriented zones throughout the City in tandem with urban villages and concentrated areas of development
    - Adopt land use strategies and site design standards that encourage bicycling and walking
    - Promote a land use policy that is supportive of transit service, such as Urban Villages and nodal pedestrian-oriented development
  - ○ Road connectivity or design
    - Look for opportunities to increase the local street connections
    - Develop street design templates that not only address the design of the roadway, but also address the character, scale and design of adjacent development
    - Revise subdivision regulations to require pedestrian and, where feasible, vehicular connections within the subdivision and between the subdivision and adjacent property
    - Modify the Asheville subdivision regulations to require street connectivity and street stubs to adjacent property
  - ○ Transit facilities or operations
    - Expand service hours and frequency of service
    - Expand inter-city service to Hendersonville, Black Mountain, Weaverville, Mars Hill and Sylva
    - Upgrade and expand amenities at the transit center and bus stops, including system maps, information systems, benches and shelters
    - Develop a passenger rail station at Biltmore Station
  - ○ Non-motorized facilities
    - Preferred street design cross-sections should provide provisions for bike lanes and sidewalks
    - In urbanizing environments, it should be assumed that pedestrian facilities and pedestrian needs should be an integral part of the design of roadways

- Continue to require sidewalks or other pedestrian walkways in all new development
- Develop a system of sidewalks, greenways and bicycle facilities that will make Asheville a more walkable and more livable city
- Create a "Walkable Intersection Program" as a cooperative effort between the City of Asheville and NCDOT

○Multi-modal transfers

- Develop a multimodal approach to transit service, including integration with the train station when passenger rail operations begin in Asheville
- Develop the passenger rail station as a multi-modal hub where people will be able to transition from inter-city travel by rail to intra-city travel by bus, by car, by bike and on foot

Asheville Downtown Master Plan (2009). Provides strategies and action steps for experiencing, shaping and managing downtown Asheville.

♦Directly supports TDM-type efforts

○Non-motorized

- Encourage biking to work, to school and in combination with transit use

○Other

- Dedicate some public parking spaces for use by shared-car services

♦Supports efforts that support TDM

○Compact communities

- Integrate multifamily and townhouse residential buildings into Downtown's fabric

○Transit facilities or operations

- Proceed with the Downtown shuttle service feasibility study; the shuttle will offer Downtown employees a compelling alternative to all-day parking, enhance mobility for residents and tourists, and include seamless transfers to the region's transit systems

○Non-motorized facilities

- Implement Downtown elements of Asheville's 2008 Comprehensive Bicycle Plan
- Improve the Downtown walking network

Asheville Pedestrian Plan (2005). Provides technical information for City of Asheville staff and elected officials to make decisions on where to invest limited resources and how to improve policies and procedures that improve pedestrian safety and infrastructure.

♦Specifically supports TDM

○Promote walking within the Transportation Demand Management Program

○Complement efforts of the City's Transportation Demand Management Program… to reduce single-occupancy vehicles through public education

○Incorporate Promotion and Improvement of Pedestrian Activity into the new City TDM program

♦Directly supports TDM-type efforts

○Non-motorized

- Walking is the mode of choice for short trips and a viable commuting option

♦Supports efforts that support TDM

○Road connectivity or design

- Increase connectivity for convenient pedestrian transportation

○Non-motorized facilities

- Pedestrian network that includes sidewalks, pedestrian crossings, and greenways
- Support transit use through a pedestrian network that accommodates transit stop facilities and connections
- Amend UDO and/or Standards and Specifications Manual to include greenways, ADA and transit needs into Sidewalk Regulations and Technical Review Processes
- Work through the MPO and with the NCDOT Division Office to develop a Sidewalk Policy for ETJ (or JPA Areas if designated) who request assistance

City of Asheville and the Asheville Regional Housing Consortium Consolidated Strategic housing and Community Development Plan (2010). Provides framework for using federal HOME funds in Buncombe, Henderson, Madison and Transylvania counties and Community Development Block Grant Funds in Asheville.

- ♦Directly supports TDM-type efforts
  - ○Transit: Expand transit as funding allows. Commuter bus route between Madison County and Asheville. Enlist support for more transit in Henderson County.
- ♦Supports efforts that support TDM
  - ○Compact communities: Notes issues with need for density and access to transit; also with opposition from neighborhoods to implement. Encourages higher density along transit corridors.

City of Asheville Transit Master Plan (2009). Provides specific recommendations for service enhancements through 2020 for Asheville Transit, including the recent service changes.

- ♦Directly supports TDM-type efforts
  - ○Transit
    - •Market to choice riders and tourism
    - •Make transit part of community lifestyle
- ♦Supports efforts that support TDM
  - ○Compact communities
    - •Land use planning along corridors
  - ○Road connectivity or design
    - •Increase roadway connections to shorten transit routes
  - ○Transit facilities or operations
    - •More frequent transit on main travel corridors
    - •Improve service for captive riders
    - •Additional transfer location outside of downtown
    - •Improve on-time performance
    - •Speed up longer trips
    - •Offer at least 6am to 6pm service on all routes
    - •At least one hour headways on all routes
  - ○Non-motorized facilities
    - •Construct sidewalks instead of fixed route deviations

Black Mountain Pedestrian Transportation Plan (2008). Seeks to address retrofitting pedestrian facilities where connectivity is lacking and provide sound policy and ordinance recommendations to ensure future pedestrian-friendly growth in the Town of Black Mountain.

- ♦Supports efforts that support TDM
  - ○Compact communities
    - •Community planning vision: more mixed-use neighborhoods, allowing for residents to walk or bike to nearby shopping, jobs, schools, and parks
  - ○Non-motorized facilities
    - •Create a cohesive network that provides accessibility for residents throughout Town and connects different land uses

Buncombe County Greenways & Trails Master Plan (2012). Identified corridors and implementation steps to realize an interconnected system of greenways and trails throughout cities, towns and unincorporated areas of Buncombe County. Acknowledged greenways as transportation and recreational corridors.

- ♦Supports efforts that support TDM
  - ○ Non-Motorized: Introduces idea of Park-n-Pedal lots for bikes and other greenway users, including commuters.
  - ○Compact communities: Connect Buncombe as major theme; priority corridors link most urbanized area.

- ○ Connectivity or design: Notes needs for connections to popular activity sites and workplaces. Complete Streets are element of plan recommendations.
- ○Multi-modal transfers: Connects planned greenways to nearby transit routes and along roads that might be suitable for future transit services.

Buncombe County Land Use Plan Update (2009). Update of the countywide land use plan to identify strategies for continued growth, with an examination of water, sewer and transportation facilities.

♦Directly supports TDM-type efforts
- ○ Specifically supports: Language related to compact land development, connectivity and park-and-ride facilities.
- ○ Rideshare: notes need for park-and-ride lots throughout the county.

♦Supports efforts that support TDM
- ○ Compact communities: Desires to concentrate high traffic-generating land uses along major corridors where availability of transportation can be easily managed.

Buncombe County Sustainability Plan (2012). Update of the countywide land use plan to identify strategies for continued growth, with an examination of water, sewer and transportation facilities.

♦Directly supports TDM-type efforts
- ○ Rideshare: Reduce vehicle miles traveled and increase multi-modal options.
- ○ Transit: Increase multi-modal options.
- ○ Non-motorized: Increase safety and mileage of facilities.
- ○ Other: Promote an array of transportation options noted in Equity in Access section. Identify and reduce barriers to employment, including transportation access.

♦Supports efforts that support TDM
- ○ Compact communities: Encourage land development connected to existing transportation corridors. Promote access to goods and service via neighborhood hubs.
- ○ Road connectivity/design: Increase miles of Complete Streets.
- ○ Transit facilities/operations: Increase total miles of alternative transportation options.
- ○ Non-motorized facilities: Improve safety for pedestrians and bicyclists; Increase miles of roads suitable for bicycling.

French Broad River Metropolitan Planning Organization (FBRMPO) Congestion Management Process (CMP) (2010). A federally-required eight-step method for identifying the causes and locations of congestion at the regional level and incorporating mitigation goals and strategies into local plans.

♦Directly supports TDM-type efforts
- ○Ridesharing
  - •Regional Vanpool Programs
- ○Flexible work
  - •Alternative work hours / Telecommuting
- ○Other
  - •Alternative Transportation Incentive Programs
  - •Park-and-Ride Lots

♦Supports efforts that support TDM
- ○Compact communities
  - •Mixed-use development
- ○Transit facilities or operations
  - •Regional Transit Routes
- ○Non-motorized facilities
  - •Pedestrian, Bicycle & Greenway System Connectivity

Comprehensive Transportation Plan (CTP) for French Broad River Metropolitan Planning Organization (FBRMPO) and Rural Areas of Buncombe and Haywood Counties (2008). Provides long-term recommendations for highways, public transportation and rail, and bicycles in the FBRMPO's planning areas and the rural areas of Buncombe and Haywood Counties.

- ♦Directly supports TDM-type efforts
  - ○Other
    - •Identified park-and-ride locations
- ♦Supports efforts that support TDM
  - ○Transit facilities or operations
    - •Identified locations for passenger rail and intermodal terminals
    - •Identified key express and local bus routes
  - ○Non-motorized facilities
    - •Bicycle facilities and amenities should be developed and implemented that give people a reasonable alternative to driving
    - •Critical that these bicycle improvements be planned together with roadway, transit, and pedestrian improvements on a systems level

French Broad River Metropolitan Planning Organization (FBRMPO) Coordinated Public Transportation and Human Services Transportation Plan (2008). Identifies the transportation needs of individuals with disabilities, older adults and people with low incomes, provides strategies for meeting those needs and prioritizes transportation services for funding and implementation. Project is under update in 2012.

- ♦Directly supports TDM-type efforts
  - ○Transit
    - •Information about available services and eligibility
    - •Travel training and coordination
- ♦Supports efforts that support TDM
  - ○Transit facilities or operations
    - •Extend service hours to include early mornings, nights, weekends and holidays
    - •Travel between counties
    - •Frequency of service
  - ○Non-motorized facilities
    - •Improve the infrastructure around and pathways to and from bus stops, including pedestrian street crossing facilities

French Broad River Metropolitan Planning Organization (FBRMPO) 2035 Long Range Transportation Plan (LRTP). A federally required long-term planning document that examines transportation system needs from 2010 to 2035 for all surface transportation modes in the FBRMPO's planning area.

- ♦Directly supports TDM-type efforts
  - ○Ridesharing
    - •Encourage ridesharing activities such as carpool, vanpools, and HOV lanes
  - ○Flexible work
    - •Manage peak-hour traffic through promotion of alternative work hours, tele-work, and other methods
- ♦Supports efforts that support TDM
  - ○Compact communities
    - •Promote mixed-use and compact development patterns
  - ○Road connectivity or design
    - •Improve connectivity from outlying areas to central cities and regional activity centers
    - •Develop complete streets policies for municipalities, counties, the MPO and NCDOT
    - •Ensure municipal policies and development standards require multi-modal improvements

along transportation facilities

- ○Transit facilities or operations
  - •Plan for and construct a regional public transportation system
  - •Improve the region's public transit system by connecting communities to key activity and employment centers
  - •Design and construct a new central transit center to serve regional needs
- ○Non-motorized facilities
  - •Include bike lanes and greenways in the regional planning process
  - •Improve pedestrian and bicycle safety around schools and other neighborhood centers
  - •Enhance the regional trails system for pedestrian and bicycle connectivity between communities
- ○Multi-modal transfers
  - •Plan for a system of multi-modal hubs throughout the region, including a system of park-and-ride lots
  - •Retrofit existing transportation facilities to include other modes

Haywood County Comprehensive Bicycle Plan (2011). Provides recommendations for improving bicycling infrastructure, policies and program throughout Haywood County, including its municipalities.

- ♦Directly supports TDM-type efforts
  - ○Non-motorized
    - •Identify and develop park-n-pedal lots
    - •Reach out to employers to promote policies and facilities for bicycle commuters
    - •Build on "Bike to Work" Month/Day to establish monthly Bike to Work rides
    - •Organize a "Share the Road" public service campaign to raise awareness of bicyclists

2030 Hendersonville Comprehensive Plan (2009). Articulates a vision of what Hendersonville wants to become over the next twenty years and describes how to achieve that vision.

- ♦Directly supports TDM-type efforts
  - ○Non-motorized
    - •Support community-based initiatives that build support for and awareness of the need for a walkable community
    - •Develop brochures that communicate the benefits of bicycling and include maps of local and regional bicycle routes
- ♦Supports efforts that support TDM
  - ○Compact communities
    - •Promote compatible infill development
    - •Encourage mixed land use patterns that place residents within walking distance of services
    - •Encourage mixed-use, pedestrian-friendly development that reduces the need to drive between land uses
    - •Encourage infill development that utilizes existing infrastructure in order to maximize public investment and revitalize existing neighborhoods
  - ○Road connectivity or design
    - •Incorporate Complete Streets concepts into future roadway improvements in order to create multi-modal streets
    - •Encourage pedestrian connections between dead end streets and adjacent neighborhoods
    - •Require stub streets and connections to existing stubs in new subdivisions
  - ○Transit facilities or operations
    - •Promote an integrated mass transit system that addresses local and regional needs
    - •Ensure that all bus stops are in locations that can be accessed safely and conveniently by

pedestrians

- ○Non-motorized facilities
  - •Implement the sidewalk recommendations of the City's 2007 Pedestrian Plan
  - •Develop a multi-modal transportation system that encourages pedestrian and bicycle usage in order to promote pedestrian safety, reduce vehicle miles travelled and encourage community interaction
  - •Develop a bicycle infrastructure that encourages bicycling as a form of transportation and recreation
  - •Preserve and expand the public greenway system as a core component of the bicycle and pedestrian transportation system
  - •Incorporate bicycle lanes into future roadway improvements where appropriate
  - •Encourage bicycle parking facilities at key destinations

Hendersonville Pedestrian Plan (2007). Identifies and develops safe amenities that encourage a pedestrian-friendly Hendersonville.

- ♦Directly supports TDM-type efforts
  - ○Transit and Non-motorized
    - •Motivate and reward the choice to walk and use transit
- ♦Supports efforts that support TDM
  - ○Non-motorized facilities
    - •Integrate and balance pedestrians with other modes of transportation

Land of Sky Regional Council Comprehensive Economic Development Strategy (2009). A strategic economic development plan for Buncombe, Henderson, Madison and Transylvania counties for 2007-2012.

- ♦Supports efforts that support TDM
  - ○Compact communities
    - •The goal for the Growth Management Initiative is increased regional coordination of growth management planning
  - ○Transit facilities or operations
    - •Provide 21st century, multi-modal transportation to the entire Five-County transportation planning region, featuring light rail infrastructure and increased public transit options linking nodes of high-density development
    - •Plan for and acquire corridors for light rail access to major cities and towns in the Region
    - •Support expansion of existing freight and passenger rail to serve major cities and towns in the Region
  - ○Non-motorized facilities
    - •Ninety percent of all communities in the Region will develop interconnected pedestrian and bicycle infrastructure by 2012
    - •Provide better planning and improved access to funding for pedestrian and bicycle projects
    - •Encourage development of pedestrian and bicycle plans and infrastructure in individual jurisdictions, and interconnect these through the Regional Greenways Plan

Statewide Logistics Plan for North Carolina (2008). Identifies priority commerce needs and recommends transportation infrastructure actions, including multimodal solutions, to support key industries vital to the State's long term economic growth.

- ♦Supports efforts that support TDM
  - ○Road connectivity or design
    - •Improve freight velocity, throughput, and reliability through connectivity

North Carolina Long-Range Statewide Multimodal Transportation Plan (2004). Recommends a 25-year investment strategy that embraces all modes of transportation and introduces a new planning framework that is inclusive, technically sound and reflects financial realities.

- ♦Supports efforts that support TDM
  - ○Transit facilities or operations
    - •Continuation of current funding levels for the rural transit program
  - ○Non-motorized facilities
    - •NCDOT now requires local governments for populations over 5,000 to prepare pedestrian and bicycle plans to receive state funding for bike/pedestrian improvements
    - •Establish mechanisms to incorporate input and analysis from modal staff earlier in the transportation planning process
    - •Build a broader planning capacity at the Division level; provide Division Engineers with the tools to think/act multimodally

North Carolina Department of Transportation (NCDOT) Complete Streets Planning and Design Guidelines (2012). Provides planning and design guidelines that will assist NCDOT and local communities in working together to consider and incorporate all modes of transportation when building new projects or making improvements to existing infrastructure.

- ♦Supports efforts that support TDM
  - ○Road connectivity or design
    - •NCDOT is committed to providing an efficient multi-modal transportation network in North Carolina such that the access, mobility and safety needs of motorists, transit users, bicyclists and pedestrians of all ages and abilities are safely accommodated
    - •NCDOT's planners and designers will consider and incorporate multimodal alternatives in the design and improvement of all appropriate transportation projects within a growth area of a town or city unless exceptional circumstances exist

Seven Portals Study: An Investigation of Economic Development through Logistics Villages (West Region Report, 2011). Identifies illustrative examples of logistics villages as an economic development strategy for the Western Region of North Carolina.

- ♦Directly supports TDM-type efforts
  - ○Other
    - •Includes a "virtual Telecommunications Village" that "relies on the 'information super highway' to transmit e-business data, services, product orders, etc."
    - •The North Carolina Transportation Alliance located in Asheville provides opportunities for transportation, logistics, and supply chain professionals in the manufacturing and distribution sectors to meet and discuss common needs. Such informal discussions have led to more efficient shipments where, for example, one company will pay for products shipped from Western North Carolina to Florida and a second company will use the shipper to bring materials from Florida to Western North Carolina. Empty backhaul trips are thereby avoided.
    - •Promote the concept of the Western North Carolina Transportation Alliance
- ♦Supports efforts that support TDM
- ○Transit facilities or operations
  - •Provide Amtrak service to alleviate congestion on the interstate road system and bring new business and tourism

Transportation Options for WNC (2001). Identifies and analyzes opportunities for connecting different modes of transportation, extending and expanding public transit, and improving alternative forms of transportation.

- ♦Directly supports TDM-type efforts
  - ○Ridesharing
    - •Work with schools and businesses to promote carpooling
  - ○Transit

- •Work with schools and businesses to promote mass transit
- •Non-motorized
- •Work with schools and businesses to promote walking and bicycling

♦Supports efforts that support TDM

○Compact communities

- •Advocate for policies and funding that supports and encourages multi-modal transportation networks and regional planning that integrates transportation and land use planning

○Transit facilities or operations

- •Implement intercity public transportation service between Asheville and the outlying communities and increase and extend public transportation systems throughout the region

○Non-motorized facilities

- •Create a safer environment for pedestrians and bicyclists throughout the region

Transylvania County Comprehensive Transportation Plan (CTP) (2012). Provides long-term recommendations for highways, public transportation and rail, bicycles and pedestrians in Transylvania County.

♦Directly supports TDM-type efforts

○Transit

- •Give the public other options of traveling from one place to another [with public transportation and rail]

♦Supports efforts that support TDM

○Transit facilities or operations

- •Identified needed fixed routes

○Non-motorized facilities

- •Identified needed bicycle and pedestrian improvements

Waynesville 2020 Land Development Plan (1999). Examines trends in land development in the Waynesville planning area and recommends strategies to guide Waynesville in its future growth and development in a manner the community has chosen to follow over the next two decades.

♦Supports efforts that support TDM

○Compact communities

- •Limit "urban sprawl" through the establishment of a planned growth area for the Town of Waynesville
- •Adopt land development regulations providing for the construction of compact, mixed-use developments within a single development

○Road connectivity or design

- •Evaluate all new developments for street connectivity and require connections in the land development regulations and through plan review

○Transit facilities or operations

- •Work with the surrounding communities to provide rail service to the Waynesville community
- •Partner with Haywood Transit to explore the implementation of a fixed public transit system in the Waynesville area
- •Investigate the use of a "trolley" to link downtown with the Frog Level, Hazelwood and Maggie Valley areas
- •Work to promote the provision of rail service to the Waynesville community

○Non-motorized facilities

- •Require developers to provide pedestrian access in conjunction with new developments
- •Include bicycle and pedestrian paths in the design of all major road improvements unless deemed not feasible

- Establish bicycle routes throughout the community with special attention given to destination points such as schools, churches, recreation sites and governmental facilities, etc
- Provide better marking, lighting and identification of crosswalks throughout the community

Waynesville Comprehensive Pedestrian Plan (2010). Provides recommendations for programs, policies and facilities to improve the pedestrian environment in the Town of Waynesville.

♦ Supports efforts that support TDM

○ Road connectivity or design

- Adopt policies that promote connectivity, coordination and continuity of pedestrian facilities throughout the town of Waynesville

○ Non-motorized facilities

- Provide pedestrians convenient, safe and enjoyable access and mobility throughout the developed portions of the town
- Create a pedestrian friendly environment that encourages people to think about "walking first"
- Identify a network of sidewalks and shared use paths that serve all user groups, including commuting, recreation, and utilitarian trips

Ride Sharing Study: "Commute Connections" (1999). The initial design for a ride sharing program for the Asheville, North Carolina region. (working to obtain a copy of this study)

Appendix C: Detailed NTD Tables

***Exhibit 1-4*: Annual Passenger Miles—Rank of Transit Services, 50,000 to 100,000 Population (2010) - Top 50%**

Rank	Transit Service	City	State	Svc AreaPop.	PassMiles
1	Kings County Area Public Transit Agency	Hanford	CA	51,965	23,722,542
2	Centre Area Transportation Authority	State College	PA	83,444	19,421,696
3	Chapel Hill Transit	Chapel Hill	NC	76,759	15,523,054
4	University of Michigan Parking and Transportation Services	Ann Arbor	MI	64,000	13,815,344
5	Greater Attleboro-Taunton Regional Transit Authority	Taunton	MA	98,175	12,736,864
6	Greater Roanoke Transit Company	Roanoke	VA	94,911	11,698,527
7	Mid Mon Valley Transit Authority	Charleroi	PA	56,508	11,247,126
8	Chittenden County Transportation Authority	Burlington	VT	86,468	9,728,928
9	Yakima Transit	Yakima	WA	92,035	9,216,410
10	St. Cloud Metropolitan Transit Commission	St. Cloud	MN	98,828	8,924,187
11	Ames Transit Agency	Ames	IA	50,276	8,380,233
12	Unitrans - City of Davis/ASUCD	Davis	CA	66,698	7,538,677
13	Bloomington Public Transportation Corporation	Bloomington	IN	69,291	7,312,029
14	**Asheville Transit System**	**Asheville**	**NC**	**72,789**	**7,281,383**
15	Cache Valley Transit District	Logan	UT	80,000	6,843,192
16	City of Lompoc - Lompoc Transit	Lompoc	CA	55,666	6,619,683
17	Blacksburg Transit	Blacksburg	VA	56,260	6,586,770
18	Williamsport Bureau of Transportation	Williamsport	PA	69,764	6,269,430
19	Muncie Indiana Transit System	Muncie	IN	67,430	6,186,449
20	Greater Portland Transit District	Portland	ME	94,873	5,948,026
21	Williamsburg Area Transit Authority	Williamsburg	VA	57,000	5,760,741
22	Western Contra Costa Transit Authority	Pinole	CA	62,000	5,705,554
23	Cedar Rapids Transit	Cedar Rapids	IA	97,716	5,688,125
24	City of Lawrence	Lawrence	KS	90,000	5,528,423
25	River Valley Metro Mass Transit District	Bourbonnais	IL	63,686	5,485,399
26	Cambria County Transit Authority	Johnstown	PA	80,508	5,203,551
27	Annapolis Department of Transportation	Annapolis	MD	90,000	5,179,468
28	Kenosha Transit	Kenosha	WI	91,500	5,059,226
29	Lake County Board of County Commissioners	Tavares	FL	97,497	5,027,060
30	Charlottesville Area Transit	Charlottesville	VA	81,449	5,005,637
31	Davenport Public Transit	Davenport	IA	98,900	4,849,819
32	University of Iowa	Iowa City	IA	71,372	4,794,274
33	Columbia Transit	Columbia	MO	57,000	4,752,640
34	Greater Lynchburg Transit Company	Lynchburg	VA	80,846	4,307,300
35	Albany Transit System	Albany	GA	75,616	4,195,166
36	LaCrosse Municipal Transit Utility	LaCrosse	WI	78,000	4,057,362
37	Iowa City Transit	Iowa City	IA	67,026	3,884,748
38	City of Alameda Ferry Services	Alameda	CA	72,500	3,878,230
39	Centro of Cayuga, Inc.	Syracuse	NY	57,608	3,851,032
40	Decatur Public Transit System	Decatur	IL	86,080	3,791,163
41	City of Monroe Transit System	Monroe	LA	55,000	3,769,451
42	Transit Services of Frederick County	Frederick	MD	60,154	3,747,247
43	Bay County Transportation Planning Organization	Pensacola	FL	85,458	3,579,588
44	City of Bangor - BAT Community Connector	Bangor	ME	55,500	3,454,597
45	City of Corvallis	Corvallis	OR	55,125	3,388,516
46	City of Alexandria	Alexandria	LA	60,171	3,328,453
47	Cape Fear Public Transportation Authority	Wilmington	NC	55,530	3,315,347
48	Eau Claire Transit	Eau Claire	WI	73,000	3,251,043
49	Cooperative Alliance for Seacoast Transportation	Dover	NH	94,734	3,239,670
50	Oshkosh Transit System	Oshkosh	WI	65,810	3,109,177
51	Fairbanks North Star Borough Transit	Fairbanks	AK	96,888	3,037,047
52	Santa Fe Trails - City of Santa Fe	Santa Fe	NM	76,100	3,006,559
53	Cleveland Area Rapid Transit	Norman	OK	96,782	2,985,636
54	Chemung County Transit System	Elmira	NY	95,195	2,979,648
55	City of San Luis Obispo	San Luis Obispo	CA	50,305	2,957,571
56	University Of New Hampshire - Univ. Transportation Services	Durham	NH	75,164	2,912,713
57	Beaumont Municipal Transit System	Beaumont	TX	82,731	2,834,624
58	Ozaukee County Transit Services	Port Washington	WI	86,389	2,834,191
59	City of Pocatello - Pocatello Regional Transit	Pocatello	ID	61,166	2,820,341
60	Missoula Urban Transportation District	Missoula	MT	69,999	2,809,343

***Exhibit 1-4*: Annual Passenger Miles—Rank of Transit Services, 50,000 to 100,000 Population (2010) - Bottom 50%**

Rank	Transit Service	City	State	Svc Area Pop.	PassMiles
61	Billings Metropolitan Transit	Billings	MT	100,000	2,655,199
62	Jackson Transit Authority	Jackson	TN	61,772	2,587,533
63	University of Arkansas, Fayetteville	Fayetteville	AR	58,047	2,573,517
64	Centro of Oswego, Inc.	Syracuse	NY	89,591	2,467,658
65	Altoona Metro Transit	Altoona	PA	69,608	2,416,407
66	Nashua Transit System	Nashua	NH	80,000	2,395,358
67	Spartanburg Transit System	Spartanburg	SC	70,000	2,387,044
68	City of Porterville	Porterville	CA	59,961	2,252,530
69	Las Cruces Area Transit	Las Cruces	NM	90,590	2,244,851
70	Battle Creek Transit	Battle Creek	MI	83,000	2,011,908
71	City of Greeley - Transit Services	Greeley	CO	93,000	1,917,520
72	Putnam County Transit	Carmel	NY	70,291	1,914,373
73	Golden Crescent Regional Planning Commission	Victoria	TX	60,603	1,855,849
74	The Lawton Area Transit System	Lawton	OK	70,177	1,816,937
75	St. Joseph Transit	St. Joseph	MO	73,990	1,766,514
76	Middletown Transit District	Middletown	CT	90,320	1,756,269
77	Milford Transit District	Milford	CT	51,000	1,685,078
78	Janesville Transit System	Janesville	WI	63,600	1,678,852
79	Concho Valley Transit District	San Angelo	TX	88,128	1,606,804
80	City of Redondo Beach - Beach Cities Transit	Redondo Beach	CA	63,261	1,602,141
81	Allegany County Transit	Cumberland	MD	68,780	1,575,948
82	Macatawa Area Express Transportation Authority	Holland	MI	69,764	1,544,636
83	City of Union City Transit Division	Union City	CA	73,900	1,506,297
84	Cities Area Transit	Grand Forks	ND	56,534	1,419,233
85	Wiregrass Transit Authority	Dothan	AL	90,000	1,404,250
86	Sheboygan Transit System	Sheboygan	WI	59,490	1,354,304
87	Targhee Regional Public Transit Authority	Idaho Falls	ID	70,932	1,346,719
88	The City of Cheyenne Transit Program	Cheyenne	WY	53,000	1,321,262
89	Rapid Transit System	Rapid City	SD	67,500	1,287,447
90	City of DeKalb	DeKalb	IL	55,805	1,227,401
91	City of Scottsdale - Scottsdale Trolley	Scottsdale	AZ	80,000	1,203,072
92	NWI Regional Bus Authority	Portage	IN	83,048	1,197,033
93	Bis-Man Transit Board	Bismarck	ND	94,719	1,191,665
94	City of Dubuque	Dubuque	IA	58,000	1,190,736
95	Tioga County	Owego	NY	52,337	1,177,859
96	Greater Glens Falls Transit System	Queensbury	NY	59,743	1,170,047
97	City of Kokomo	Kokomo	IN	69,682	1,159,206
98	Fort Smith Transit	Fort Smith	AR	80,268	1,158,938
99	Ohio Valley Regional Transportation Authority	Wheeling	WV	61,725	1,133,696
100	Port Arthur Transit	Port Arthur	TX	57,755	1,103,676
101	Monongalia County Urban Mass Transit Authority	Morgantown	WV	73,278	1,045,313
102	Midland-Odessa Urban Transit District	Odessa	TX	96,000	983,484
103	Richland County Transit	Mansfield	OH	68,011	829,511
104	Great Falls Transit District	Great Falls	MT	63,000	810,874
105	City of Anderson Transportation System	Anderson	IN	59,734	762,848
106	City of Casper	Casper	WY	57,561	720,480
107	City of Loveland Transit	Loveland	CO	60,000	717,373
108	The University of Montana - ASUM Transportation	Missoula	MT	80,000	695,675
109	City of Lodi - Transit Division	Lodi	CA	64,000	657,561
110	City of Petaluma	Petaluma	CA	54,600	647,238
111	Springfield City Area Transit	Springfield	OH	62,500	563,278
112	Terre Haute Transit Utility	Terre Haute	IN	59,614	495,442
113	Miami County Public Transit	Troy	OH	99,219	488,432
114	City of Arcadia Transit	Arcadia	CA	56,153	429,264
115	City of Turlock	Turlock	CA	67,867	426,485
116	City of Washington	Washington	PA	61,634	424,446
117	City of Newark Transit Operations	Newark	OH	54,806	225,993
118	City of Bowling Green/Community Action of Southern Kentucky	Bowling Green	KY	50,000	182,502
119	City of Bend, Bend Area Transit	Bend	OR	80,995	175,461
120	City of La Mirada Transit	La Mirada	CA	51,754	133,755

Source: National Transit Database, Federal Transit Administration (2010)

***Exhibit 1-5*: Annual Passenger Trips—Rank of Transit Services, 50,000 to 100,000 Population (2010) - Top 50%**

Rank	Transit Service	City	State	Svc Area Pop.	Pass. Trips
1	Chapel Hill Transit	Chapel Hill	NC	76,759	7,552,486
2	Centre Area Transportation Authority	State College	PA	83,444	7,294,893
3	University of Michigan Parking and Transportation Services	Ann Arbor	MI	64,000	6,366,518
4	Ames Transit Agency	Ames	IA	50,276	5,377,155
5	University of Iowa	Iowa City	IA	71,372	3,964,630
6	Unitrans - City of Davis/ASUCD	Davis	CA	66,698	3,507,357
7	Blacksburg Transit	Blacksburg	VA	56,260	3,383,077
8	Bloomington Public Transportation Corporation	Bloomington	IN	69,291	3,265,274
9	Greater Lynchburg Transit Company	Lynchburg	VA	80,846	3,010,123
10	City of Lawrence	Lawrence	KS	90,000	2,912,495
11	Williamsburg Area Transit Authority	Williamsburg	VA	57,000	2,799,800
12	Chittenden County Transportation Authority	Burlington	VT	86,468	2,498,883
13	Greater Roanoke Transit Company	Roanoke	VA	94,911	2,491,742
14	St. Cloud Metropolitan Transit Commission	St. Cloud	MN	98,828	2,414,575
15	Columbia Transit	Columbia	MO	57,000	2,204,403
16	Charlottesville Area Transit	Charlottesville	VA	81,449	2,195,455
17	Muncie Indiana Transit System	Muncie	IN	67,430	1,991,693
18	Cache Valley Transit District	Logan	UT	80,000	1,925,316
19	Iowa City Transit	Iowa City	IA	67,026	1,889,152
20	Kenosha Transit	Kenosha	WI	91,500	1,665,508
21	University of Arkansas, Fayetteville	Fayetteville	AR	58,047	1,575,149
22	**Asheville Transit System**	**Asheville**	**NC**	**72,789**	**1,563,567**
23	Yakima Transit	Yakima	WA	92,035	1,501,368
24	Annapolis Department of Transportation	Annapolis	MD	90,000	1,479,848
25	Greater Portland Transit District	Portland	ME	94,873	1,440,200
26	Cape Fear Public Transportation Authority	Wilmington	NC	55,530	1,422,422
27	LaCrosse Municipal Transit Utility	LaCrosse	WI	78,000	1,312,074
28	Cleveland Area Rapid Transit	Norman	OK	96,782	1,306,343
29	Williamsport Bureau of Transportation	Williamsport	PA	69,764	1,297,001
30	Cambria County Transit Authority	Johnstown	PA	80,508	1,282,505
31	Decatur Public Transit System	Decatur	IL	86,080	1,278,364
32	Western Contra Costa Transit Authority	Pinole	CA	62,000	1,231,100
33	Davenport Public Transit	Davenport	IA	98,900	1,209,226
34	Cedar Rapids Transit	Cedar Rapids	IA	97,716	1,173,098
35	City of Monroe Transit System	Monroe	LA	55,000	1,170,751
36	Kings County Area Public Transit Agency	Hanford	CA	51,965	1,149,037
37	University Of New Hampshire - Univ. Transportation Services	Durham	NH	75,164	1,101,492
38	City of San Luis Obispo	San Luis Obispo	CA	50,305	1,019,852
39	Oshkosh Transit System	Oshkosh	WI	65,810	1,017,341
40	Eau Claire Transit	Eau Claire	WI	73,000	996,846
41	Greater Attleboro-Taunton Regional Transit Authority	Taunton	MA	98,175	974,525
42	Monongalia County Urban Mass Transit Authority	Morgantown	WV	73,278	917,305
43	City of Bangor - BAT Community Connector	Bangor	ME	55,500	900,740
44	Santa Fe Trails - City of Santa Fe	Santa Fe	NM	76,100	880,335
45	Albany Transit System	Albany	GA	75,616	874,092
46	Missoula Urban Transportation District	Missoula	MT	69,999	812,955
47	Transit Services of Frederick County	Frederick	MD	60,154	786,711
48	City of Alexandria	Alexandria	LA	60,171	783,218
49	River Valley Metro Mass Transit District	Bourbonnais	IL	63,686	738,202
50	Bay County Transportation Planning Organization	Pensacola	FL	85,458	724,613
51	City of Corvallis	Corvallis	OR	55,125	700,820
52	Altoona Metro Transit	Altoona	PA	69,608	699,407
53	Billings Metropolitan Transit	Billings	MT	100,000	689,612
54	Chemung County Transit System	Elmira	NY	95,195	686,555
55	Las Cruces Area Transit	Las Cruces	NM	90,590	655,919
56	City of Scottsdale - Scottsdale Trolley	Scottsdale	AZ	80,000	651,532
57	Beaumont Municipal Transit System	Beaumont	TX	82,731	604,434
58	Jackson Transit Authority	Jackson	TN	61,772	595,151
59	City of Alameda Ferry Services	Alameda	CA	72,500	568,520
60	City of Pocatello - Pocatello Regional Transit	Pocatello	ID	61,166	555,550

Source: National Transit Database, Federal Transit Administration (2010)

***Exhibit 1-5*: Annual Passenger Trips—Rank of Transit Services, 50,000 to 100,000 Population (2010) - Bottom 50%**

Rank	Transit Service	City	State	Svc Area Pop.	Pass. Trips
61	Battle Creek Transit	Battle Creek	MI	83,000	540,209
62	Spartanburg Transit System	Spartanburg	SC	70,000	519,084
63	City of Greeley - Transit Services	Greeley	CO	93,000	517,980
64	City of Porterville	Porterville	CA	59,961	513,722
65	Sheboygan Transit System	Sheboygan	WI	59,490	505,098
66	Midland-Odessa Urban Transit District	Odessa	TX	96,000	488,370
67	Centro of Cayuga, Inc.	Syracuse	NY	57,608	474,265
68	Nashua Transit System	Nashua	NH	80,000	471,229
69	City of Union City Transit Division	Union City	CA	73,900	464,737
70	Lake County Board of County Commissioners	Tavares	FL	97,497	450,376
71	Janesville Transit System	Janesville	WI	63,600	430,103
72	Mid Mon Valley Transit Authority	Charleroi	PA	56,508	428,151
73	Milford Transit District	Milford	CT	51,000	419,210
74	Cooperative Alliance for Seacoast Transportation	Dover	NH	94,734	415,957
75	Centro of Oswego, Inc.	Syracuse	NY	89,591	413,343
76	Golden Crescent Regional Planning Commission	Victoria	TX	60,603	409,461
77	Ohio Valley Regional Transportation Authority	Wheeling	WV	61,725	406,752
78	City of Redondo Beach - Beach Cities Transit	Redondo Beach	CA	63,261	404,982
79	Fairbanks North Star Borough Transit	Fairbanks	AK	96,888	404,759
80	The Lawton Area Transit System	Lawton	OK	70,177	404,389
81	City of Lompoc - Lompoc Transit	Lompoc	CA	55,666	400,894
82	Middletown Transit District	Middletown	CT	90,320	397,915
83	The University of Montana - ASUM Transportation	Missoula	MT	80,000	387,995
84	Great Falls Transit District	Great Falls	MT	63,000	380,883
85	City of Bend, Bend Area Transit	Bend	OR	80,995	377,428
86	City of Dubuque	Dubuque	IA	58,000	373,690
87	St. Joseph Transit	St. Joseph	MO	73,990	353,225
88	Cities Area Transit	Grand Forks	ND	56,534	347,867
89	Concho Valley Transit District	San Angelo	TX	88,128	347,336
90	Rapid Transit System	Rapid City	SD	67,500	339,784
91	Macatawa Area Express Transportation Authority	Holland	MI	69,764	336,486
92	Greater Glens Falls Transit System	Queensbury	NY	59,743	325,117
93	Bis-Man Transit Board	Bismarck	ND	94,719	299,442
94	Terre Haute Transit Utility	Terre Haute	IN	59,614	291,853
95	Springfield City Area Transit	Springfield	OH	62,500	290,392
96	The City of Cheyenne Transit Program	Cheyenne	WY	53,000	277,899
97	Richland County Transit	Mansfield	OH	68,011	265,822
98	Fort Smith Transit	Fort Smith	AR	80,268	242,748
99	City of Lodi - Transit Division	Lodi	CA	64,000	227,900
100	City of Kokomo	Kokomo	IN	69,682	224,114
101	NWI Regional Bus Authority	Portage	IN	83,048	215,957
102	Wiregrass Transit Authority	Dothan	AL	90,000	192,130
103	Ozaukee County Transit Services	Port Washington	WI	86,389	188,181
104	Putnam County Transit	Carmel	NY	70,291	186,823
105	City of Petaluma	Petaluma	CA	54,600	181,866
106	City of Casper	Casper	WY	57,561	179,673
107	City of Anderson Transportation System	Anderson	IN	59,734	175,755
108	Allegany County Transit	Cumberland	MD	68,780	172,798
109	Targhee Regional Public Transit Authority	Idaho Falls	ID	70,932	168,245
110	City of Loveland Transit	Loveland	CO	60,000	146,467
111	Port Arthur Transit	Port Arthur	TX	57,755	136,078
112	City of DeKalb	DeKalb	IL	55,805	134,128
113	City of Arcadia Transit	Arcadia	CA	56,153	117,288
114	City of Turlock	Turlock	CA	67,867	109,905
115	The City of Bowling Green/Community Action of Southern Kentucky	Bowling Green	KY	50,000	90,330
116	Tioga County	Owego	NY	52,337	69,952
117	Miami County Public Transit	Troy	OH	99,219	59,302
118	City of Newark Transit Operations	Newark	OH	54,806	49,280
119	City of La Mirada Transit	La Mirada	CA	51,754	46,340
120	City of Washington	Washington	PA	61,634	45,131

Source: National Transit Database, Federal Transit Administration (2010)

Long-Range Transportation Demand Management Plan: Western North Carolina 2012 Resident Travel Survey

SURVEY REPORT

Prepared for:

Land of Sky Regional Council
and
French Broad River Metropolitan Planning Organization

Prepared by:

LDA Consulting
Washington, DC

In association with:

Kostelec Planning, Asheville, NC
and
CIC Research, Inc., San Diego, CA

October 8, 2012

TABLE OF CONTENTS

SECTION 1 – INTRODUCTION AND SURVEY METHODOLOGY

Overview

This report presents the results of a survey of adult residents of the western North Carolina region that includes the City of Asheville and Buncombe, Haywood, and Henderson counties. The survey was conducted for the Land of Sky Regional Council and the French Broad River Metropolitan Planning Organization in support of an effort to develop a strategic plan for Transportation Demand Management (TDM) activities in the Western North Carolina planning region.

The resident travel survey collected information to define commuting behavior characteristics, such as commute mode shares and distance traveled, examine factors that are important to residents in their choice of travel mode, and assess residents' awareness and use of regional travel assistance services.

Methodology

Questionnaire Design

The survey questionnaire was developed to collect data on travel patterns, opinions on travel options in the region, and awareness and use of travel assistance services provided by employers and regional organizations. The questionnaire also included questions on home and work locations and demographic characteristics, to facilitate sub-group comparisons. The survey was programmed for on-line self-administration. The consultants conducted extensive testing of the on-line program

Sample and Survey Administration

The geographic scope of the study encompasses the three counties noted above: Buncombe, Haywood, and Henderson. All residents who were 18 years or older and who live or work in one of these jurisdictions were eligible for the study. The consultants distributed the survey website link through a range of organizations that had contacts with residents and employees who work in the region. The distribution list included residential associations, business associations, chambers of commerce, and local community and interest groups. Each of these organizational recipients was asked to forward the survey link to residents or employees with whom they had direct contact and to publicize the survey to their constituencies. The consultants also used social media channels, such as Facebook and twitter, to alert potential respondents to the survey.

A total of 411 respondents completed all questions. It is important to note that these respondents do not represent a random sample of the region's population, thus the survey results might not reflect the actual results if a random sample of residents had been surveyed. The survey sought to involve a broad sample of travelers and the distributions of respondents are reasonably close to those of the regional population in many demographic characteristics. But the survey distribution method relied on intermediaries to assist with data collection.

As noted in later sections of the report, the survey sample was different from the regional population in several characteristics, thus some population segments might have been under- or over-represented. In particular, the survey sample includes a large share of respondents who cited a bicycle-interest organization as the source of their awareness of the survey. And the survey includes disproportionate shares of respondents who live in the City of Asheville and respondents who are employed . These sample characteristics could affect the regional representativeness of the results.

SECTION 2 SURVEY RESULTS

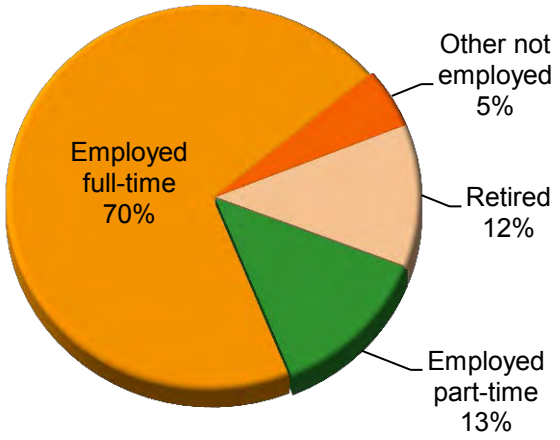
Characteristics and Demographics of the Sample

At the end of the survey interview, respondents were asked a series of questions about themselves, including: employment status, home and work location, age, race/ethnicity, sex, household income, household size, and vehicle ownership. These results are presented first, to define characteristics of the sample.

Employment Status

All adults in the region were eligible for the survey, but many questions inquired about commuting patterns. So an early screening question defined respondents' employment status. Eighty-three percent of respondents are employed, either full-time (70%) or part-time (13%). (Figure 1) The remaining 17% are not employed. Non-employed respondents were not included in questions about commute patterns or work services, but were included in questions that were not commute-specific. Note that survey respondents are disproportionately employed, when compared with the regional population. The American Community Survey estimated that approximately 58% of adults in the three-county region are employed.

Figure 1
Employment Status
(n = 411)



Home and Work Location

As shown in Table 1, eight in ten (79%) respondents live in Buncombe County. The remaining respondents are about evenly split between Haywood (10%) and Henderson (8%) counties. The Buncombe County total is comprised of 54% from the City of Asheville and 25% from other parts of Buncombe County. The overall distribution of surveyed respondents over-represents Buncombe County residents; in 2012, Buncombe County accounted for about 59% of the total adult population of the three-county region. These percentages, which were obtained from the North Carolina Office of State Budget and Management (NCSBM), are displayed in the second column of the table.

Table 1
Home and Work Jurisdictions

Jurisdiction	Home Jurisdiction Percentages		Work Jurisdiction Percentages
	2012 Actual – All Residents	Survey All Residents	
Sample size (n=)		n = 411	n = 322
Buncombe County	59%	79%	80%
Haywood County	15%	10%	6%
Henderson County	26%	8%	7%
Other	---	3%	7%
Buncombe County Distribution			
City of Asheville	N/A	54%	60%
Buncombe County (outside Asheville)	N/A	25%	20%

* Source – NC Office of State Budget and Management (http://demog.state.nc.us/)

The work jurisdiction distribution of surveyed respondents is similar to that for the resident population overall. Eight in ten respondents work in Buncombe County, six percent work in Haywood County, and seven percent work in Henderson County. The remaining seven percent named a location outside these three jurisdictions.

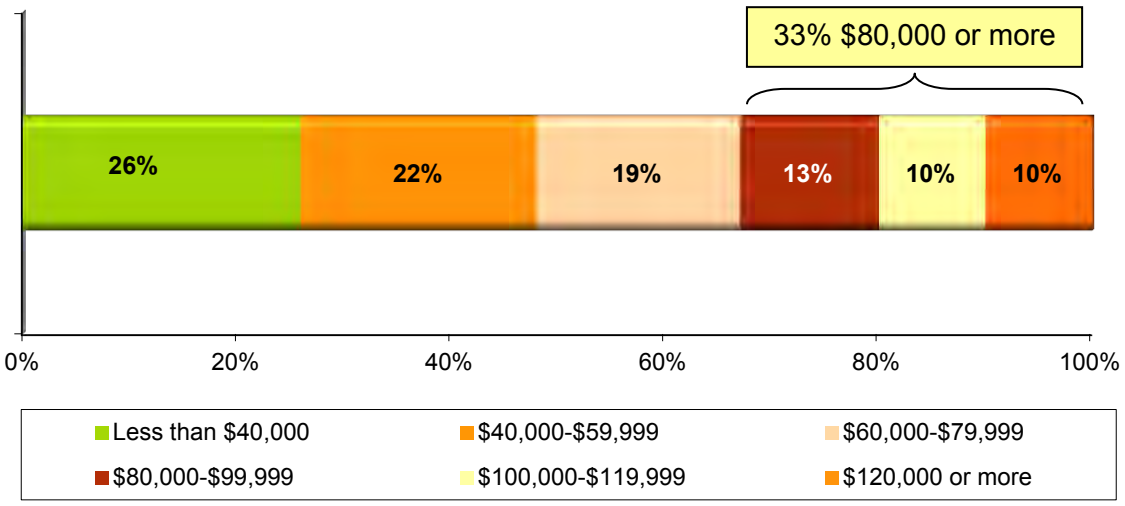
Demographics

The survey asked respondents four demographic questions: gender, race/ethnicity, income, and age. The survey respondents included a substantially higher proportion of female respondents (61%) than male (39%). By comparison, the actual 2012 distribution in the region is approximately 53% female and 47% male. (Source: NC Office of State Budget and Management (http://demog.state.nc.us/).

Survey respondents also are overwhelmingly of non-Hispanic White racial/ethnic background; 96% of respondents reported this background. This percentage is slightly higher than the actual 92% Non-Hispanic White population. (Source: NC Office of State Budget and Management (http://demog.state.nc.us/).

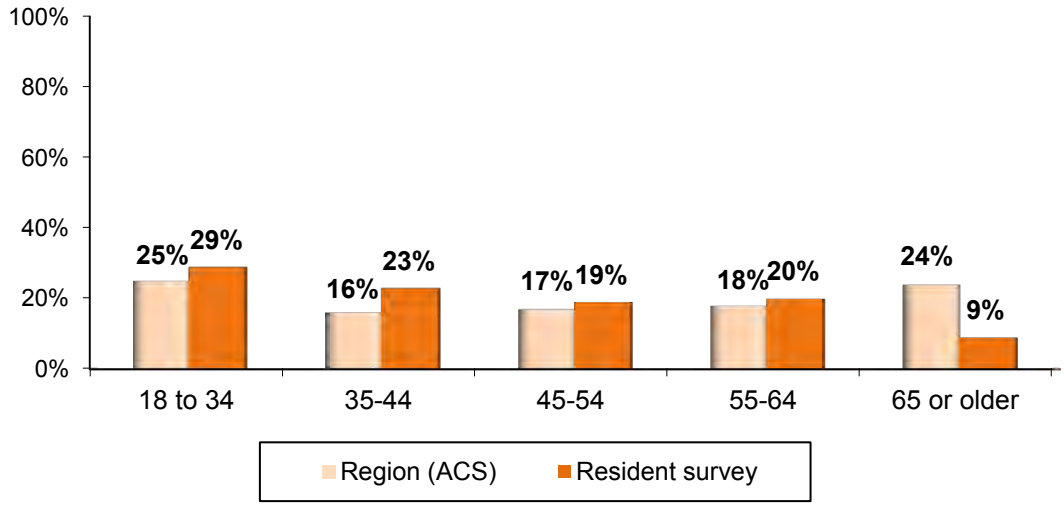
Income – Figure 2 presents the distribution of respondents' annual household pre-tax income. More than half (52%) reported household incomes of $60,000 or more and a third (33%) have incomes of $80,000 or more. Note that the sampled respondents' incomes are higher than the average for the region. The American Community Survey (2006-2010) reported a median income for the three counties of approximately $45,000, compared with about $62,000 for the survey respondents. But the ACS survey population is not an exact match, because it would have included a much higher share of households with no employed persons, while only 17% of the survey respondents are not employed. Thus, the higher income likely is due to the employment status, rather than general economic status. But the overall results do reflect responses from a higher income population than exists overall in the region.

Figure 2
Annual Household Income
(n = 351)



Age – About half (52%) of the resident survey respondents are between the ages of 18 and 44. (Figure 3) Two in five are between 45 and 54 and 20% are between 56 and 64 years old. Nine percent are 65 years or older. The surveyed population is younger than the regional population overall. Figure 3 also shows the 2006-2010 census distribution of all adult residents in the region. Only about 41% of all regional adults were between 18 and 44 and 24% were 65 or older. (Source: NC Office of State Budget and Management (http://demog.state.nc.us/).

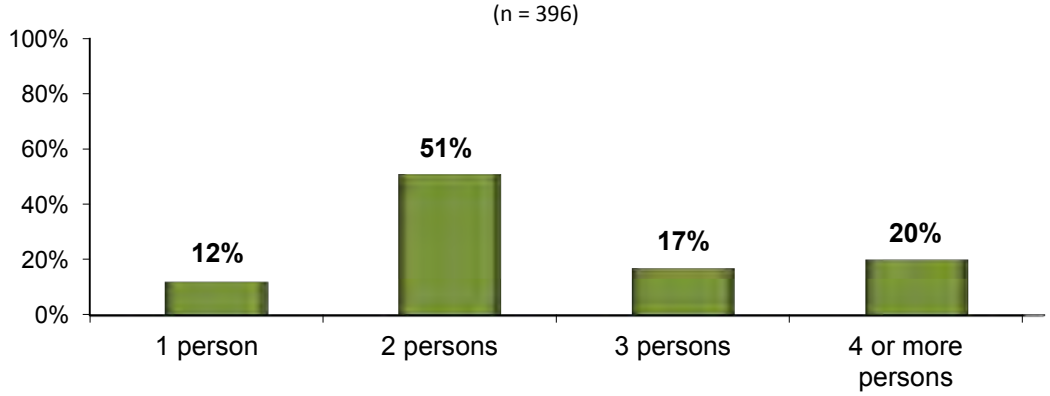
Figure 3
Respondent Age Distribution
(n = 400)



Household Size and Composition

Twelve percent of respondents said they are the only member of their household and about half (51%) of respondents live with one other person (Figure 4). The remaining respondents live with at least two other household members.

Figure 4
Household Size
(n = 396)

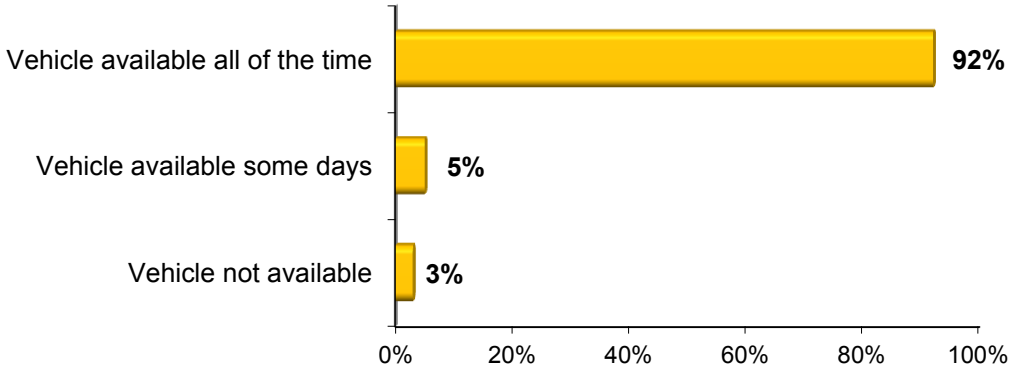


The majority of surveyed households are comprised solely of adults and/or children older than 16 years of age. Only 25% of respondents said their household includes one or more children under the age of 16; 12% have one child under 16 and 13% have two or more young children in the household.

Household Vehicle Ownership

Respondents were asked if they had a car, SUV, truck, or other personal vehicle available on a regular basis for their travel.(Figure 5) More than nine in ten (92%) said they do have a vehicle available all the time. Five percent said they have a vehicle available "some days." Presumably, they share this vehicle with another household member.

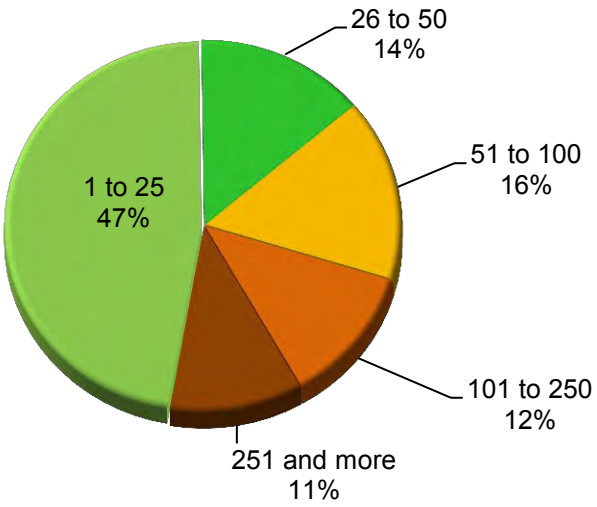
Figure 5
Vehicle Regularly Available for Travel
(n = 403)



Type and Size of Employer

Employer Size – The majority of respondents work for small employers (Figure 6). Nearly half (47%) work for firms with fewer than 26 employees and 775 work for employers with 100 or fewer employees. About one in ten works for employers that employ 251 or more employees.

Figure 6
Employer Type
(n = 294)



Employer Type – Four in ten (41%) respondents work for a private sector employer. Non-profit organizations employ 29% and 28% work for state or local government agencies. Three percent are either self-employed or employed by another type of organization.

Table 2
Employer Types
(n = 294)

Employer type	Percentage
Private sector company	40%
Non-profit organization	29%
State or local government	28%
Self-employed / other	3%

Current Commute Patterns

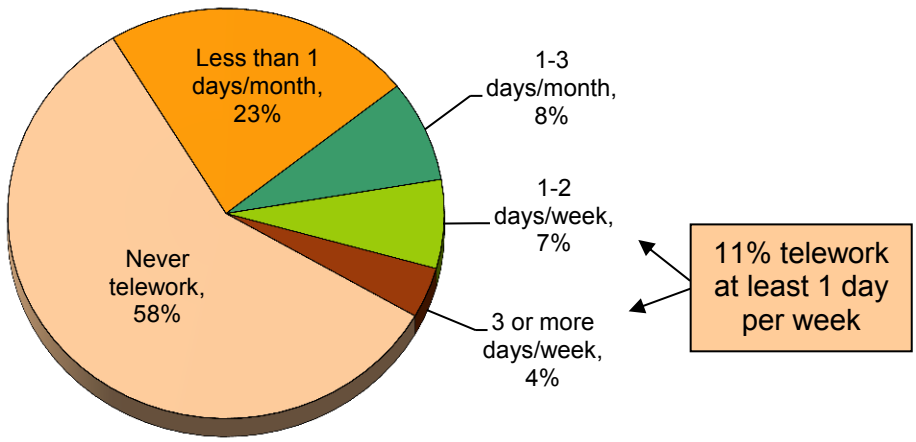
An important section of the survey examined characteristics of respondents' commuting behavior. As noted earlier 83% of respondents are employed, either part-time or full-time. Three percent of these respondents said they are self-employed, with their primary work location in their homes. These respondents were not asked any further questions about their work travel. But respondents who are employed and who travel outside their home one or more days per week for work were asked questions on the number of days they work, current modes used, and commute distance and time.

Work Schedule and Telework

The overwhelming majority (81%) of respondents commute to a work location outside their homes five or more days per week. The remaining respondents commute fewer than five days. This included respondents who work part-time, five percent who work a compressed schedule in which they work a full-time schedule in fewer than five days, and respondents who telework (work at home) some days.

More than four in ten (42%) employed respondents said they telework (Figure 7). For most of these respondents, telework is an occasional activity; 23% of employed residents telework less than one day per month and eight percent telework one to three days per month. One in ten (11%) regional workers teleworks one or more days per week.

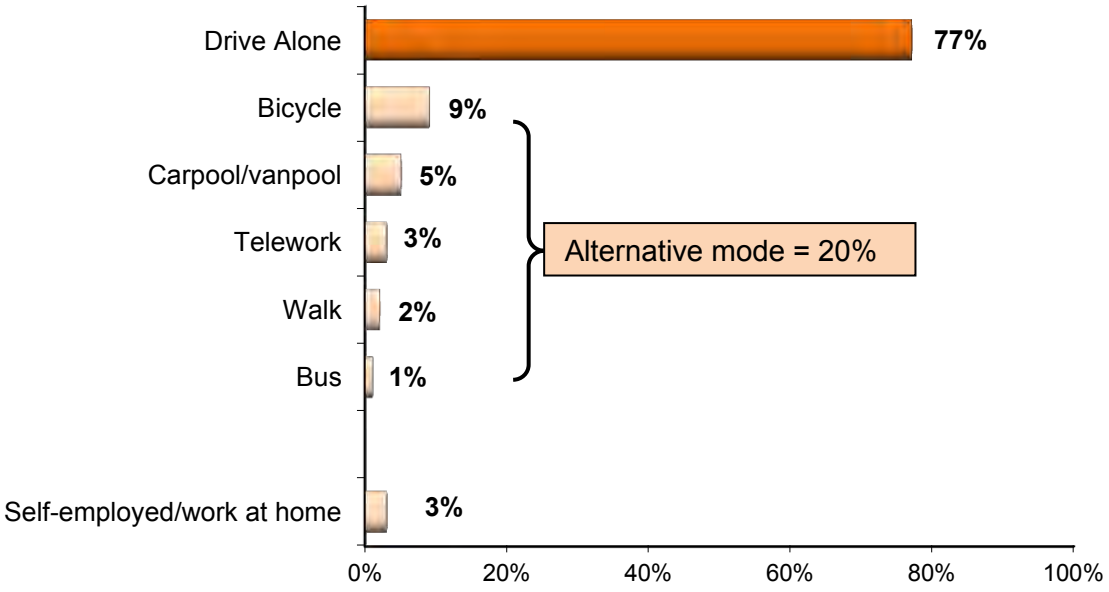
Figure 7
Telework Frequency
(n = 324)



Primary Commute Mode

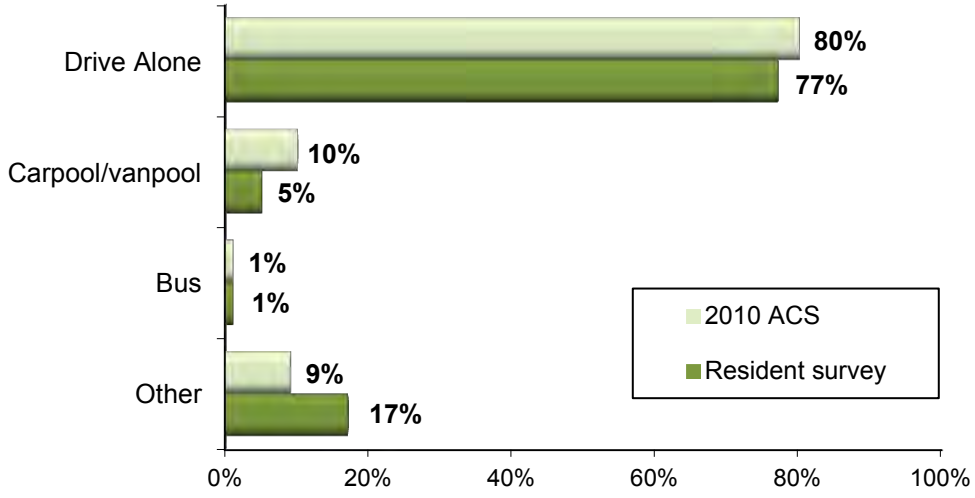
Employed respondents were asked how they traveled to work in a typical week. Figure 8 displays the percentage of respondents who use each mode as their "primary" mode, that is, the mode used most days during the week. Three-quarters (77%) of respondents said they drive alone most days in a typical week. Twenty percent use an "alternative mode" as their primary mode; nine percent bicycle and five percent carpool. Two percent walk and one percent ride a bus most days. Three percent telework as their primary mode and three percent said they are self-employed and work only at home.

Figure 8
Primary Commute Modes
(n = 342)



It's important to emphasize that these results differ from the region's actual commute mode split. The American Community Survey (ACS) conducted by the U.S. Census Bureau reported a drive alone mode split of 80% and a carpool / vanpool share of ten percent for the three-county region in 2010. (Figure 9) In particular, the resident survey bicycle mode share is considerably higher than would be expected for a regional commute population. The ACS reported an "other" mode split, which would include bicycle, but also walk, telework, and self-employed/work at home, of just nine percent.

Figure 9
Primary Commute Modes
(n = 342)



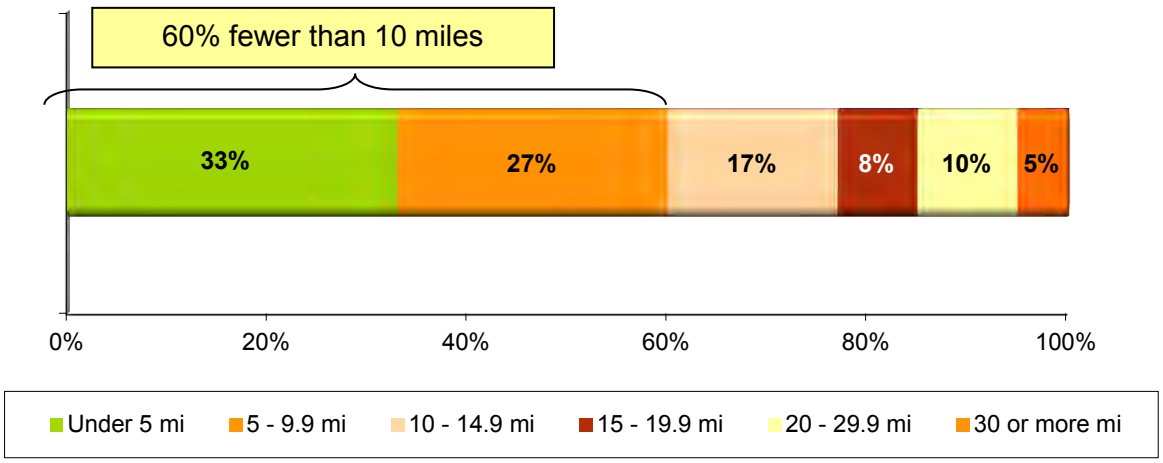
The distribution method for the resident survey sought to involve a broad sample of travelers, but it relied on employers, home owners' associations, business associations, and other organizations to assist with survey invitations. Several of the participating organizations had a special focus on bicycling, thus the high bicycle mode share almost certainly over-states the true use of bicycling for commute trips in the region. Additionally, the survey included a disproportionately high share of Asheville residents in the total sample. The drive alone rate for these respondents is 66%, well below the rate measured by the 2010 ACS. And the bicycle share for Asheville residents in the survey is 15%.

The analysis examined the possibility of differences in choice of primary mode among various demographic groups. Other than differences in mode by home location, the only statistically significant difference was in the use of bicycle; seventeen percent of male respondents reported bicycling to work, compared with five percent of female respondents.

Commute Length

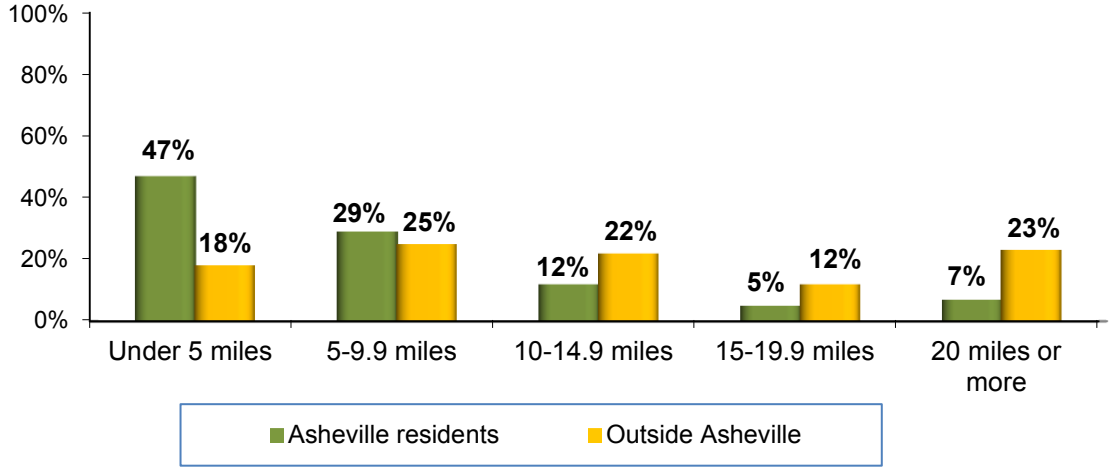
Commute Miles – Employed residents in the survey sample have a wide range of commute distances, from less than one mile to 99 miles. Figure 10 shows the distribution of trip distances. The average one-way distance is 10.4 miles. Six in ten respondents travel fewer than 10 miles and 85% commute fewer than 20 miles. About five percent travel 30 miles or more.

Figure 10
Commute Distance (miles)
(n = 286)



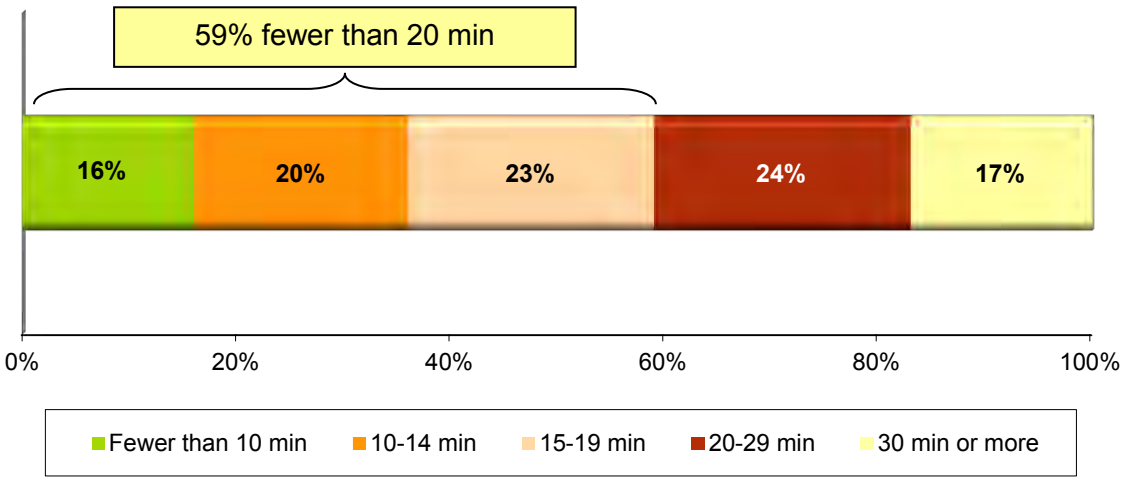
Commute Distance by Home Location – The relatively short regional commute average distance of 10.4 miles likely reflects the high proportion of Asheville residents and bicycle commuters in the survey sample. Respondents who live in the City of Asheville travel an average of 8.0 miles to work, compared with 13.1 miles for respondents who live outside the city. (Figure 11) More than three-quarters of Asheville residents commute fewer than 10 miles, compared with 43% of residents of other parts of the region. Conversely, nearly a quarter (23%) of residents who live outside Asheville travel 20 or more miles, compared with only seven percent of Asheville residents.

Figure 11
Commute Distance by Home Location
(Asheville n = 148, Outside Asheville n = 138)



Commute Time – Respondents commute, on average, about 19 minutes one way. As presented in Figure 12, 59% travel 20 minutes or less. Only 17% commute 30 minutes or more.

Figure 12
Commute Travel Time (minutes)
(n = 293)



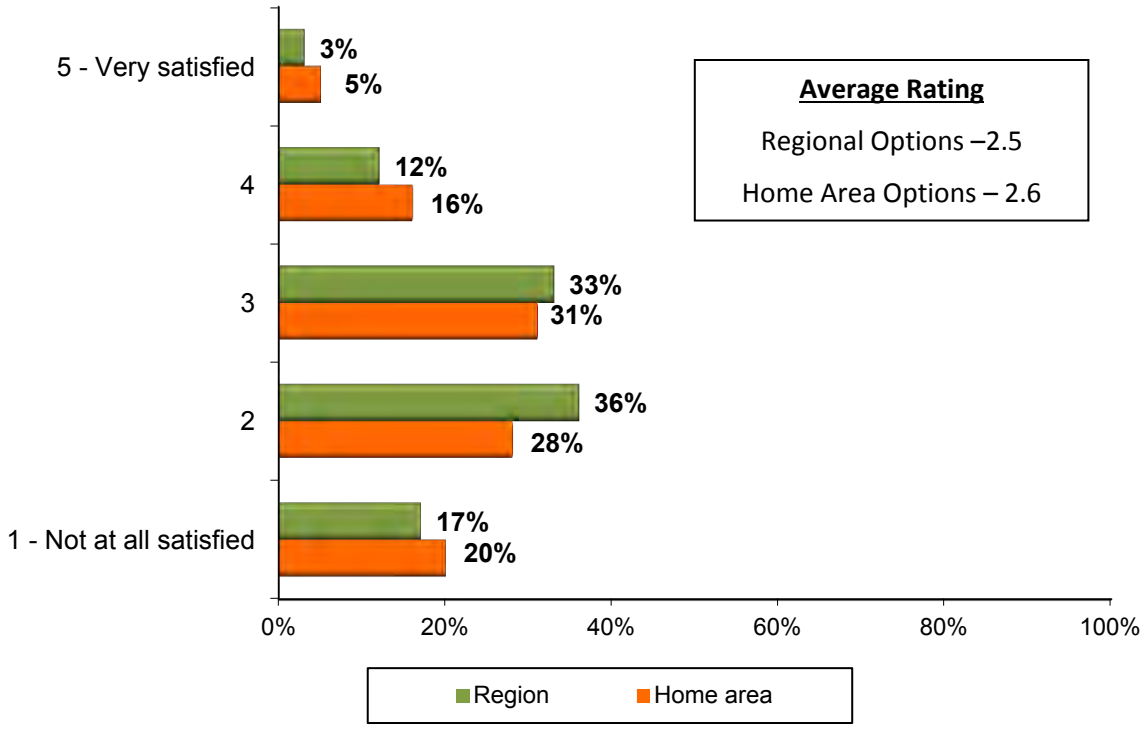
Attitudes Toward Transportation Options

One purpose of the survey was to assess travelers' impressions of the transportation system in western North Carolina. The survey included a series of questions related to this topic.

Satisfaction with Transportation Options

Respondents were first asked to rate how satisfied they are with transportation options in two geographic areas: 1) the Western North Carolina region overall and 2) the area where they live (home area). In the survey, "transportation options" was defined as "all the services available to travel around the region, including roads, buses, and services for bicycling, walking, and carpooling." These results are presented in Figure 13.

Figure 13
Satisfaction with Transportation Options
Options in Western North Carolina Region Overall and Options in Home Area
(Western NC Region n = 400, Home Area n = 399)



Satisfaction with Transportation Options in the Region – Fifteen percent of respondents rated their satisfaction with the options in the Western North Carolina region as one of the top two scores – 4 or 5 on a 5-point scale, where 5 meant "very satisfied" and 1 meant "not at all satisfied." A third gave the middle-range rating of 3. But more than half gave a low rating, indicating dissatisfaction; 36% rated their satisfaction as a 2 and 17% gave the lowest rating (1 – not at all satisfied). The average rating over all respondents is 2.5.

Satisfaction with Transportation Options in the Home Area – Respondents are slightly more satisfied with transportation options in the area where they live. Their average rating for home area options is 2.6. About two in ten (21%) rated their satisfaction with home area option as a 4 or 5 on a 5-point scale. Three in ten gave a rating of 3. But dissatisfaction is still high; 28% rated their satisfaction with home area options as a 2 and 20% said they are not at all satisfied.

Satisfaction with Transportation Options BY Home Area – Respondents who live in different parts of the region gave statistically different ratings for both their satisfaction with regional transportation options and home area options, but as illustrated by Table 3, the ratings are not consistent for the two categories. Asheville residents are less satisfied with regional options than are other residents, but they are more satisfied with options in their home area than are residents who live outside the City.

Table 3
Satisfaction with Transportation Options in Western North Carolina Region and Options in Home Area By Respondents' Residence Location

Satisfaction with Transportation Options	City of Asheville Residents (n = 216)	Buncombe Co. Outside Asheville Residents (n =98)	Outside Buncombe Co. Residents (n = 88)
Western North Carolina Region options			
- Satisfied (rating of 4 or 5)	11%	18%	21%
- Neither satisfied nor dissatisfied (rating of 3)	32%	36%	31%
- Dissatisfied (rating of 1 or 2)	**57%**	46%	48%
Average Rating	2.38	2.64	2.60
Home area options			
- Satisfied (rating of 4 or 5)	22%	15%	24%
- Neither satisfied nor dissatisfied (rating of 3)	39%	20%	23%
- Dissatisfied (rating of 1 or 2)	40%	**64%**	**53%**
Average Rating	2.71	2.24	2.52

(Statistical differences noted with orange highlighting)

Six in ten (57%) respondents who live in the City of Asheville reported being dissatisfied with regional transportation options (rating of 1 or 2), compared with 46% of residents who live in Buncombe County outside of Asheville and 48% of respondents who live outside Buncombe County. The average rating for Asheville residents (2.38) is correspondingly lower than the ratings for the other two groups of residents (Buncombe outside Asheville 2.64, Outside Buncombe 2.60).

As shown in the bottom half of Table 3, satisfaction for home area options is quite different. Respondents who live in Asheville are less dissatisfied than are respondents who live outside the City; 40% of Asheville residents gave home area options a rating of 1 or 2, compared with 53% of respondents who live outside Buncombe County and 64% of those who live in Buncombe County outside of Asheville. In this case, the average rating for Asheville residents (2.71) is notably higher than the ratings for the other two groups (2.42, 2.52).

Satisfaction with Transportation Options BY Commute Mode – A similar relationship is noted in ratings by the mode employed respondents use to get to work. (Table 4) Six in ten (60%) respondents who use an alternative mode to get to work reported being dissatisfied with regional transportation options, compared with 45% of residents who drive alone to work. But respondents who drive alone to work reported greater dissatisfaction with home area options; 49% gave home area options a rating of 1 or 2, compared with only 33% of respondents who use an alternative mode.

Table 4
Satisfaction with Transportation Options
in Western North Carolina Region and Options in Home Area
By Respondents' Commute Mode

Satisfaction with Transportation Options	Drive alone to Work (n = 241)	Use Alternative Mode (n = 55)
Western North Carolina Region options		
- Satisfied (rating of 4 or 5)	17%	11%
- Neither satisfied nor dissatisfied (rating of 3)	38%	29%
- Dissatisfied (rating of 1 or 2)	45%	**60%**
Average Rating	2.59	2.36
Home area options		
- Satisfied (rating of 4 or 5)	22%	24%
- Neither satisfied nor dissatisfied (rating of 3)	29%	**44%**
- Dissatisfied (rating of 1 or 2)	**49%**	33%
Average Rating	2.59	2.52

(Statistical differences noted with orange highlighting)

Ratings for satisfaction also differed somewhat by other respondent characteristics:

Western North Carolina Region's Options

- Residents who do not have access to a personal vehicle reported greater dissatisfaction – More than eight in ten respondents (83%) who do not have access to a personal vehicle are dissatisfied with regional transportation options. This was compared to 50% of those who have a vehicle available all the time and 63% who have a vehicle available some of the time.
- Residents with lower household incomes reported greater dissatisfaction – About six in ten (58%) respondents with incomes under $60,000 are dissatisfied, compared with 49% of respondents with incomes between $60,000 and $119,999 and 46% of respondents with incomes of $120,000 or more.
- Younger residents and older residents are more dissatisfied – Nearly six in ten (57%) respondents who are younger than 45 years of age and 53% of those aged 65 or older gave low ratings for satisfaction, while only 45% of respondents who are between 45 and 64 years old rated satisfaction as a 1 or 2.

Home Area Options

- Women reported greater dissatisfaction than did men – More than half (54%) of women rated their satisfaction with home area options as a 1 or 2, while only 38% of men gave low satisfaction ratings. Men also were more positive in their ratings overall; 27% of men gave a high 4 or 5 rating for satisfaction, compared with only 17% of women.
- Dissatisfaction with home area options worsened as commute distance increased – More than half (53%) of respondents who travel 15 or more miles to work reported being dissatisfied, while only 48% of those who commute between 5 and 14.9 miles and 38% who travel fewer than five miles were dissatisfied.

Considering all the analysis presented above, it's clear that respondents make a distinction between the options they want, need, or expect to get around a small, local area (home area) versus to make longer trips through a larger area (region). Within this context, the apparently contradictory results presented above are reasonable. In deciding how to rate each type of option, respondents would have considered the options that are actually available to them: personal vehicle, public transit, walking, bicycling, etc., as well as the characteristics of the trips they wanted to make.

Walking and bicycling would be options for local trips in areas that have sidewalks, safe bicycle facilities, and where local trips are short. But these modes are less suitable for rural areas or even suburban areas that are not equipped with safe walking paths. And walking and bicycling would be unsuitable for most regional trips. Respondents also could use a taxi, but the cost would be prohibitive for most trips outside of the home area.

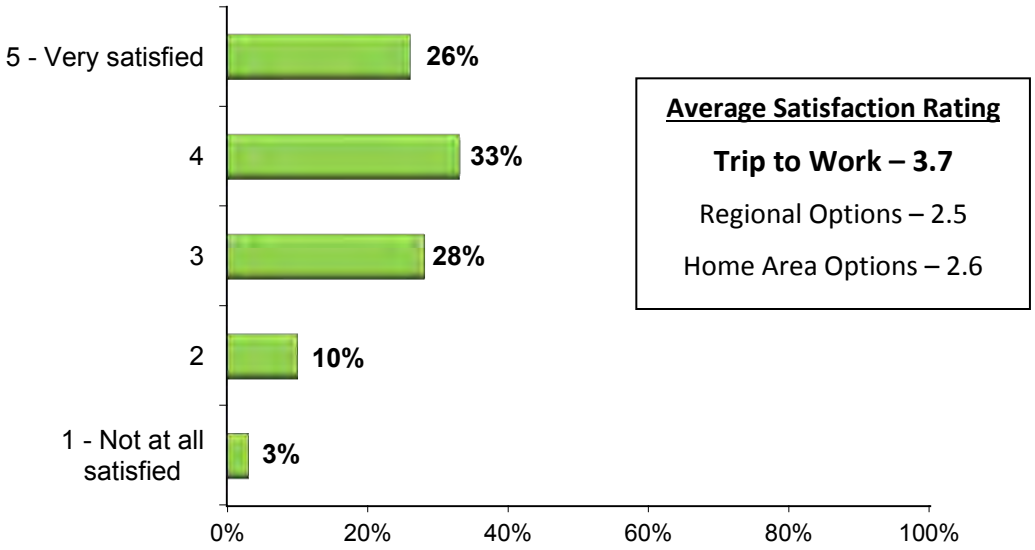
Thus, respondents who don't have a personal vehicle need access to public transit. Public transit is not available in most areas outside Asheville, thus Asheville residents have the ability to get around their home area without a car, but not around the region – they have adequate local mobility but not regional mobility. Residents who live outside Asheville and who have a personal vehicle have the opposite situation – good regional mobility but would like more options in the home area. Car-free residents who live outside Asheville would have poor mobility for both local and regional trips.

Satisfaction with Current Commute

Employed respondents also were asked to rate how satisfied they were with their current trip to work. These results are displayed in Figure 14. Interestingly, results for this question were much more positive than were results for satisfaction with transportation options generally.

A majority (59%) of respondents reported being satisfied (rating of 4 or 5) with their trip to work. About a quarter (28%) gave a rating of 3. Only 13% reported being dissatisfied (rating of 1 or 2). Overall, respondents rated their commute satisfaction as an average of 3.7 on a five point scale where 5 meant "very satisfied" and 1 meant "not at all satisfied." This average is compared with an average rating of 2.5 for satisfaction with regional transportation options and a rating of 2.6 for home area options.

Figure 14
Satisfaction with Trip to Work
(n = 305)



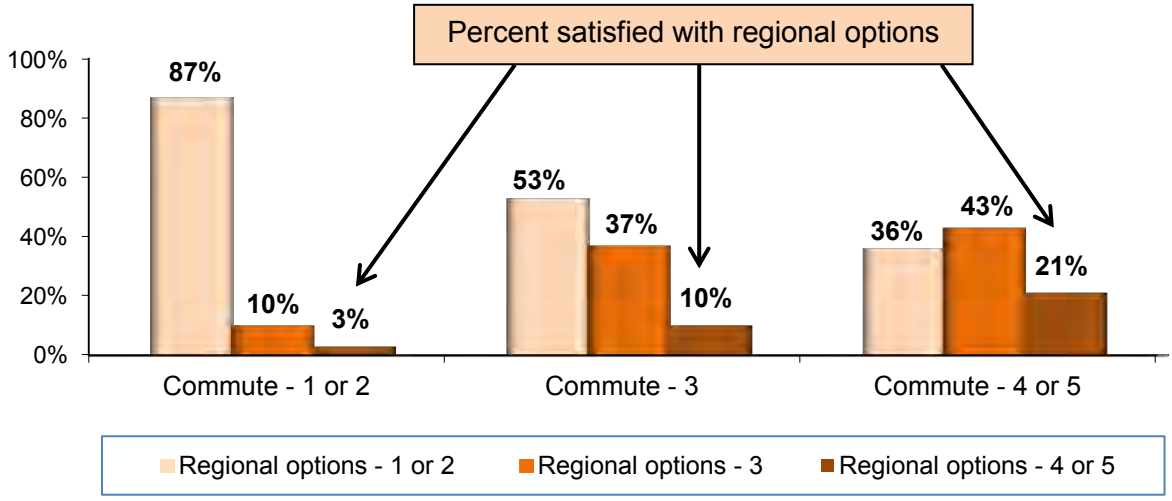
Ratings for commute satisfaction also differed somewhat by respondent characteristics:

- Satisfaction with commuting declined as commute distance increased – Seven in ten (72%) respondents who travel fewer than 10 miles to work gave a high commute satisfaction rating, compared with 49% of respondents who commute between 10 and 19.9 miles to work. Only 31% of those who travel 20 or more miles reported a satisfaction rating of 4 or 5.
- Alternative mode commuters gave higher satisfaction ratings than did respondents who drive alone – Seven in ten (70%) respondents who use an alternative mode to get to work rated their commute satisfaction as a 4 or 5. By contrast, only 56% of respondents who drive alone were satisfied with their commute. This was in contrast to the result for regional transportation option satisfaction, in which alternative mode commuters gave lower ratings for satisfaction with transportation options.
- Lower income respondents reported lower commute satisfaction – About half (47%) of respondents with incomes of under $40,000 are dissatisfied, compared with 61% of respondents with incomes between $40,000 and $99,999 and 65% of respondents with incomes of $100,000 or more.

Satisfaction with Transportation Options BY Commute Satisfaction – Respondents' average 3.7 rating for commute satisfaction is much higher than the 2.5 rating for satisfaction with regional transportation options and the 2.6 rating for home area options. This suggests that respondents took a broad view of option availability in their transportation options ratings, likely considering options they could use for non-work travel as well as how they travel or want to travel for their trip to work.

However, as illustrated in Figure 15, respondents' satisfaction with their commute certainly appears related to their satisfaction with transportation options in the region. Among respondents who rated their trip to work as 1 or 2 (dissatisfied), 87% also are dissatisfied with regional transportation options and only 3% are satisfied. Conversely, among respondents who rated their commute as a 4 or 5 (satisfied), only 36% are dissatisfied and 21% reported being satisfied.

Figure 15
Transportation Option Satisfaction by Commute Satisfaction
(Commute Rating 1 or 2 n = 40, Commute Rating 3 n = 82, Commute Rating 4 or 5 n = 174)



Features Important in Choice of Transportation

The survey also included two sets of questions regarding factors that a traveler might consider in choosing a type of transportation. First, respondents were asked how important various transportation features (cost, convenience, safety, time to make trips, and comfort) are in their choice of transportation options to travel around western North Carolina. Then they were asked to rate bus service on these features.

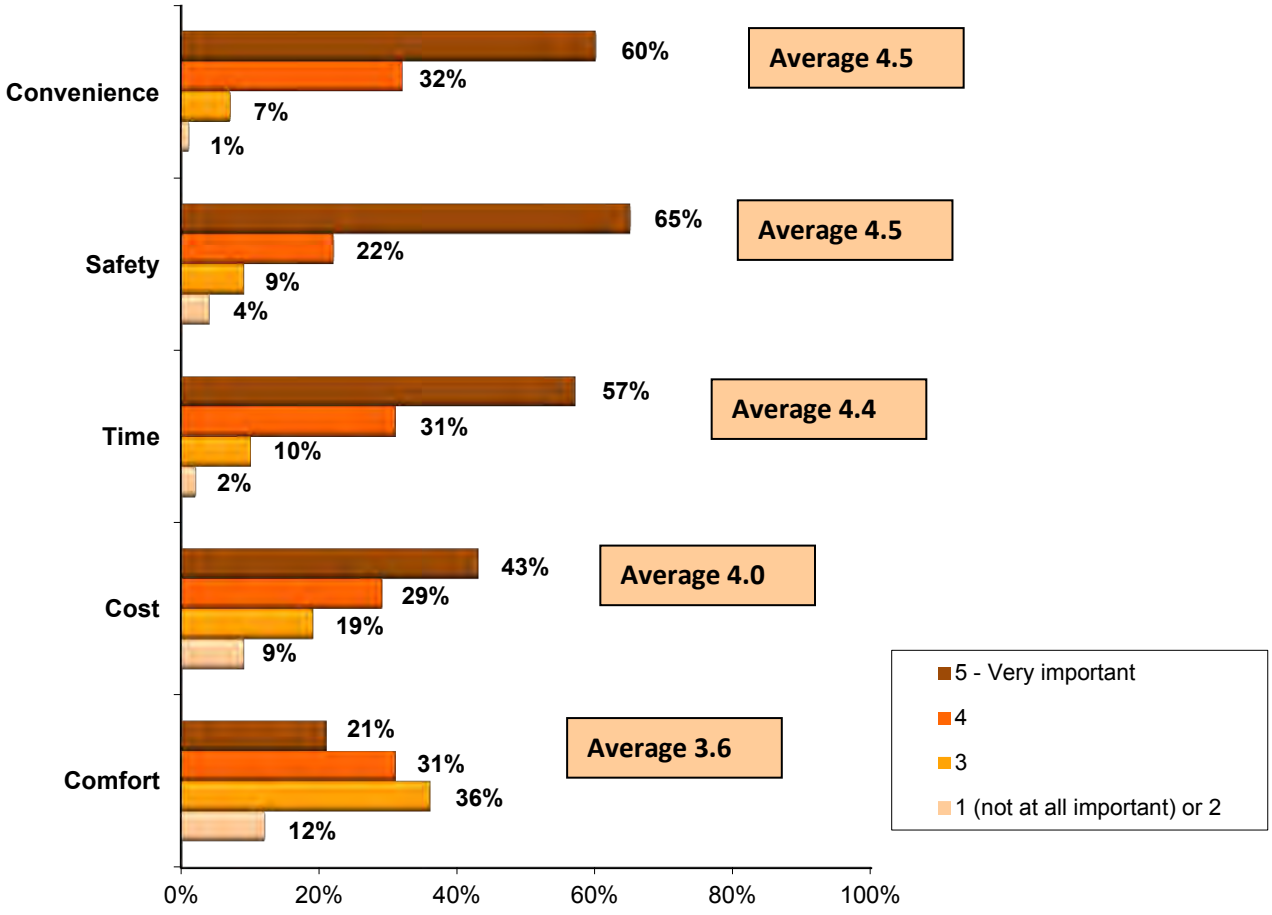
Importance of Transportation Features to Respondents' Transportation Choice – Figure 16 presents ratings for importance of each feature to transportation choice. The five features are ordered from highest to lowest average rating for importance. Four of the five features were rated as important or very important by at least seven in ten respondents. And all except "comfort" received an average score of at least 4.0.

Convenience and safety were rated the most important features, with about nine in ten respondents saying these factors are important (rating of 4 or 5) and at least seven in ten saying they are very important (rating of 5). On average, these features both received an average score of 4.5.

Time needed to make trips also was rated important/very important by about nine in ten respondents, but the average rating is slightly less than those for convenience and safety, because fewer respondents rated it as "very" important. It received an average score of 4.4.

About seven in ten (72%) respondents rated cost as important and 43% rated it very important. The average score for this feature is 4.0. Comfort received the lowest score of the five features, 3.6, on average. About half (52%) of respondents said comfort is important, with only about 21% saying it is very important.

Figure 16
Importance of Transportation Features to Respondents' Mode Choice
(Convenience n = 402; Safety n = 403; Time n = 404; Cost n = 405; Comfort n = 407)



Importance Ratings by Residence Location – Respondents who live in different parts of the region gave different ratings for several features. (Table 5) Respondents who live in the City of Asheville gave lower importance ratings than did other respondents on three features – safety, cost, and comfort. Respondents who live in Buncombe County, but outside Asheville gave the highest ratings on these features. Ratings given by respondents who live outside Buncombe County were not statistically different than other respondents, except for the comfort feature; they rated this feature as more important than did Asheville residents.

Table 5
Ratings for Importance of Transportation Features
Percentage of Respondents Rating Features as Important (Rating of 4 or 5)
By Respondents' Residence Location

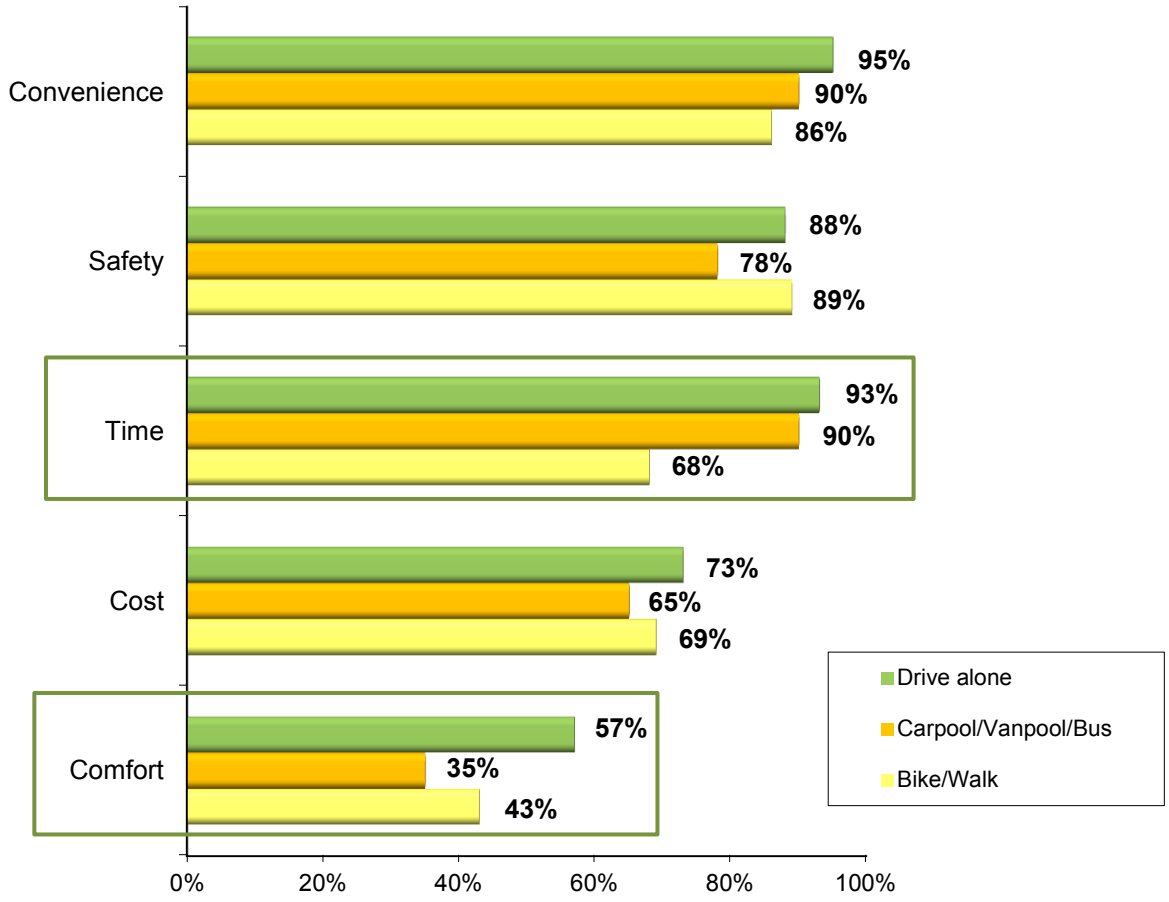
Transportation Features	City of Asheville Residents (n = 217)	Buncombe Co. Outside Asheville Residents (n = 99)	Outside Buncombe Co. Residents (n = 84)
Rating of 4 or 5 (Important)			
- Convenience	91%	96%	92%
- Safety	83%	**94%**	89%
- Time needed to make trip	86%	91%	87%
- Cost	68%	**79%**	71%
- Comfort	46%	**59%**	**57%**
Average Rating			
- Convenience	4.5	4.6	4.5
- Safety	4.3	4.7	4.6
- Time needed to make trip	4.4	4.5	4.3
- Cost	4.0	4.2	4.1
- Comfort	3.4	3.8	3.8

(Statistical differences noted with orange highlighting)

Importance of Transportation Features by Respondents' Primary Commute Mode – Respondents generally have similar opinions on what travel features are important in their choice of travel mode, regardless of the mode they use to get to work. (Figure 17) There were no statistical differences in importance ratings for convenience, safety, and cost among those who drive alone to work, those who carpool/vanpool/ride a bus, and respondents who bicycle/walk, although the sample sizes for the two alternative mode groups are small.

But respondents who bicycle/walk to work gave statistically lower importance ratings for the time needed to make the trip; only 68% rated time as an important feature, compared with nine in ten respondents who drive alone and a similar share of those who carpool/vanpool/ride a bus. Ratings on comfort also are different for the three mode groups. Drive alone respondents rated this feature as statistically more important (57% important) than did either alternative mode group. Only about 43% of bicycle/walk commuters and 35% of carpool/vanpool/bus commuters rated comfort an important feature.

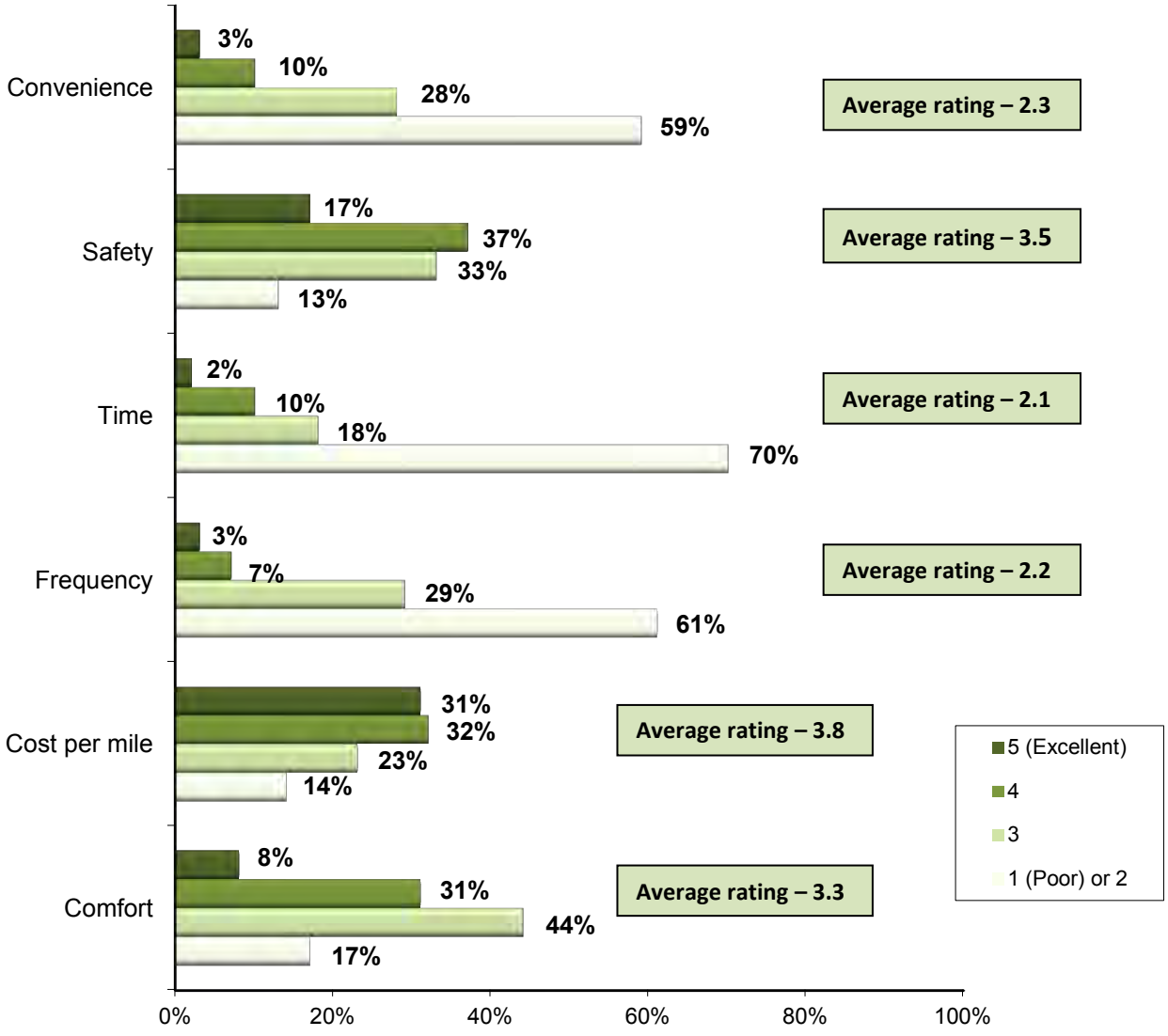
Figure 17
Importance of Transportation Features to Respondents' Mode Choice
By Primary Commute Mode
Percentage of Respondents who Rate Feature as Important (Rating of 4 or 5)
(Drive alone n = 242; Carpool/Vanpool/Bus n = 20*; Bike/Walk n = 36*)
(Statistical differences highlighted; * Caution, small sample sizes)



Ratings for Quality of Bus Service

After reporting the importance of the five features to their choice of mode, respondents were asked to rate bus service in the western North Carolina region on these same five features: convenience, safety, time, cost, and comfort, and on one additional transit service feature – frequency of bus service. On these questions, the rating scale ranged from a 1, defined as "Poor," to a 5, defined as "Excellent." The results for these questions are presented in Figure 18.

Figure 18
Ratings for Bus Service in Western North Carolina
(Convenience n = 279; Safety n = 242; Time n = 254; Frequency n = 264, Cost n = 219; Comfort n = 231)



Bus service received moderately good rating on three features. About half of respondents rated safety (54%) and cost per mile (53%) as a 4 or 5 (Excellent) and almost four in ten (39%) gave a 4 or 5 rating to comfort. These features received overall average scores of 3.5, 3.8, and 3.3, respectively.

Bus service received much lower ratings for convenience, time needed to make trips, and frequency of service. Only about one in ten respondents rated these features as 4 or 5. Time received the lowest ratings; 70% rated the time needed to make trips as a 1 (Poor) or 2 and only 18% gave it the middle rating of 3. Frequency of bus service and convenience received similarly low ratings. About six in ten gave a low rating for frequency (61%) and convenience (59%), with about three in ten giving the middle rating to these features. The average scores for these features were: convenience – 2.3, time – 2.1, and frequency – 2.2.

Bus Service Ratings by Commute Mode – Respondents gave similar ratings for most transit features, regardless of the mode they primarily use to get to work. The ratings for respondents who drive to work and those who use an alternative modes were statistically the same for cost per mile, safety, time needed to make the trip, and comfort.

The only features that were rated differently were convenience and frequency of bus service. On these two features, respondents who use alternative modes to commute gave lower ratings for bus service. Three-quarters (74%) of alternative mode commuters rated bus convenience a 1 or 2, compared with 56% of drive alone commuters. The results were similar for bus frequency; 73% of alternative mode commuters rated this feature a 1 or 2, while 56% of drive alone respondents gave these low ratings.

Bus Service Ratings by Residence Location – The analysis also examined whether respondents who live in different parts of the region rated bus service differently. In particular, do respondents who live in the City of Asheville, where bus service is more available, give different ratings than do respondents who live outside the City? As shown in Table 6, respondents who live in Asheville rated all bus service features approximately the same as did respondents who live outside Asheville. The slight differences shown in the table are not statistically significant.

Table 6
Average Rating for Bus Features – Live in Asheville Versus Live Outside Asheville
Scale of 1 (Poor) to 5 (Excellent)

Transportation Feature	Live in Asheville (n = 138)	Live Outside Asheville (n = 81)
- Convenience	2.3	2.2
- Safety	3.6	3.4
- Time needed to make trip	2.0	2.1
- Frequency of bus service	2.1	2.3
- Cost (bus cost per mile)	3.8	3.6
- Comfort	3.4	3.1

(Statistical differences noted with orange highlighting)

Comparison of Average Importance Ratings and Bus Rating – Table 7 shows a comparison of the average bus rating against the average importance rating for the features that were shown in Figure 16. This comparison highlights features on which bus meets travelers' priorities and where bus falls short. The last column of the table shows the gap between the overall importance rating and the bus service rating for each feature.

Table 7
Overall Ratings for Transportation Features Versus Rating for Bus

Transportation Feature	Feature Importance Rating Overall (n = 402)	Bus Service Rating (n = 219)	Rating Gap
- Convenience	4.5	2.3	**(2.2)**
- Safety	4.5	3.5	**(1.0)**
- Time needed to make trip	4.4	2.1	**(2.3)**
- Frequency of bus service	N/A	2.2	----
- Cost (bus cost per mile)	4.0	3.8	(0.2)
- Comfort	3.6	3.3	(0.3)

As illustrated, the bus service ratings for cost per mile and comfort nearly match respondents' ratings for the importance of the features. But bus service fell short of respondents' needs on safety (gap of 1.0) and far short on time (2.3) and convenience (2.2). Respondents were not asked to rate importance of bus frequency in their mode choice, so a gap score could not be calculated for this feature. But frequency would be related to both the time to make a trip and the convenience of the trip, so the low rating for bus frequency likely would have produced a moderate to high gap score for this feature.

Importance to Invest in Transportation Improvements

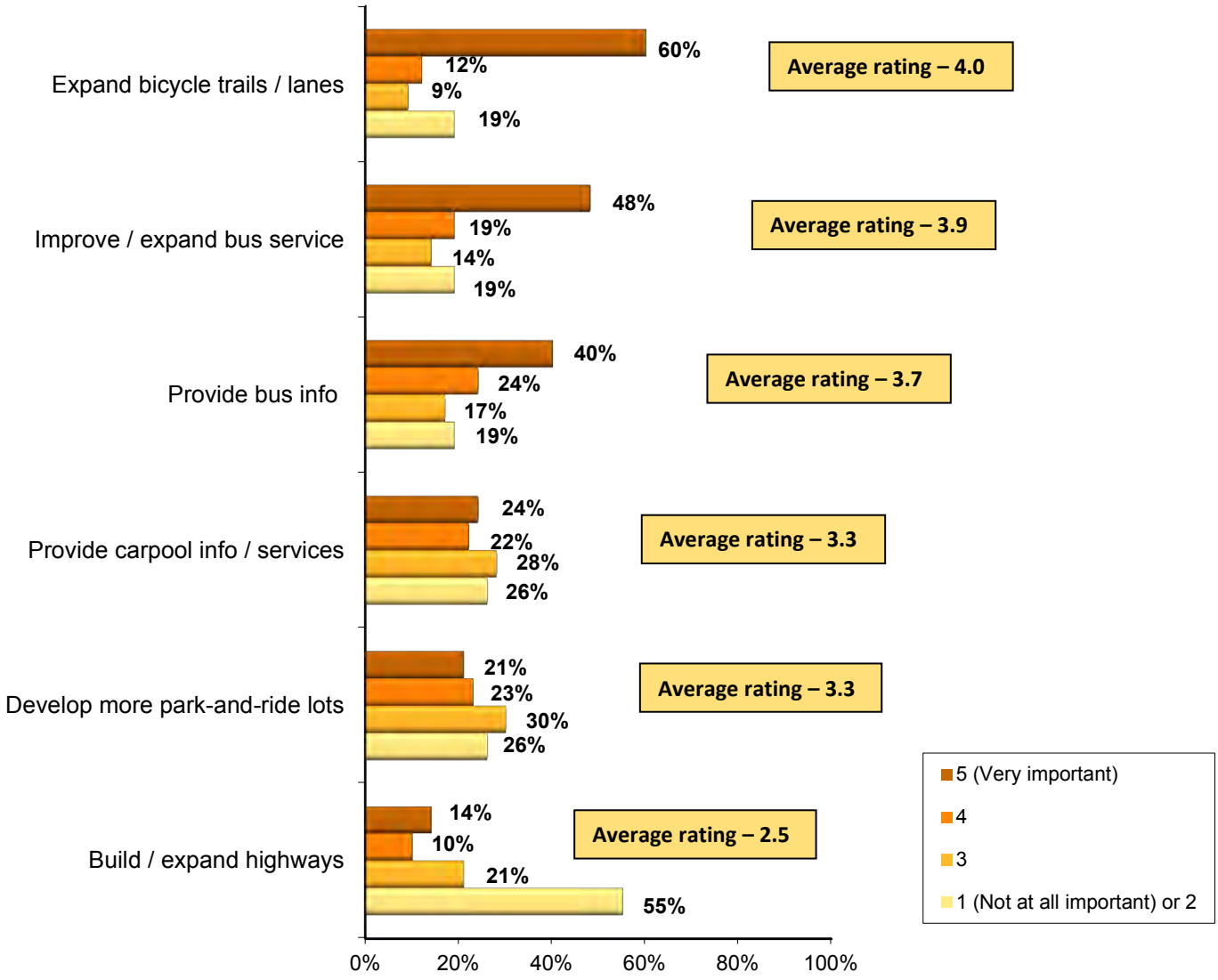
The survey also explored respondents' views on how important it is for transportation agencies in western North Carolina to invest in six different types of transportation improvements:

- Expand bicycle trails and lanes
- Improve or expand bus service
- Develop more park-and-ride lots
- Build or expand highways
- Provide information and services to make it easier to carpool/vanpool
- Provide information and services to make it easier to use a bus.

Respondents rated the importance of investment in each type of improvement individually, on a 1 to 5 scale, where 1 meant "not at all important" and 5 meant "very important. Figure 19 presents these results. The highest ratings for importance of investment were given to: expand bicycle facilities, improve / expand bus service, and provide bus information and services. They received average importance ratings of 4.0, 3.9, and 3.7, respectively. Two-thirds of respondents said it was important to invest in each of these improvements. Six in ten rated investment in bicycle trails/lanes as "very important."

Two alternative mode service improvements: provide carpool information and services and develop more park-and-ride lots, each received an average rating of 3.3. About four in ten respondents rated these as important investments. The lowest overall rating was given to "build or expand highways;" the average rating was 2.5. Only a quarter (24%) of respondents rated this as important and more than half (55%) rated it as not important (rating of 1 or 2).

Figure 19
Importance for Transportation Agencies to Invest in Transportation Improvements
(Bicycle trails/lanes n = 397, Bus service n = 401, Bus info n = 399, Carpool info/services n = 396, Park-and-ride lots n = 383, Highways n = 395)



Importance to Invest by Residence Location – It would be reasonable to assume that respondents who live in different parts of the region might rate various improvements differently and the data confirm that assumption. Table 8 shows the average ratings for the six types of improvements for residents of three geographic areas: City of Asheville, Buncombe County outside Asheville, and Outside Buncombe County. Respondents who live in the City of Asheville gave statistically higher importance ratings for three improvements – bicycle trails and lanes, improve / expand bus service, and provide bus information – than did respondents who live outside the City. Respondents who live outside Asheville gave higher ratings for the importance of building / expanding highways. The ratings for Buncombe County residents outside Asheville and those who live outside Buncombe County were not statistically different from each other.

Table 8
Average Rating for Bus Features – Live in Asheville vs Live Outside Asheville
Scale of 1 (Poor) to 5 (Excellent)

Travel Feature	Live in Asheville (n = 138)	Live in Buncombe County Outside Asheville (n = 138)	Live Outside Buncombe County (n = 81)
- Expand bicycle trails /lanes	**4.2**	3.8	3.8
- Improve / expand bus service	**4.0**	3.6	3.8
- Provide bus info	**3.9**	3.6	3.5
- Provide carpool/vanpool info / services	3.5	3.2	3.2
- Develop more park-and-ride lots	3.3	3.3	3.4
- Build / expand highways	2.3	**2.7**	**2.8**

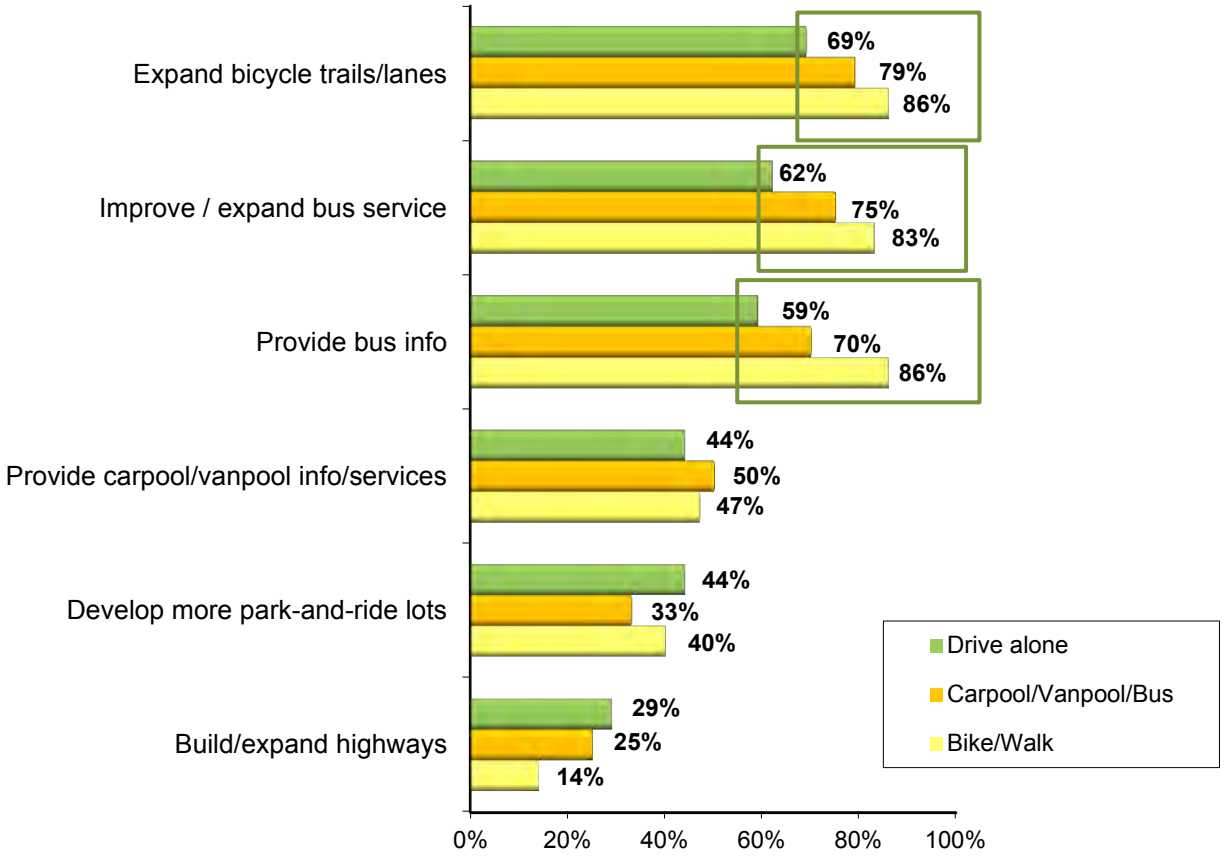
(Statistical differences noted with orange highlighting)

Importance of Investment by Respondents' Primary Commute Mode – Figure 20 shows the how employed respondents in each of the three commute mode groups (drive alone, carpool/vanpool/bus, and bike/walk) rated the importance of each investment. Respondents who drive alone rated the need for investments in more park-and-ride lots and information and services to make it easier to carpool and vanpool at about the same rate as did respondents who use an alternative mode. They were less likely than were respondents who used bicycle/walk or carpool/vanpool/bus to get to work to consider it important to invest in either bicycle facilities or bus service or information.

But even respondents who drive alone expressed support for alternative mode investments. More than four in ten drive alone respondents supported investments in park-and-ride and carpool support services, six in ten felt bus investments were important, and seven in ten rated bicycle facilities investments as important.

Respondents in all three mode groups gave low importance ratings for investment in highways. Only 29% of drive commuters and 25% of respondents who use a carpool/vanpool/bus to get to work rated road building an important investment. Among respondents who primarily bicycle or walk to work, the rating was even lower, only 14% think this is an important investment.

Figure 20
Importance of Investing in Transportation Improvements
By Primary Commute Mode
Percentage of Respondents who Rate Importance as Important (Rating of 4 or 5)
(Drive alone n = 242; Carpool/Vanpool/Bus n = 20*; Bike/Walk n = 36*)
(Statistical differences highlighted; * Caution, small sample sizes)



As noted before, the survey over-represented respondents who bicycle to work and likely over-represented respondents who bicycle regularly for other trip purposes, thus the high rating for the need to invest in bicycle trails/lanes was explored further by comparing ratings given by respondents who had bicycled frequently during the past month vs those who had not. These results are presented below.

	Importance to Invest in Bicycle Trails /Lanes		
Bike Trips in Past Month	Rating - 1 or 2	Rating - 3	Rating 4 or 5
• 0 bike trips in past month (n = 248)	22%	13%	**65%**
• 1 to 5 trips (n = 79)	13%	3%	**85%**
• 6 or more trips (n = 68)	13%	0%	**87%**

As is clear from the results, even respondents who did not make any bicycle trips during the past month think it is important to invest in bicycle facilities; 65% of these respondents rated it as a 4 or 5. The percentage is higher among respondents who bicycled during the previous month; nearly nine in ten of these respondents rated bicycle facilities investments as important. It is worth noting, however, that the question about frequency of bicycle use instructed respondents to include only trips made for trips other than trips that were purely for exercise or recreation. Thus, the "0 trips last month" category would include bicycle riders who ride only for recreational purposes.

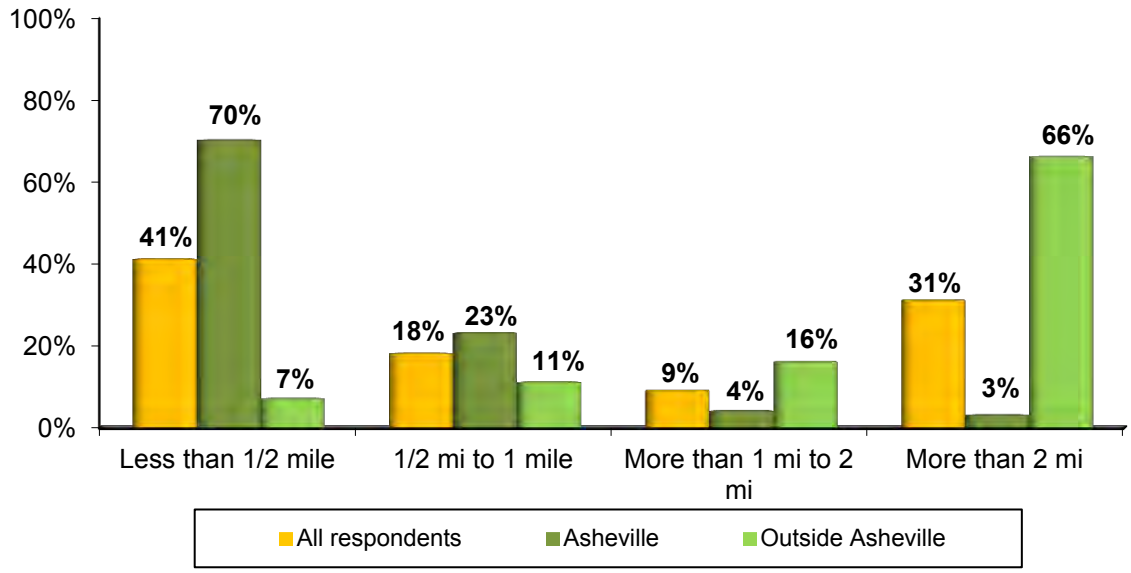
Availability of Transportation Facilities

Distance to Home to Bus Stop

To assess a measure of the closeness of transit, all respondents were asked the distance from their homes to the nearest bus stop. Figure 21 displays the distribution of access distance for all respondents and for two sub-sets of respondents – those who live in the City of Asheville and those who live outside Asheville. Across all respondents, about four in ten said they live less than one-half mile from a bus stop and 59% live within one mile. About one in ten live more than a mile to two miles. The remaining 31% live more than two miles from the nearest stop.

Asheville residents have substantially greater access to transit than do other residents; 70% of Asheville respondents live less than one-half mile from a bus stop and 93% live within one mile. By contrast, only 18% of respondents who live outside Asheville live within one mile of a bus stop and two-thirds live more than two miles from the closest stop.

Figure 21
Distance from Home to Bus Stop
(All respondents n = 392, Asheville residents n = 214; Outside Asheville residents n = 178)



Use of Transit for any Trip

The survey presented respondents with a list of bus services that operated in some part of the region and asked them to check all of the services they had "ever used" for "any trip" in the region. Respondents who said they had used at least one of the services were then asked how many times they had used any of the services in the past month. Table 9 and Figure 22 present the results for these questions.

Ever Used any Transit Service in Western North Carolina – Slightly more than half (55%) of all respondents said they had used a bus service for a trip in the region. (Table 9) By far, the most widely used service was Asheville Transit, used by 48% of all respondents. Small shares of respondents had used another bus service.

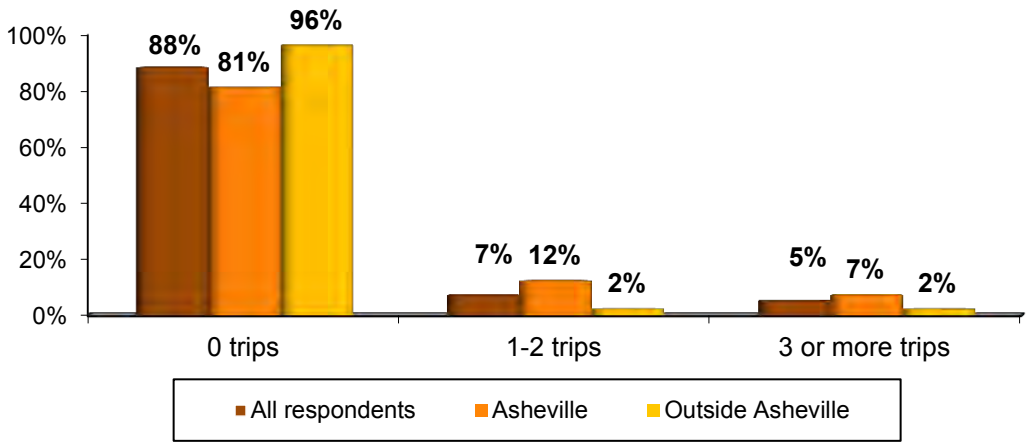
Use of transit is concentrated among Asheville residents; 68% had ever used transit for a trip in the region, compared with 45% of respondents who live in Buncombe County outside of Asheville and just 27% of respondents who live outside Buncombe County.

Table 9
Bus Services – Percentage of Respondents
Who Have Ever Used the Service for Any Trip in Western North Carolina

Bus Services	Ever Used Bus Service for Any Trip in Western North Carolina			
	All Respondents (n = 381)	**Asheville Residents (n = 216)**	**Buncombe Co. Outside Asheville (n = 98)**	**Outside Buncombe County (n = 82)**
Have not used any of the services	45%	32%	55%	73%
Used one or more services	**55%**	**68%**	**45%**	**27%**
- Asheville Transit	48%	67%	42%	13%
- Mountain Mobility	3%	3%	5%	0%
- Apple County Transit	2%	<1%	0%	8%
- Haywood County Transit	1%	0%	0%	6%
- The Link	<1%	0%	2%	1%
- Other services	2%	2%	3%	1%

Number of Bus Trips in the Past Month – About one in ten (12%) respondents said they had made a trip by bus in the region in the past month. Seven percent made one or two bus trips and five percent made three or more trips by bus. Asheville resident respondents made more bus trips than did residents of other areas. About two in ten (19%) Asheville residents made a bus trip in the past month and seven percent made three or more trips. Respondents who live outside Asheville made fewer bus trips; only four percent used a bus in the past month and only two percent made three or more bus trips.

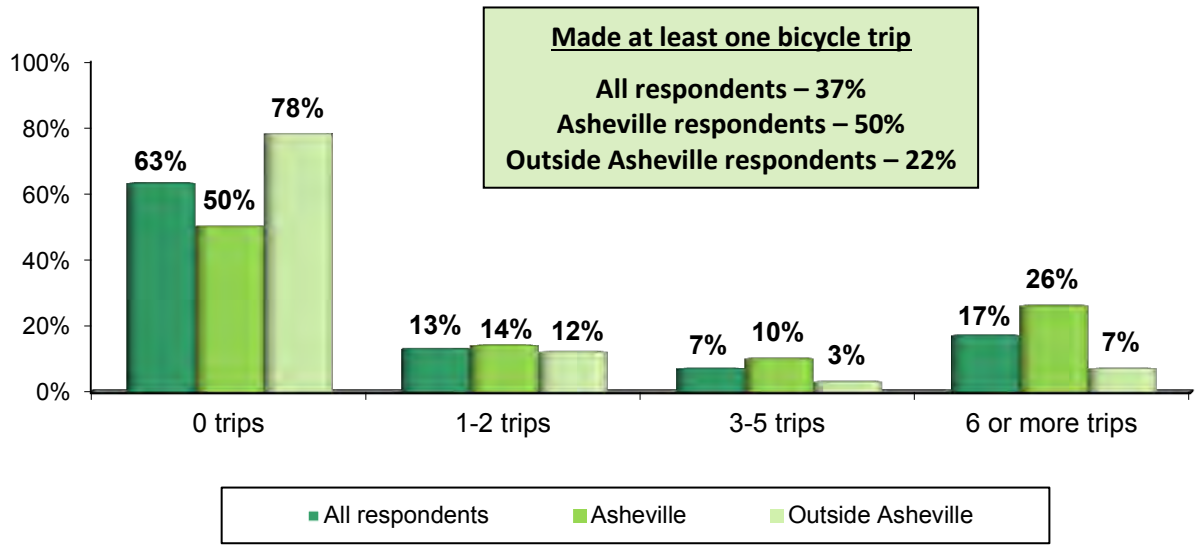
Figure 22
Number of Trips Made in Past Month by Bus
(All respondents n = 410, Asheville residents n = 220, Outside Asheville residents n = 188)



Use of and Interest in Bicycle as a Travel Mode

Number of Bicycle Trips in the Past Month – The survey also asked respondents how many times in the past month they had made a trip by bicycle, other than trips that were purely for exercise or recreation. (Figure 23). Over a third (37%) of all respondents made at least one bicycling trip in the past month. Twenty percent made between one and five trips and 17% made six or more bicycle trips.

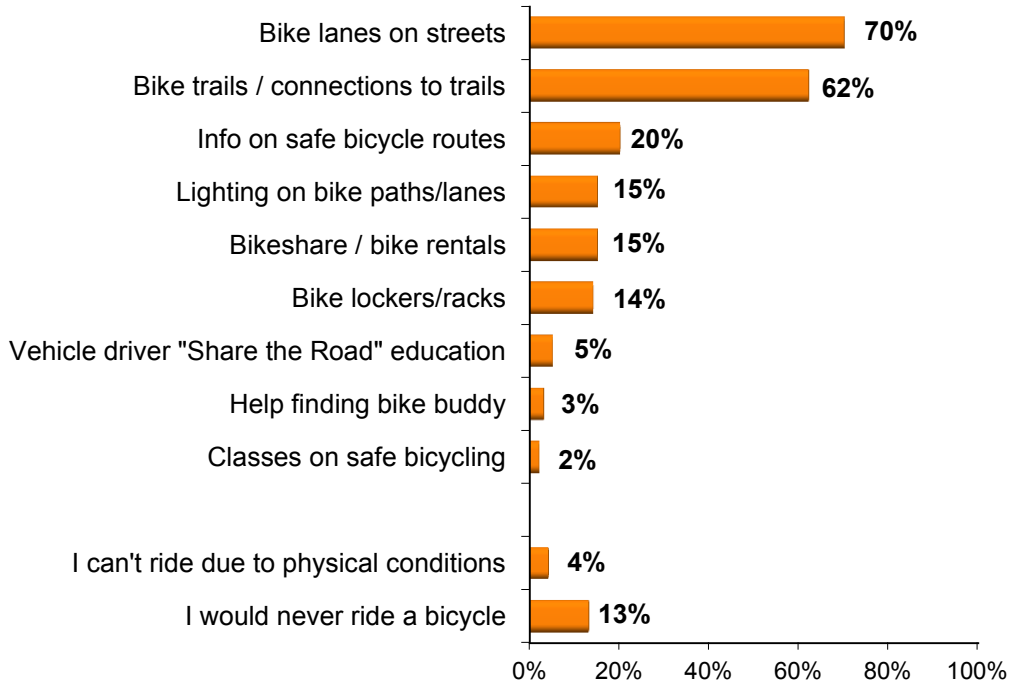
Figure 23
Number of Trips Made in Past Month Entirely By Bicycle
(All respondents n = 409, Asheville residents n = 221, Outside Asheville residents n = 186)



Respondents who lived in Asheville were much more likely to have made a bicycle trip than were residents who lived outside the City. Half (50%) of Asheville respondents made at least one bicycle trip, compared with 22% of residents in other areas of the region. Asheville respondents who made a bicycle trip were about evenly divided between occasional riders, who made between one and five bicycle trips (24%), and frequent riders, who made six or more trips (26%). By contrast, respondents who live outside Asheville and rode a bicycle for a non-exercise purpose were twice as likely to ride occasionally (15%) as to ride frequently (7%).

Interest in Bicycle Services – To identify actions that could facilitate expand bicycle use, respondents were asked to select up to three bicycle facilities and services that would make it easier for them to make trips by bicycle. The responses are presented in Figure 24.

Figure 24
Bicycle Facilities/Services that Would Encourage or Make it Easier for Residents to Make Trips by Bicycle
(n = 411)



About 13% of respondents said they would never ride a bicycle and four percent said they could not ride due to physical limitations. But eight in ten respondents named at least one bicycle service that they would find useful. More than seven in ten identified either bike trails / connectors to bike trails or bike lanes on streets as services that would make it easier to bicycle. About two in ten selected information on safe bicycle routes and about 15% mentioned lighting on bike paths, bikeshare / bike rentals, or bike lockers/racks. Small percentages named driver education (5%), help finding a bike buddy (3%) or classes on safe bicycling (2%).

For most of the services noted, respondents reported similar interest, regardless of where they live. But Asheville respondents were more likely than were other respondents to note bicycle lanes on streets; 79% of Asheville respondents selected this service, which was selected by only 58% of other respondents.

The responses were quite different, however, depanding on their frequency of bicycle use in the past month. As presented below, respondents who were frequent riders (six or more trips in the past month) reported greater interest than did non-riders in five of the services: bike lanes on streets, bike trails, lighting on bike paths, bike lockers/racks, and vehicle driver education. Occasional riders (1 to 5 trips) also reported high interest in bike lanes on streets, bike trails, and bike lockers/racks. Respondents who had not made any bicycle trips in the past month reported greater interest in bikeshare / bike rentals. Differences for other services were not statistically significant.

	Percentage of Respondents Saying Service Would make it Easier for Respondent to Bicycle		
	0 bike Trips	1 to 5 Trips	6 or More Trips
• Can't / won't bicycle	27%	0%	0%
• **Bike lanes on streets**	55%	**89%**	**96%**
• **Bike trails/connections to bike trails**	50%	**79%**	**80%**
• Information on safe bicycle routes	20%	23%	16%
• Lighting on bike paths / bike lanes	12%	17%	**22%**
• **Bike share / bike rentals**	**19%**	7%	7%
• **Bike lockers / racks**	9%	**18%**	**28%**
• **Vehicle driver education**	2%	6%	**13%**
• Help finding bike buddies	2%	2%	4%

Awareness and Use of Local Transportation Programs

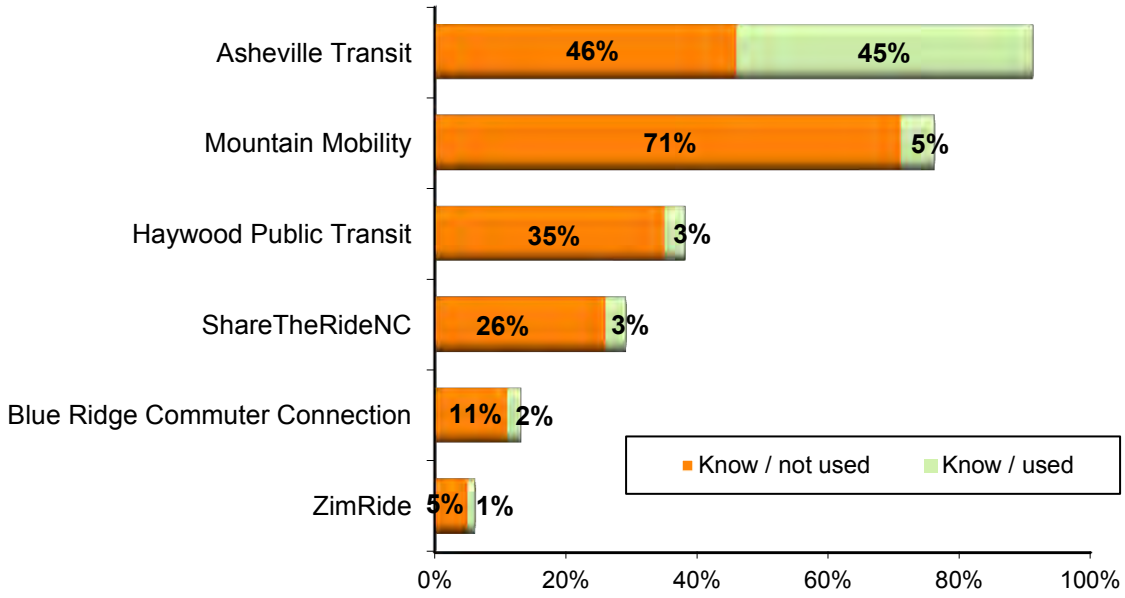
Know of Regional Transportation Information Service Organizations

Next, respondents were asked if they were aware of and if they had used services from six organizations that provide transportation information to residents of Western North Carolina. (Figure 25)

Service Awareness – The three transit operators in the list had the highest name recognition. More than nine in ten (91%) respondents had heard of Asheville Transit and 76% knew of Mountain Mobility. About four in ten (38%) were aware of Haywood Public Transit. Three in ten (29%) knew of ShareTheRideNC, which helps residents find carpool and vanpool partners. About 13% had heard of Blue Ridge Commuter Connections and six percent were aware of ZimRide, a ridematch service that operates primarily on university campuses.

Service awareness generally was very consistent across the three geographic areas that have been presented throughout this report: Asheville, Buncombe County outside Asheville, and Outside Buncombe County. The only services that had higher awareness in a geographic area were Mountain Mobility, which was known to 81% of Asheville respondents and 84% of Buncombe County respondents, but only 54% of respondents outside Buncombe, and Haywood Public Transit, which was known to 64% of respondents Outside Buncombe County, compared with about three in ten respondents in Asheville (29%) and other parts of Buncombe County (35%). Since these two organizations provide services only in limited areas, the lower level of awareness outside their service areas is reasonable.

Figure 25
Transportation Information Service Organizations
(n = 395)



Use of Services – Figure 25 also shows the percentages of respondents who said they had used each of the services. Nearly half (45%) of respondents had used Asheville Transit. Use of all the other programs was quite low; between two and five percent of respondents indicated that they had used services from the other organizations. Use of services also was consistent across the three geographic sub-areas, with the exception of Asheville Transit and Haywood Public Transit. Sixty percent of Asheville respondents said they had used Asheville Transit, compared with 39% of respondents who live in Buncombe County outside Asheville and 13% of respondents who live outside Buncombe County. And use of Haywood Public Transit was almost exclusively among respondents who live outside Buncombe County.

Services Received from ShareTheRideNC and Blue Ridge Commuter Center – It was assumed that the two organizations that offer commute ridematching assistance, ShareTheRideNC and Blue Ridge Commuter Connection, might be better known and more widely used by employed respondents and respondents who used alternative modes to get to work. The data showed no significant differences in awareness of these two services by either employment status or respondents' commute mode. But use of the services was almost exclusively among employed respondents.

Only 17 of the total 411 respondents mentioned that they had used either of these two services. Of these respondents, nine received help finding carpool or vanpool partners, four used transit information, and two received information on bicycle routes. These respondents were asked if they had taken any actions to try to change their travel after receiving the services. About seven in ten of the respondents said they did take some action; 35% started or tried a new alternative mode and the remaining respondents sought more travel information. About half of the respondents who took an action after receiving the services said they would not have been likely to take this action without the service.

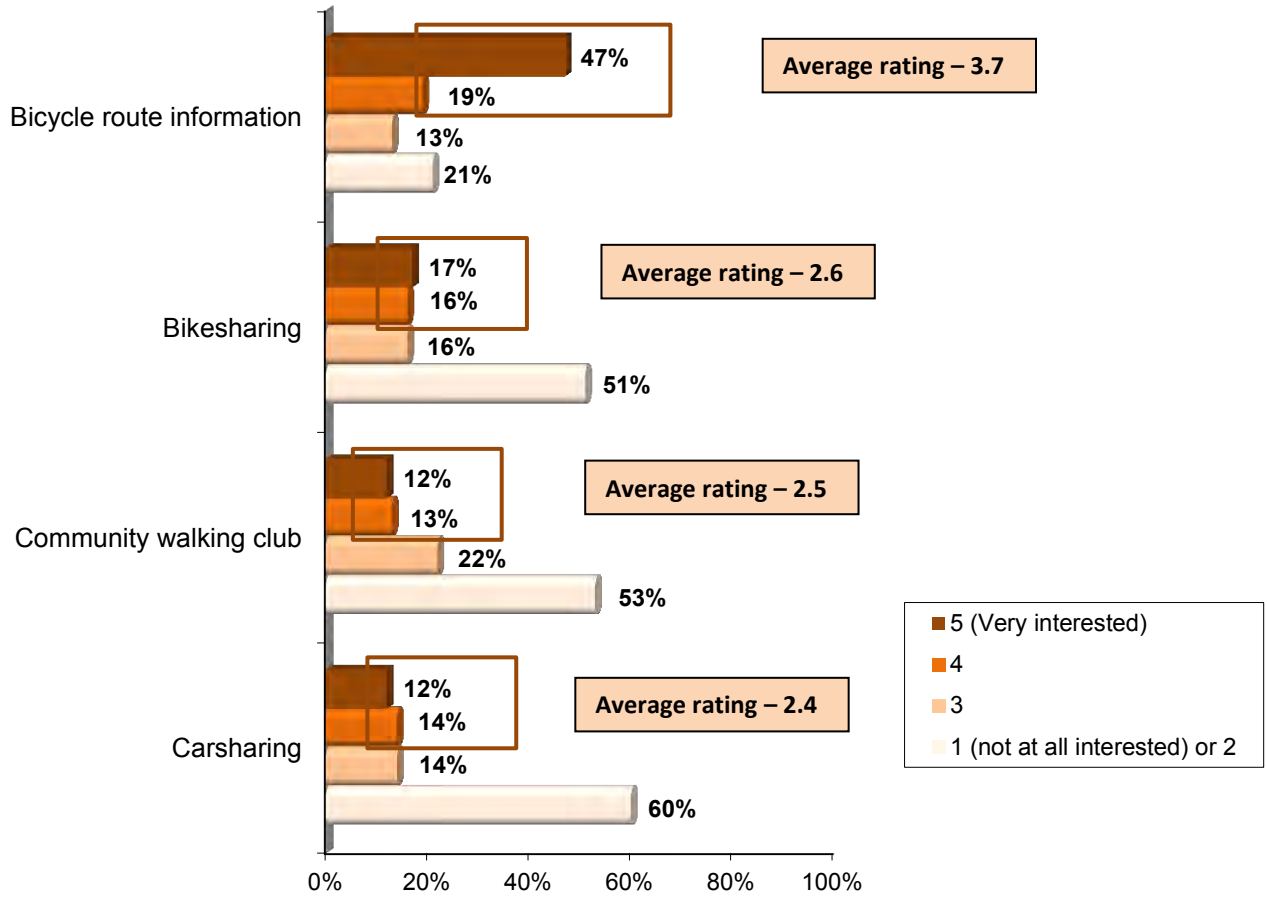
Interest in New Transportation Information Services

Finally, the survey asked respondents to rate their interest in four transportation information services that might be initiated in respondents' home areas:

- Carsharing – short-term car rental for registered members
- Bikesharing – short-term bicycle rental for registered members
- Bicycle route information
- Community walking "club"

Respondents reported the greatest interest in bicycle route information. Two-thirds gave this service a rating of 4 or 5 on a 5-point scale in which 1 meant "not at all interested" and 5 meant "very interested." The average rating for this service was 3.7 (Figure 26) Ratings for the other three services were very similar. About a third (33%) of respondents reported interest in bikesharing (average rating of 2.6) and about a quarter reported interest in community walking club (average rating of 2.5) and carsharing (average rating of 2.4).

Figure 26
Interest in New Transportation Services
(n = 382)



Interest in New Services by Residence Location – Interest in both bicycle route information and carsharing was greatest among Asheville respondents. (Table 10) They gave bicycle route information an average rating of 4.1, well above the 3.4 and 3.2 average ratings of respondents from the other two geographic sub-areas. And Asheville residents rated their interest in carsharing as a 2.7, substantially higher than the 2.0 and 1.9 average ratings from respondents in Buncombe County outside Asheville and Outside Buncombe County. Interest in bikesharing and community walking club was essentially the same across the three geographic areas.

The higher carshare rating for Asheville respondents likely is related to their lower car availability and lower incomes. One in ten (11%) Asheville respondents do not have a personal vehicle available for regular use, compared with just four percent of respondents who live outside Asheville. And 57% of Asheville respondents have household incomes of under $60,000, compared with 36% of respondents who live elsewhere in the region.

Table 10
Interest in New Transportation Services – Average Rating By Residence Location
Scale of 1 (Not at all interested) to 5 (Very interested)

Transportation Information Service	All Respondents (n = 382)	Asheville Residents (n = 210)	Buncombe Co. Outside Asheville (n = 95)	Outside Buncombe County (n = 76)
Bicycle route information	3.7	**4.1**	3.4	3.2
Bikesharing	2.6	2.8	2.4	2.5
Community walking club	2.5	2.4	2.4	2.6
Carsharing	2.4	**2.7**	2.0	1.9

(Statistical differences noted with orange highlighting)

Worksite Services

Another section of the survey inquired about the availability of commute assistance services at respondents' workplaces and charges employees paid to park at work. It is important to reiterate that the results presented for these questions probably are not representative of results for the region overall. The survey invitation outreach likely reached a disproportionate share of employers that participate in commute information programs and that promote alternative modes to employees at a higher rate than do employers region-wide.

Worksite Parking Charges

Ninety-two percent of employed respondents said they could park at work for free. The remaining eight percent said they pay or would pay to park if they drive to work. Four percent pay between $1 and $24 per month, two percent pay between $25 and $49 per month, and two percent pay $50 or more. Parking charges are concentrated among employees who work in Asheville. Twelve percent of respondents who work in Asheville pay a parking fee, compared with three percent of employees who work in other locations.

Worksite Commute Services / Benefits Available and Used

Respondents who are employed were shown a list of alternative mode assistance services and asked which services are available at their worksites and which services they have used. Slightly over half (54%) of respondents said their employer offer one or more incentives or support services.

The percentages of individual services available are shown in Figure 27. The most commonly offered services are secure parking for bicycles, cited as available by 43% of respondents, and transit route/schedule/fare information, which was mentioned by 37% of respondents. About a quarter (28%) said their employers offer bicycle/walking information and two in ten said showers/personal lockers (22%) and help finding carpool or vanpool partners (22%) are offered. Only a small share of respondents said the employer offers a financial incentive: 12% mentioned a transit subsidy, seven percent said their employer offers drawings or contests with prizes for employees who don't drive alone to work, and three percent of respondents cited a carpool or vanpool incentive.

Figure 27
Availability and Use of Commute Services / Benefits at Worksite
(n = 231; multiple responses permitted)
(Note that scale extends only to 60% to highlight results)

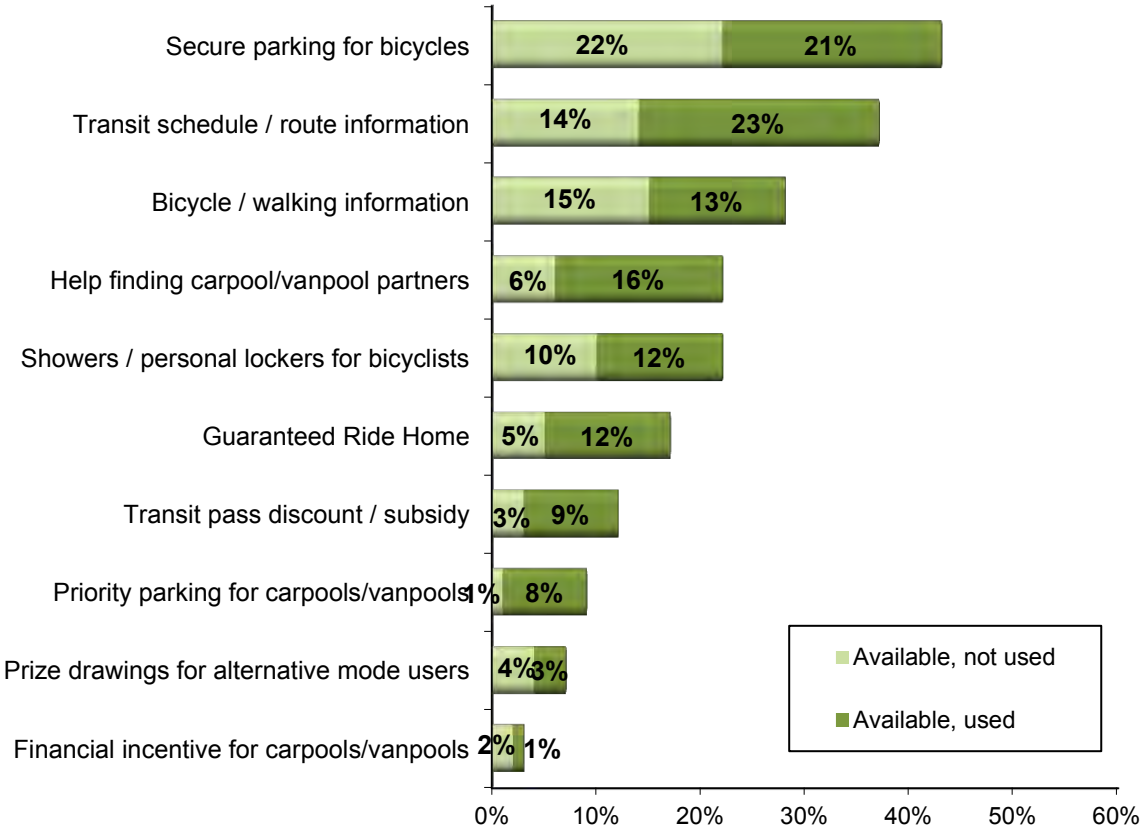


Figure 27 also shows the percentage of employees who used each service. Most services had been used by at least half of the respondents who said the service is available. Two in ten (21%) respondents had used secure bicycle parking and a similar percentage (23%) had used transit schedule/route information provided by the

employer. Slightly smaller shares of respondents used help finding carpool/vanpool partners (16%), bicycle/walking information (13%), showers/personal lockers for bicyclists (12%), and Guaranteed Ride Home.

Worksite-based Commute Services by Work Location – Commute services are not equally available throughout the region. More than six in ten (63%) respondents who work in Asheville said they have access to commute services at work, compared with 52% of respondents who work in Buncombe County outside Asheville, and 42% of respondents who work outside Buncombe County.

Table 11 presents the availability of each of the 10 individual services for worksites in these three areas. Asheville workers have substantially greater access to seven of the ten services, with particularly large variation in availability of bicycle parking, transit schedules, and ridematching. Only three services, bicycle/walking information, showers/personal lockers for bicyclists, and carpool/vanpool incentives are similarly available in all three areas.

Table 11
Commuter Services/Benefits Offered at Worksites by Work Location

Commute Information Service	Work in Asheville (n = 144)	Work in Buncombe Co. Outside Asheville (n = 51)	Work Outside Buncombe County (n = 49)
Any commute service offered	**63%**	**52%**	**42%**
Services Offered			
Secure parking for bicycles	**53%**	27%	27%
Transit schedule / route information	**45%**	30%	20%
Bicycle / walking information	32%	23%	22%
Help finding carpool/vanpool partners	**28%**	14%	12%
Showers / personal lockers for bicyclists	24%	22%	14%
Guaranteed Ride Home	**22%**	17%	5%
Financial incentive for bus riders	**15%**	12%	0%
Priority parking for carpools/vanpools	**12%**	6%	4%
Drawings/contests for alternative mode users	**9%**	4%	4%
Financial incentive for carpools/vanpools	4%	2%	2%

(Statistical differences noted with orange highlighting)

Interest in New Worksite Services

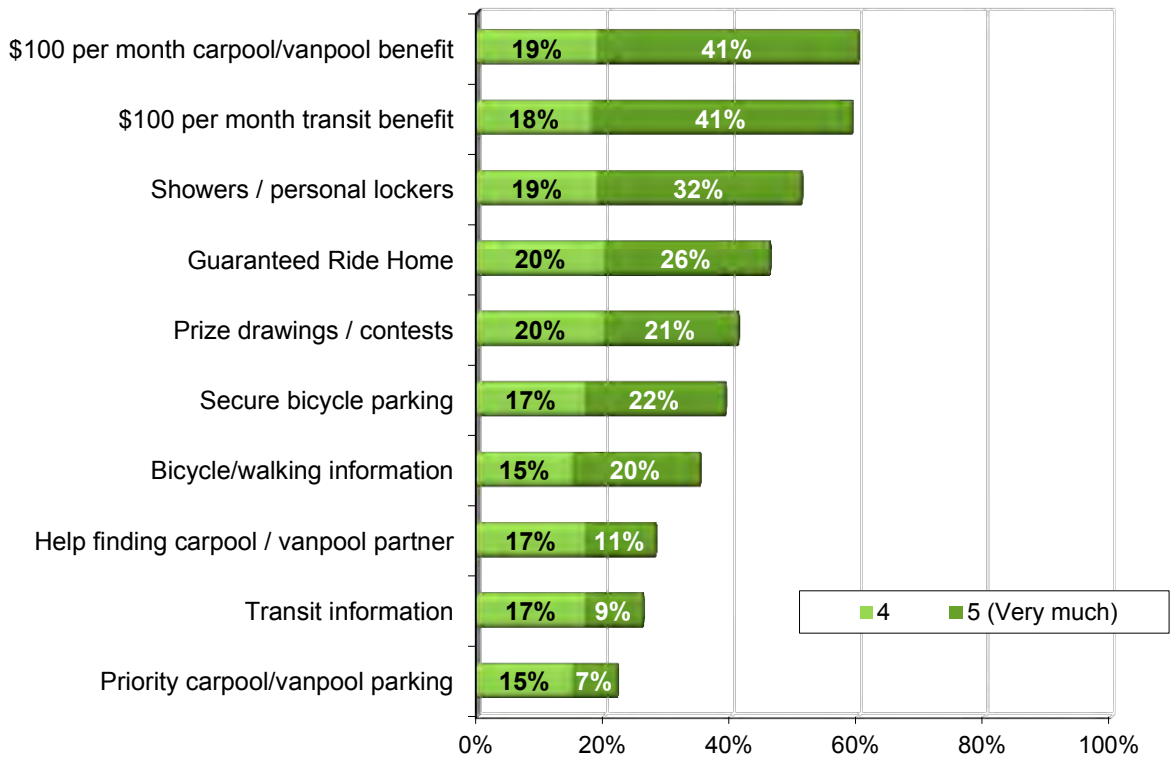
Respondents who said that one or more of the services listed in Figure 28 is not available were asked how much these services would motivate them to start or increase use of carpool, vanpool, bus, or bicycle for their trip to work, if the service was offered.

As shown in Figure 28, several services appear to offer potential to increase alternative mode use. Not surprisingly, financial incentives topped the list; 60% of respondents whose employers do not offer a carpool subsidy said a $100 per month subsidy would encourage them to start or increase carpooling and 59% said a $100 per month transit subsidy would influence them to use transit. In both cases, 41% of respondents said the service would "very much" encourage them to make the mode change.

But several non-financial services also were well-rated. About half of respondents who do not have access to showers/personal lockers (51%) or Guaranteed Ride Home (46%) said these services would influence them to use alternative modes. Prize drawings (41%), secure bicycle parking (39%), and bicycle/walking information (35%) were cited as motivating by about four in ten respondents. The remaining three services were named by about a quarter of respondents: ridematching assistance (28%), transit information (26%), and priority parking for carpools and vanpools (22%).

Figure 28
Commute Service Would Encourage Respondent to Start or Increase Use of Alternative Modes

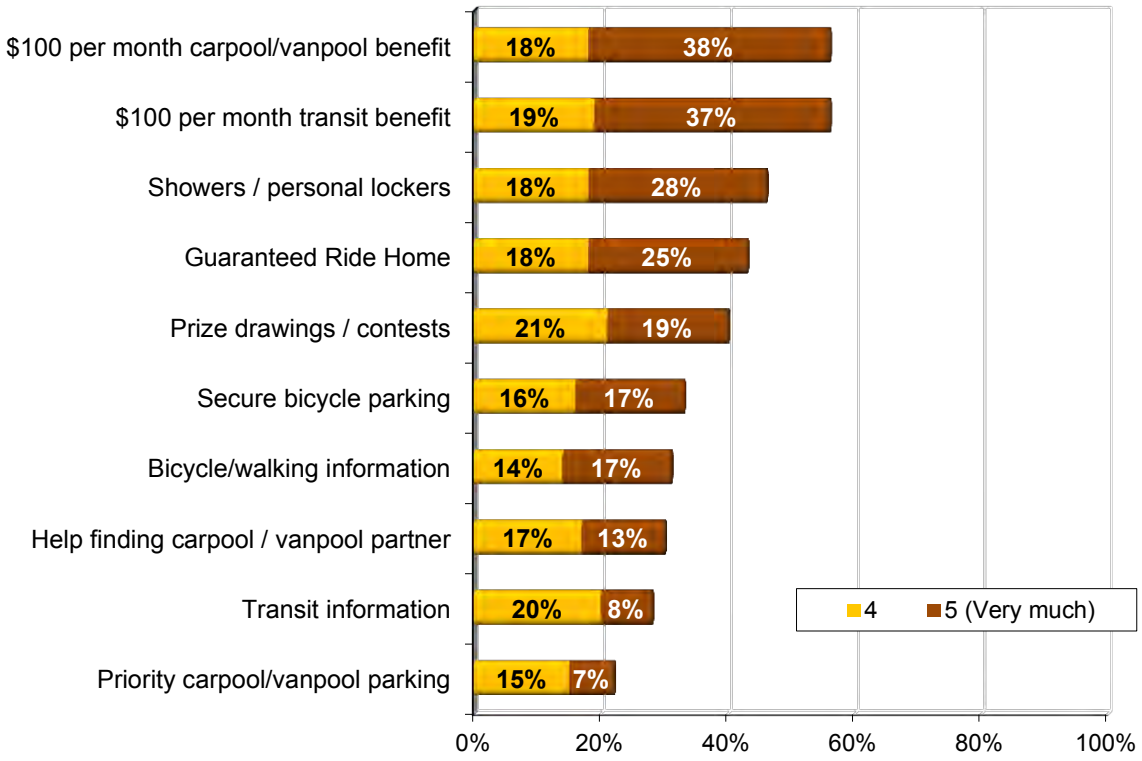
(Carpool benefit n = 260; Transit benefit n = 248; GRH n = 229, Showers/personal lockers n = 211, Prize drawings n = 250; Secure bicycle parking n = 168, Bike/walk info n = 201, Help finding carpool/vanpool partner n = 221; Transit information n = 176, Reserved parking n = 241)



Interest in Services Among Drive Alone Commuters – Because any new services would primarily be targeted to commuters who drive alone, the analysis also examined interest in the services among this group of respondents. Figure 29 shows these results, with the services presented in the same order as for Figure 28, from highest overall interest to lowest. The order of interest is identical for drive alone commuters and for all of the services. Additionally, the percentage of drive respondents who said the service would encourage them to start or increase use of an alternative mode is within a few percentage points of the results for respondents overall.

Figure 29
Commute Service Would Encourage Respondent to Start or Increase Use of Alternative Modes: Respondents who Drive Alone to Work

(Carpool benefit n = 210; Transit benefit n = 201; GRH n = 190, Showers/personal lockers n = 175, Prize drawings n = 206; Secure bicycle parking n = 143, Bike/walk info n = 168, Help finding carpool/vanpool partner n = 184, Transit information n = 145, Reserved parking n = 196)



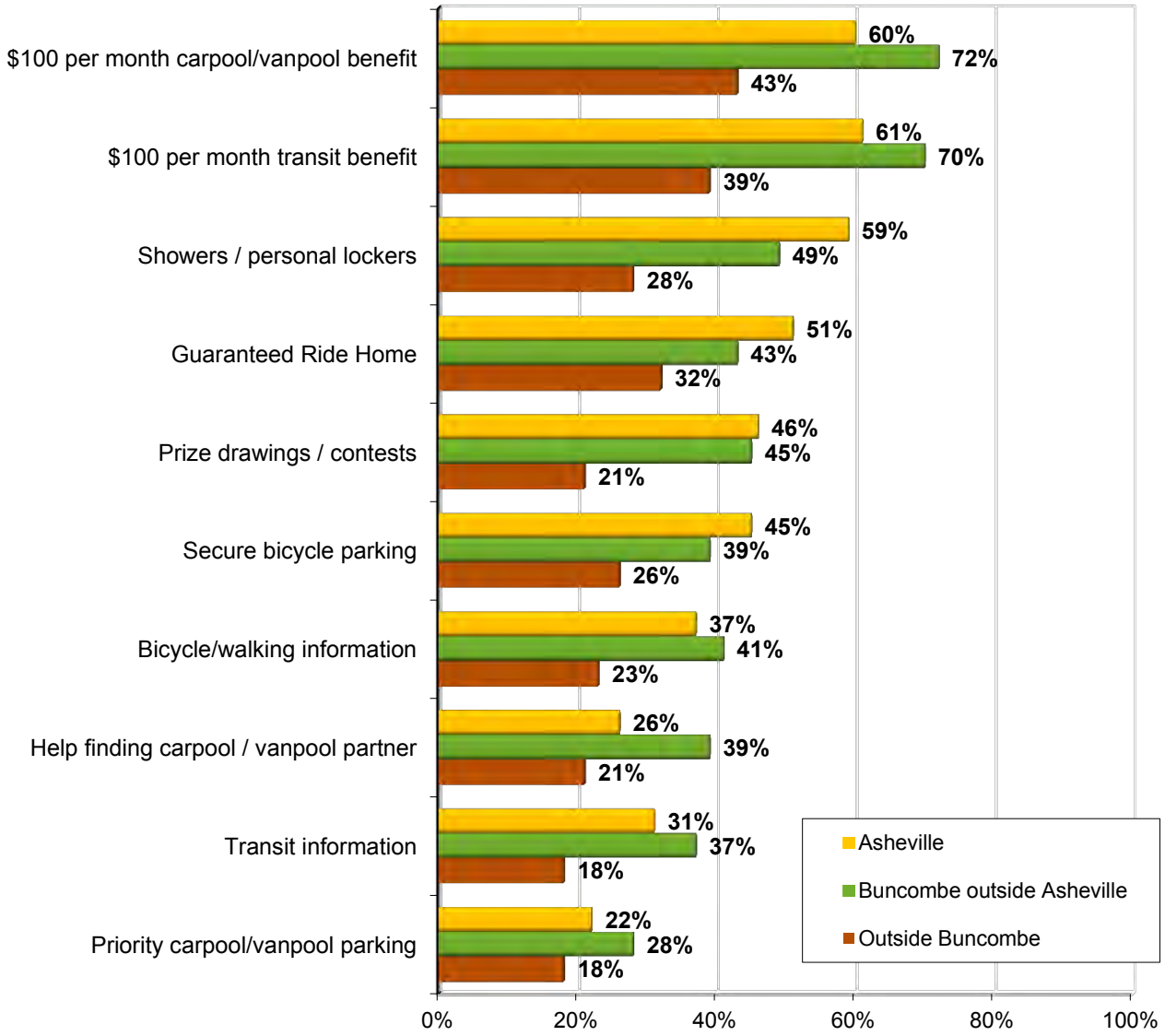
Interest in Services by Work Location – Figure 30 shows interest in worksite services for respondents by respondents work location. Again, the services are presented in the order for all respondents region-wide, from highest overall interest to lowest. Respondents who work in Asheville or in other parts of Buncombe County were much more likely to say that the commute services would influence their commute choice than were respondents who work outside Buncombe County. Although the Asheville and Buncombe Outside Asheville ratings appear to be different, the differences are not statistically significant.

Figure 30
Commute Service Would Encourage Respondent to Start or Increase Use of Alternative Modes: By Respondents' Work Location
Percentage Giving Rating of 4 or 5 (Very much)

(Asheville: Carpool benefit n = 156; Transit benefit n = 145; GRH n = 131, Showers/ lockers n = 122, Prize drawings n = 146; Bicycle parking n = 83, Bike/walk info n = 112, Help finding carpool/vanpool partner n = 121, Transit info n = 95, Reserved parking n = 137)

(Buncombe outside Asheville: Carpool benefit n = 53; Transit benefit n = 50; GRH n = 49, Showers/ lockers n = 45, Prize drawings n = 55, Bicycle parking n = 46, Bike/walk info n = 44, Help finding carpool/vanpool partner n = 51, Transit info n = 41, Reserved parking n = 54)

(Outside Buncombe: Carpool benefit n = 49; Transit benefit n = 51; GRH n = 47, Showers/lockers n = 43, Prize drawings n = 47, Bicycle parking n = 38, Bike/walk info n = 43, Help finding carpool/vanpool partner n = 47, Transit info n = 40, Reserved parking n = 49)



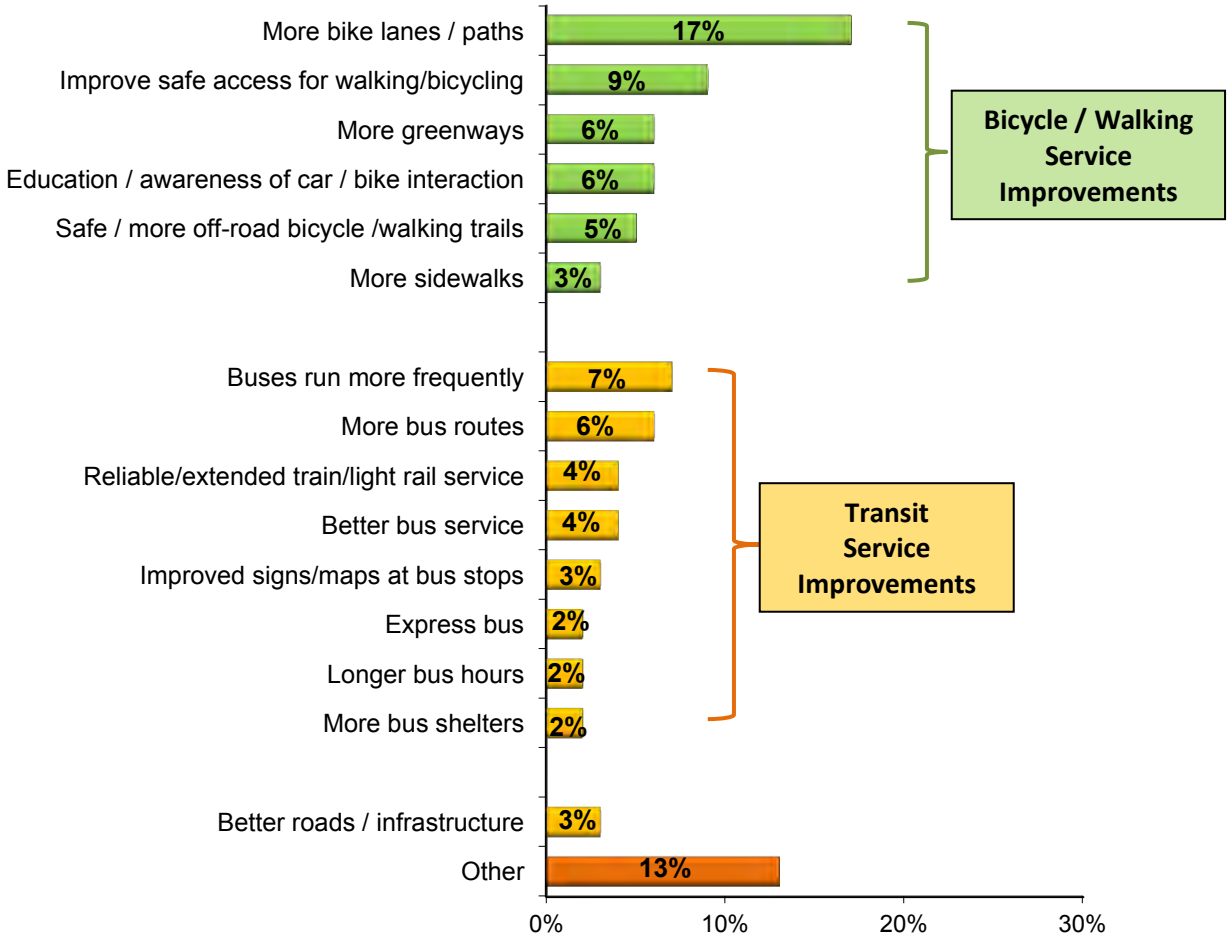
Desired Improvements

The final question in the survey offered respondents an opportunity to provide recommendations for ways to improve the western North Carolina region's transportation system. (Figure 31) About 45% of respondents wrote-in a comment. More than eight in ten comments were related to either bicycle/walking improvements or transit improvements. Three percent of comments focused on road or highway infrastructure and 13% were on other topics.

Bicycle / Walking Suggestions

About a third (37%) of all respondents made a suggestion about bicycle / walking facilities or services. Seventeen percent mentioned the need for more bike lanes or paths and nine percent wanted to see bicycle and walking safety improvements. Five to six percent of respondents mentioned a need for more greenways, education for drivers about bicycles and vehicles sharing the road, and off-road bicycle / walking trails. It is important to reiterate that the survey sample included a large contingent of respondents who were regular bicycle riders and member of bicycle clubs and interest groups, thus the predominance of these recommendations likely overstates the region-wide perception of the need for these improvements.

Figure 31
Recommended Improvements in Western North Carolina Transportation System
(n = 4111; multiple responses permitted)



A sample of specific bicycle comments includes:

- *"ANY repaving or widening of major roads in our communities should include bike lanes for the safety of all and to promote exercise and recreation in our communities. It can also have a significant economic development impact by drawing more tourists to bicycle friendly communities."*
- *"Bike lanes and sidewalks in East Asheville that actually extend into the neighborhoods."*
- *"Bike lanes or better shoulders on major roads, both rural and urban."*
- *"Safe off-road bicycling trails along reasonable commuter route."*
- *"Bike lanes may be beneficial around universities and schools where they may actually see use."*
- *"Create more safe ways for bicycles - I would bike to work almost every day if I felt safe."*
- *"Make it easier to get to all parts of Asheville by bicycle with a combination of bike trails, more complete streets, traffic signals that detect bicycles, and education."*
- *"More bike lanes between neighborhoods/areas of Asheville or wider lanes on most roads to allow bikers to share roads with cars safely (not possible in most areas)".*
- *"I believe it is important to develop connections such as sidewalks to bus stops so individuals can easily use the bus and for many of our main streets to have bike lanes, or paved shoulders so individuals will feel there is a place for them to be when on the bike. None of our main roads outside of the center city which have 45mph have a comfortable place for the average individual."*
- *"We desperately need better connectivity between existing bike lanes, and need more new bike lanes especially on some of the main thoroughfares in downtown Asheville."*

Transit Service Suggestions

Figure 31 also showed specific recommendations for transit improvements. Two in ten (21%) respondents mentioned a transit service recommendation. The most common suggestions in this category were for more frequent service (7%), more bus routes / routes in areas that are currently unserved by transit (6%), train / light rail service (4%), and better (higher quality) bus service (4%). Respondents also mentioned the need for improved signage at bus stops, express bus, longer bus hours of service, and more bus shelters.

A sample of transit-related suggestions includes:

- *"Bus schedules that are reliable and transportation for the elderly that is easy, reliable and does not make them wait."*
- *"Bus system needs to run on Sundays and holidays. I appreciate that service has been increased in frequency and/or extended on some routes, [but] many people still can't depend on the bus as a primary form of transportation."*
- *"Buses and bicycles seem to be the best place to start because buses are public transit mode and bicycles are a personal transport mode, a combination of improvement of both of them seems to pose strong possibilities for an overall more fluid system."*
- *"I would love to take the bus to both work and school, however, there need to be more convenient, direct routes and more accessible time schedules (more stops than just one every hour)."*
- *"In town shuttle. Reserve traditional busses for longer trips. Have the in town shuttles travel from major locations around town often. Have them run from 2 miles out from city center. Less cost would be great, but not necessary."*

- *"I would like bus routes to be easier to access and easier to know exactly where the bus stops are."*
- *"More frequent buses and better options for transfers. LOVE the new routes, definitely a step in the right direction."*
- *"More information AT BUS STOPS as to routes & schedule, especially when next bus can be expected."*
- *Better options for those who live outside of Buncombe, but work in Asheville."*
- *Please make an express line between Hendersonville and Asheville that would offer a time-competitive option to personal vehicles."*
- *MOST IMPORTANTLY the bus schedule in AVL needs to be more frequent. The bus comes by my house every 1.5 hours but the drive is only about 10 minutes. I just can't commit to taking an extra THREE hours out of my day to ride the bus."*
- *We would definitely use the bus more often if it passed our stop more often and if it didn't take forever to go through the hub and out to another part of town. We have personal vehicles, but for sheer environmental concern and traffic-related issues, we'd love to take the bus more often!"*
- *I'm not sure this is what you are looking for, but reliable train service to the rest of the state is something I think this community needs and should advocate…"*

Types of Suggestions Offered by Sub-group Characteristic

Finally, Figure 12 shows percentages of respondents in different survey sub-groups who made any suggestion and the percentages who made suggestions about transit improvements and bike/walk improvements. This analysis was intended to identify population subgroups that might be targeted for future travel service outreach. Several sub-groups of respondents were more likely than others to make suggestions and to make suggestions on specific topics.

- Residence Location – Asheville residents were no more likely than were other residents to offer suggestions, but they were much more likely to make suggestions about bicycling/walking (43%) than were residents who live Outside Buncombe County (28%).
- Satisfaction with Regional Transportation Options – Residents who are dissatisfied with regional transportation options were more likely to make any suggestions than were more satisfied respondents. They also were more likely to make suggestions for both transit and bike/walk improvements.
- Satisfaction with Trip to Work – A higher share of residents who are dissatisfied with their commute to work made improvement suggestions and made bicycle/walking suggestions. But they made suggestions for transit improvements at about the same rate as did respondents who were more satisfied with their trip to work.
- Primary Commute Mode – Nearly six in ten respondent who used an alternative mode for their commute made a suggestion, compared with 39% of respondents who drive alone to work. Alternative mode users offered both transit and bicycle/walk suggestions at higher rates than did drive alone commuters.
- Frequency of Bicycle Use – A higher share of respondents who said they had made even one bicycle trip in the past month gave suggestions than did respondents who had not made bicycle trips. Frequent riders were particularly likely to offer suggestions. As expected, they were most likely to make suggestions about bicycle/walking improvements; they did not make transit suggestions at a higher rate than did non-bicyclists.

Table 12
Suggestions Offered by Sub-group Characteristic:
Any Suggestions, Transit Suggestions, Bike/Walk Suggestions

Sub-group Characteristics	Any Suggestions	Transit Suggestions	Bike/Walk Suggestions
Residence Location			
Asheville (n=221)	47%	24%	**43%**
Buncombe County outside Asheville (n=102)	43%	15%	33%
Outside Buncombe County (n=88)	42%	22%	28%
Satisfaction with Regional Options			
Rating of 1 or 2 (Dissatisfied) (n=209)	**55%**	**30%**	**45%**
Rating of 3 (n=131)	42%	15%	37%
Rating of 4 or 5 (Satisfied) (n=60)	22%	8%	18%
Satisfaction with Trip to Work			
Rating of 1 or 2 (Dissatisfied) (n=41)	**56%**	24%	**49%**
Rating of 3 (n=84)	46%	30%	38%
Rating of 4 or 5 (Satisfied) (n=180)	38%	17%	33%
Primary Commute Mode			
Alternative mode (n=57)	**58%**	**32%**	**49%**
Drive alone (n=248)	39%	19%	33%
Bicycle Trips in Past Month			
0 trips (n=258)	38%	23%	27%
1 to 5 trips (n=82)	**51%**	18%	**52%**
6 or more trips (n=69)	**64%**	20%	**61%**

(Statistical differences noted with orange highlighting)

Appendix 1 – Survey Questionnaire

INTRODUCTION

The Land of Sky Regional Council and the French Broad River Metropolitan Planning Organization are conducting this online survey about transportation issues and services in the City of Asheville and Buncombe, Haywood, and Henderson counties. The results of the survey will be used to identify residents' and employees' travel needs and develop new services to make it easier to travel around the region. The survey will take about 10 minutes. Your answers will be completely confidential.

People who complete the survey will be entered into a drawing for three $50 grocery gift cards. To participate in the drawing, please provide your name and contact information at the end of the survey. Thank you.

SCREENING QUESTIONS

1 Are you 18 years or older?

1 Yes (**CONTINUE**)
2 No (**THANK AND TERMINATE)**

2 Where do you live?

1 City of Asheville
2 Buncombe County, but outside City of Asheville
3 Haywood County
4 Hendersonville
5 Henderson County, but outside Hendersonville
6 Madison County
7 Other (specify) _____

DEFINE HOME (Home location) – ALLOW ONE RESPONSE ONLY
DO NOT SHOW ON SCREEN – CLASSIFICATION ONLY

IF Q2 = 1, SET HOME = 1
IF Q2 = 4, SET HOME = 2
IF Q2 = 2, 3, 5, 6, OR 7, SET HOME = 3
IF Q2 = 99, SET HOME = 9

1 Asheville
2 Hendersonville
3 Region, outside Asheville, Hendersonville
9 Unknown

3 Which of the following best describes your current employment status?

1 Employed full-time (32 hours or more per week)
2 Employed part-time (less than 32 hours per week)
3 Full-time student
4 Looking for work, but not currently employed
5 Retired, keeping house, otherwise not employed
6 Other **(SPECIFY)** _____

DEFINE EMPL (Employment status) – ALLOW ONE RESPONSE ONLY
DO NOT SHOW ON SCREEN – CLASSIFICATION ONLY

IF Q3 = 1 OR 2, EMPL = 1
IF Q3 = 3, 4, 5, 6, OR 99, EMPL = 2

1 Employed
2 Not employed, unknown if employed

IF HOME = 1, 2 OR 3 AND EMPL = 1, CONTINUE
IF HOME = 1, 2, OR 3 AND EMPL = 2, SKIP TO Q5
IF HOME = 9 AND EMPL = 2, THANK AND TERMINATE

4 Where is your workplace located? If you work in multiple locations, check the location where you work most often.

1 City of Asheville
2 Buncombe County, but outside City of Asheville
3 Haywood County
4 Hendersonville
5 Henderson County, but outside Hendersonville
6 Madison County
7 Other (specify) _____
99 Left blank

DEFINE WORK (Work location) – ALLOW ONE RESPONSE ONLY
DO NOT SHOW ON SCREEN – CLASSIFICATION ONLY

IF Q4 = 1, SET WORK = 1
IF Q4 = 4, SET WORK = 2
IF Q4 = 2, 3, 5, 6, OR 7, SET WORK = 3
IF Q4 = 99, SET HOME = 9

1 Asheville
2 Hendersonville
3 Region, outside Asheville, Hendersonville
9 Unknown

IF HOME = 9 AND WORK = 9, THANK AND TERMINATE

TRANSPORTATION SATISFACTION

The next few questions ask your opinions about transportation options in the Western North Carolina region. "Transportation options" means all the services available to travel around the region, including roads, buses, and services for bicycling, walking, and carpooling.

5 How satisfied are you, overall, with transportation options in the Western North Carolina region?

Satisfaction with region's transportation options					
Not satisfied at all				**Very satisfied**	**Don't know**
1	2	3	4	5	9

6 How satisfied are you with the transportation options in the area where you live?

Satisfaction with home area transportation options					
Not satisfied at all				**Very satisfied**	**Don't know**
1	2	3	4	5	9

7 In your opinion, how important is it for transportation agencies in Western North Carolina to invest in each of the following transportation improvements?

ROTATE RESPONSES 1-6

Type of improvement	**Importance to Invest in improvements**					
	Not at all important 1	**2**	**3**	**4**	**Very important 5**	**Don't know**
1 Improve or expand bus service	1	2	3	4	5	9
2 Build or expand highways	1	2	3	4	5	9
3 Develop more park-and-ride lots	1	2	3	4	5	9
4 Expand bicycle trails and lanes	1	2	3	4	5	9
5 Provide information and services to make it easier to carpool / vanpool	1	2	3	4	5	9
6 Provide information and services to make it easier to use a bus	1	2	3	4	5	9

8 How important is each of the following features to you when choosing transportation options to travel around Western North Carolina?

ALLOW RESPONDENTS TO SKIP INDIVIDUAL FEATURES
ROTATE FEATURES

Transportation option features	**Importance to you**					
	Not at all important 1	**2**	**3**	**4**	**Very important 5**	**Don't know 9**
1 Cost	1	2	3	4	5	9
2 Convenience	1	2	3	4	5	9
3 Safety	1	2	3	4	5	9
4 Time needed to make trips	1	2	3	4	5	9
5 Comfort	1	2	3	4	5	9

9 In general, how would you rate bus service in Western North Carolina on each of the following features? Please use a scale from 1 to 5, where 1 means "poor" and 5 means "excellent.

ALLOW RESPONDENTS TO SKIP INDIVIDUAL FEATURES
ROTATE FEATURES

Service Feature	Rating for bus service					
	Poor 1	**2**	**3**	**4**	**Excellent 5**	**Don't know**
1 Cost per mile	1	2	3	4	5	9
2 Convenience	1	2	3	4	5	9
3 Safety	1	2	3	4	5	9
4 Time needed to make trips	1	2	3	4	5	9
5 Comfort	1	2	3	4	5	9
6 Frequency of bus service	1	2	3	4	5	9

IF EMPL = 1, CONTINUE WITH Q10
IF EMPL = 2, SKIP TO Q20

CURRENT COMMUTE PATTERNS

Next, please answer the following questions about your travel to and from work. If you have more than one job, answer for your primary job.

10 In a typical week, how many days are you assigned to work? If the number of days varies from one week to another, indicate the number that is most typical.

1 1
2 2
3 3
4 4
5 5
6 6
7 7
8 Alternate 4 days one week and 5 days the next week
99 Left blank

IF Q3 = 2, AUTOCODE Q11 = 6, THEN SKIP TO DEFINE WKDAYS
IF Q10 = 8, AUTOCODE Q11 = 4, THEN SKIP TO DEFINE WKDAYS
IF Q10 = 5, 6, OR 7, AUTOCODE Q11 = 1, THEN SKIP TO DEFINE WKDAYS
IF Q3 = 1 AND Q10 = 1, 2, 3, 4, OR 99, ASK Q11

11 Which of the following best describes your assigned work schedule?

(SHOW RESPONSES 1 – 5 ON SCREEN, DO NOT SHOW RESPONSE 6)
1 Work 5 or more days per week, 32 or more hours per week
2 Work 4 10-hour days per week (4/40 compressed work schedule)
3 Work 3 12-hour days per week (9/80 compressed work schedule)
4 Work 4 days one week and 5 days the next week (9/80 compressed work schedule)
5 Other schedule (specify) _____
6 Work part-time **(AUTOCODE ONLY, DO NOT SHOW ON SCREEN)**
99 Left blank

DEFINE WKDAYS (Work days) – ALLOW ONE RESPONSE ONLY
DO NOT SHOW ON SCREEN – CLASSIFICATION ONLY

IF Q10 = 1, 2, 3, 4, 5, 6, OR 7, SET WKDAYS = Q10
IF Q10 = 8, SET WKDAYS = 5
IF Q10 = 99 AND Q11 = 1, SET WKDAYS = 5
IF Q10 = 99 AND Q11 = 2, SET WKDAYS = 4
IF Q10 = 99 AND Q11 = 3, SET WKDAYS = 3
IF Q10 = 99 AND Q11 = 4, SET WKDAYS = 5
IF Q10 = 99 AND Q11 = 5 OR 99, SET WKDAYS = 99

12 In a typical week, how many work days do you use each of the following types of transportation to get to work? If you use more than one type on a single day, please count the type you use for the longest portion of your trip.

IF WKDAYS = 99 (unknown), ACCEPT ANY SUM OF Q12

IF WKDAYS = 1-7, CHECK THAT SUM OF Q12 DAYS = WKDAYS:
IF SUM OF Q12 > WKDAYS, SHOW PROMPT "You said you are assigned to work [WKDAYS] days per week. Please report only for these days and only one type of transportation for each day."
IF SUM OF Q12 < WKDAYS, SHOW PROMPT "You said you are assigned to work [WKDAYS] days per week. Please report your travel for all of these days."

Type of Transportation	Number of Days
1 Drive alone in a car, truck, SUV, motorcycle	
2 Ride a bus	
3 Carpool, (including dropped off)	
4 Vanpool with co-workers or others who work nearby	
5 Walk or run	
6 Bicycle	
7 Work at home (**entire work day** - telework or self-employed)	
8 Other _____	

IF Q12, response 7 (work at home) = 0, SKIP TO Q14
IF Q12, response 7 (work at home) > 0, ASK Q13

13 Which of the following best describes your situation on the days you work at home?

1 I work for an outside firm but telework from home all or some of my work days
2 I'm self-employed with my primary work location at home
3 Some other situation _____
9 Don't know

IF Q13 = 2, AUTOCODE Q14 = 9, THEN SKIP TO DEFINE TWSTAT
IF Q13 = 1 OR 3 AND Q12, response 7 = 5, 6, OR 7, AUTOCODE Q14 = 5, THEN SKIP TO DEFINE TWSTAT
IF Q13 = 1 OR 3 AND Q12, response 7 < 5, AUTOCODE Q14 = Q12, response 7, THEN SKIP TO DEFINE TWSTAT

14 How often do you telework, that is, how often do you work at home for an entire assigned work day, instead of traveling to your regular work place?

(SHOW RESPONSES 1 – 8 ON SCREEN – IN THE ORDER PRESENTED, DO NOT SHOW RESPONSE 9)

8 Never
7 Occasionally, but less than once per month
6 1 to 3 days per month
1 1 day per week
2 2 days per week
3 3 days per week
4 4 days per week
5 5 or more days per week
9 Self-employed, work at home **(AUTOCODE ONLY, DO NOT SHOW ON SCREEN)**

IF Q14 = 1, 2, 3, 4, 5, 6, 7, OR 9, SKIP TO TWSTAT
IF Q14 = 8, ASK Q15

15 Would you be interested in teleworking at least occasionally? **(ALLOW ONLY ONE RESPONSE)**

1 I cannot perform my job responsibilities at any location other than my main workplace
2 Yes, would like to telework one or more days per week
3 Yes, would like to telework less than one day per week
4 No, not interested
9 Don't know

DEFINE TWSTAT (Telework status) – ALLOW ONE RESPONSE ONLY
DO NOT SHOW ON SCREEN – CLASSIFICATION ONLY

IF Q13 = 2, TWSTAT = 8
IF Q13 = 1 AND Q10 = Q12, response 7, TWSTAT = 7
IF Q14 = 8 AND Q15 = 1, TWSTAT = 1
IF Q14 = 8 AND Q15 = 4, 9, OR 99, TWSTAT = 2
IF Q14 = 8 AND Q15 = 2 OR 3, TWSTAT = 3
IF Q14 = 6 OR 7, TWSTAT = 4
IF Q14 = 1 OR 2, TWSTAT = 5
IF Q14 = 3, 4 or 5, TWSTAT = 6

1 Not TW, job not appropriate
2 Not TW, not interested, don't know
3 Not TW, interested
4 TW, less than once per week
5 TW, 1 or 2 days per week
6 TW, 3 or more days per week
7 TW – telework all work days
8 Self-employed, work at home

DEFINE MODE DAYS (Mode days)
DO NOT SHOW ON SCREEN – CLASSIFICATION ONLY

IF TWSTAT = 8, SEDAYS = Q12, response 7
IF TWSTAT = 5, 6, OR 7, TWDAYS = Q12, response 7

DADAYS = Q12, response 1 (Drive alone)
BUDAYS = Q12, response 2 (Bus)
CPDAYS = Q12, response 3 (Carpool)
VPDAYS = Q12, response 4 (Vanpool)
WKDAYS = Q12, response 5 (Walk)
BKDAYS = Q12, response 6 (Bike)
OTDAYS = Q12, response 8 (Other)

DEFINE PRIMARY (Primary Mode) – ALLOW ONE RESPONSE ONLY
DO NOT SHOW ON SCREEN – CLASSIFICATION ONLY

SET PRIMARY = MODE WITH GREATEST NUMBER OF MODE DAYS
IF DADAYS = MAX, PRIMARY = 1 (Drive alone)
IF BUDAYS = MAX, PRIMARY = 2 (Bus)
IF CPDAYS = MAX, PRIMARY = 3 (Carpool
IF VPDAYS = MAX, PRIMARY = 4 (Vanpool)
IF WKDAYS = MAX, PRIMARY = 5 (Walk)
IF BKDAYS = MAX, PRIMARY = 6 (Bicycle)
IF TWDAYS = MAX, PRIMARY = 7 (Telework)
IF SEDAYS = MAX, PRIMARY = 8 (Self-employed/work at home)
IF OTDAYS = MAX, PRIMARY = 9 (Other)

IF PRIMARY = 7 (Telework), OR 8 (SE-WAH), SKIP TO Q20

16 How many miles is it from your home to your usual work location, one way?

Number of miles _____
999 Don't know

17 About how many minutes does your trip to work typically take? If the time varies, report what is most typical.

Number of minute _____
999 Don't know

18 Overall, how satisfied are you with your trip to work?

Satisfaction with trip to work					
Not satisfied at all				**Very satisfied**	**Don't know**
1	2	3	4	5	9

TRAVEL OPTIONS

20 About how far is it from your home to the nearest bus stop? If you're not sure, please give your best estimate.

1 Less than 1/2 mile (about 5 blocks)
2 1/2 mile to 1 mile (about 6-10 blocks)
3 More than 1 mile to 2 miles
4 More than 2 miles to 5 miles
4 More than 5 miles
9 Don't know

21 Which of the following bus services have you ever used, for any trip in the Western North Carolina region? **(ALLOW MULTIPLE RESPONSES FOR 1-8, DO NOT ALLOW MULTIPLES WITH 19)**

1 Asheville Transit / ART
2 Mountain Mobility
3 Haywood County Transit
4 Apple County Transit
5 The Link
6 Madison County Transportation Authority (MCTA)
7 Transylvania People Oriented Rural Transport
8 Other (specify) _____
19 Have not ever used any of these bus services for any trips

IF Q21 = 19, AUTOCODE Q22 = 1, THEN SKIP TO Q23

22 Thinking just about the past month, about how many times did you use any of these bus services?

1 0 – did not use any of these services in the past month
2 1 or 2 times
3 3 to 5 times
4 6 to 10 times
5 More than 10 times
9 Don't know / don't remember

23 In the past month, about how many times did you ride a bicycle for any trips, other than trips that were purely for exercise or recreation?

1 0 – did not make any trips by bicycle, other than exercise / recreation
2 1 or 2 times
3 3 to 5 times
4 6 to 10 times
5 More than 10 times
9 Don't know / don't remember

24 Which of the following facilities or services would encourage you or make it easier for you to make trips by bicycle? Please check up to three services. **(PERMIT UP TO THREE RESPONSES FOR 1-9. DO NOT ALLOW MULTIPLE RESPONSES FOR 77, 88, 99).**

1 Provide bikesharing or bike rentals
2 More bike trails or connections to bike trails
3 Bike lanes on streets
4 Information on bicycling routes
5 Lighting on bike paths or bike lanes
6 Bike lockers or racks
7 Classes on safe bicycling
8 Help me find "bike buddies" (people to ride with)
9 Other _____

77 Nothing would encourage me to ride a bicycle
88 I can't ride due to personal physical conditions
99 Don't know

AWARENESS AND USE OF LOCAL TRANSPORTATION PROGRAMS

25 Shown below are several organizations that provide transportation information to residents of Western North Carolina. For each organization, please indicate if…

- You have USED information from the organization
- You are aware of the organization, but have NOT used it
- You are NOT AWARE of the organization

ROTATE RESPONSES

Organization	1 Aware and Have used	2 Aware, have NOT used	3 Not aware
1 ShareTheRideNC			
2 Blue Ridge Commuter Connections			
3 Asheville Transit			
4 Mountain Mobility			
5 ZimRide			
6 Haywood Public Transit			

IF Q25 = 1 FOR ORGANIZATION 1 (ShareTheRide NC) OR ORGANIZATION 2 (Blue Ridge Commuter Connections), ASK Q26

IF Q25 = 2, 3, OR BLANK FOR ORGANIZATION 1 AND ORGANIZATION 2, SKIP TO Q29

26 Which of the following services have you used from either SharetheRideNC or Blue Ridge Commuter Services? **(ALLOW MULTIPLES FOR 1-5, DO NOT ALLOW MULTIPLES FOR 18 OR 19)**

1 Transit schedule, route, fare information
2 Carpool/vanpool information, Help finding carpool/vanpool partners
3 Telework information
4 Bicycle route information
5 Other (please describe _____)

18 Did not use any of these services **(SKIP TO Q29)**
19 Don't know **(SKIP TO Q29)**

IF Q26 = ANY OF 1-5, ASK Q27, OTHERWISE, SKIP TO Q29

27 After receiving these services, did you take any of the following actions to try to change how you travel around Western North Carolina? **(ALLOW MULTIPLES FOR 1-8, DO NOT ALLOW MULTIPLES FOR 77 OR 88)**

(IF EMPL = 1, SHOW RESPONSES 1, 2, 3, 4, 5, 6, 7, 8, 77, and 88)
(IF EMPL = 2, SHOW ONLY RESPONSES 4, 5, 6, 7, 8, 77, and 88)

1 Looked for a partner to carpool or vanpool to work **(SHOW ONLY IF EMPL = 1)**
2 Started carpooling or vanpooling to work **(SHOW ONLY IF EMPL = 1)**
3 Started teleworking **(SHOW ONLY IF EMPL = 1)**
4 Started bicycling or bicycle more often for any type of trip
5 Started walking or walk more often for any type of trip
6 Started riding a bus or ride a bus more often for any type of trip
7 Sought more information about travel options or services
8 Other (specify) _____
77 No, didn't take any of these actions (**SKIP TO Q29**)
88 Don't know (**SKIP TO Q29**)

IF Q27 = ANY OF 1-7, ASK Q28, OTHERWISE, SKIP TO Q29

28 If you had not received information or services from SharetheRideNC or Blue Ride Commuter Services, how likely would you have been to take this action?

1 Very likely
2 Somewhat likely
3 Not likely
9 Don't know

29 If the following transportation information or services were available in the area where you live, how interested would you be in using them?

ROTATE, ALLOW RESPONDENTS TO SKIP INDIVIDUAL SERVICES

Service or Benefit	Interest in service					
	1 – Not at all interested	2	3	4	5 – Very interested	9 Not sure
1 Carsharing – short-term car rental for registered members						
2 Bicycle route information						
3 Community walking "club"						
4 Bikesharing – short-term bicycle rental for registered members						

EMPLOYER SERVICES

INSTRUCTIONS BEFORE Q30
IF EMPL = 2, SKIP TO Q36
IF PRIMARY = 7, SKIP TO Q34
IF PRIMARY = 8, SKIP TO Q36

30 Listed below are services or benefits that your employer might offer to help with your trip to work. For each service or benefit, indicate if …

- the service is available and you have used it,
- it is available but you have NOT used it,
- it is not available, or
- you're not sure

ROTATE - ALLOW RESPONDENTS TO SKIP INDIVIDUAL RESPONSES

Service or Benefit	1 - Available and I have used it	2 -Available, but I have NOT used it	3 - Not available	9 - Not sure
1 Help finding carpool / vanpool partners				
2 Transit schedule or route information				
3 Bicycle/walking information				
4 Guaranteed Ride Home for employees who don't drive alone to work and who have a personal emergency during the work day				
5 Reserved or priority parking for carpools/vanpools				
6 Secure parking for bicycles				
7 Drawings or contests with prizes for employees who don't drive alone to work				
8 Personal lockers or showers for employees who bicycle to work				
9 Discounted transit pass or financial benefit for employees who ride buses to work				
10 Financial benefit for employees who carpool or vanpool to work				

IF ALL SERVICES IN Q30 ARE CODED AS 1 OR 2, SKIP TO Q32
IF ANY SERVICE IN Q30 IS CODED AS 3 OR 9, ASK Q31

31 If the following services were available at your work, how much would they encourage you to start or increase how often you use a carpool, vanpool, bus, or bicycle for your trip to work?

SHOW ONLY RESPONSES 1-10 FROM Q30 THAT WERE CODED AS 3 OR 9 (NOTE THAT RESPONSES 9 AND 10 ARE DIFFERENT FOR Q30 AND Q31)
ALLOW RESPONDENTS TO SKIP INDIVIDUAL SERVICES

Service or Benefit	Encourage you to start or increase carpool, vanpool, bus, or bicycle					
	Not at all 1	2	3	4	Very much 5	Not sure
1 Help finding carpool / vanpool partners						
2 Transit schedule or route information						
3 Bicycle/walking information						
4 Guaranteed Ride Home in case of emergencies						
5 Reserved or priority parking for car-pools/vanpools						
6 Secure parking for bicycles						
7 Drawings or contests for employees who don't drive alone to work						
8 Personal lockers or showers for employees who bicycle to work						
9 $100 per month benefit for employees who ride buses to work						
10 $100 per month benefit for employees who carpool or vanpool to work						

32 How much do you pay to park at work, per month? If you don't usually drive to work, please check the amount you would have to pay, if you needed to drive.

1 $0, I can park for free
2 $1 to $24 per month
3 $25 to $49 per month
3 $50 to $74 per month
4 $75 to $99 per month
4 $100 to $149 per month
5 $150 per month or more
9 Don't know

DEMOGRAPHICS

Q33-Q35 ASKED OF EMPLOYED RESPONDENTS ONLY
IF EMPL = 2, SKIP TO Q36

33 About how many employees work at your worksite?

1 1 to 25
2 26 to 50
3 51 to 100
4 101 to 250
5 251 to 999
6 1,000 or more
9 Don't know / prefer not to answer

34 What type of employer do you work for?

1 Federal agency
2 State, or local government agency
3 Non-profit organization / association
4 Private sector employer
5 Other (SPECIFY) _____
9 Don't know / prefer not to answer

IF PRIMARY = 7, SKIP TO Q36

35 What is your zip code at work? _____

36 What is your zip code at home? _____

The following questions are for classification purposes only. They will not be used to identify you in any way.

37 Do you have a car, SUV, truck, or other personal vehicle available to you on a regular basis for your travel?

1 Yes
2 No
3 Available on some days
9 Don't know / prefer not to answer

38 How many persons live in your home? Please count yourself, family and friends, and those who are unrelated to you such as live-in housekeepers or boarders.

_____ persons
99 Prefer not to answer (**SKIP TO Q40**)

IF Q38 = 1, AUTOCODE Q39 = 0, THEN SKIP TO Q40

39 And how many of these household members are under the age of 16?
_____ household members
99 Prefer not to answer

40 Which of the following groups includes your age?

1 18 - 24
2 25 - 34
3 35 - 44
4 45 - 54
5 55 - 64
6 65 or older
9 Prefer not to answer

41 Whilch one of the following best describes your racial background. **(DO NOT ALLOW MULTIPLES)**

1 Asian, Native Hawaiian or Other Pacific Islander
2 Black or African-American
3 Hispanic
4 White, Non-Hispanic
5 Multi-racial / Other
9 Prefer not to answer

42 Which category best represents your household's total annual income?

1 less than $20,000
2 $20,000 - $39,999
3 $40,000 - $59,999
4 $60,000 - $79,999
5 $80,000 - $99,999
6 $100,000 - $119,999
7 $120,000 - $139,999
8 $140,000 or more
19 Prefer not to answer

43 Are you male or female?

1 Male
2 Female
9 Prefer not to answer

44 Do you have any recommendations for ways to improve the transportation system in Western North Carolina?

OPEN ENDED _____

45 Finally, how or from whom did you learn about this survey?

1 Family member, friend, or neighbor
2 Co-worker or work colleague
3 Employer
4 Community / neighborhood association
5 Business association (e.g., Chamber of Commerce)
6 Land of Sky Regional Council / French Broad River MPO website
7 Newspaper article / ad
8 Other source (please specify) _____
19 Prefer not to answer

Thank you very much for your time and cooperation!

3

Appendix D: TDM Program Tables

The tables contained in this section reflect potential TDM implementation strategies and can serve as a worksheet for the future TDM program to track implementation. They are adapted from similar tables used for TDM services in Boulder, CO. They are listed in alphabetical order and arranged by different types of strategies.

Modal Promotion Strategies

Strategy	**Dependencies**		**Primary Implementer**
Description	**Implementation to-date**	**Opportunities**	**Limitations**
Bicycling Promotion	Stand alone		Community
General promotion and marketing activities oriented towards encouraging commuters to bicycle. Marketing messages can include health and cost savings, convenience and other benefits.			Bicycle commuting declines during the winter. As such, bicycle modal share is not sustainable across all months. Unless marketed with on-bus, the market for bicyclists is limited.
Bicycle riders guide	Bicycling promotion	Employee Transportation Coordinators	Employer
Develop a specific guide for a particular worksite that includes bicycle routes, locker and rack locations and other pertinent information to the bicycle commuter. General community information can be included on a cut-and-paste basis in order to save costs.		Areas of projected high growth, along multimodal corridors, hold the best potential for affecting mode share. Assisting bicyclists with accessing their specific worksites, including where/how to park their bicycle and prepare for the workday, has been proven to be more effective than promotion alone.	General limitations of bicycling promotion apply. Furthermore, "information overload" becomes a concern. Employees will not change their behavior simply by publishing a guide at the worksite; it will require word-of-mouth promotion, preferably by an Employee Transportation Coordinator.
Bicycle users group	Bicycling promotion		Community
Organizations of bicyclists and bicycle commuters tend to increase the sustainability of bicycle commuting over time.		User groups help encourage each other to bicycle more often, especially when combined with a social interaction (such as a Bike Station café).	General limitations of bicycling promotion apply. Those inclined towards a users group are most likely already bicycling on a somewhat regular basis. As such, the program only affects how often the users bicycle, not typically the encouragement of new riders.
Bike station	Bicycle users group	Bicycling promotion	Community
Bike stations provide secure and covered parking for bicyclists. Most effective in dense concentrations of worksites, bike stations can serve as an encouragement to commute to work by bicycle.		Bike stations have been used to encourage the development of new bicycle riders who are concerned about safety (from theft) and desire complimentary services (such as showers and lockers).	Outside of downtown Asheville, a bike station will have limited appeal due to the distance between worksite and bike station. As such, total modal shift is limited. Additional limitations of bicycling promotion and bicycle users group apply.

Strategy	**Dependencies**		**Primary Implementer**
Description	**Implementation to-date**	**Opportunities**	**Limitations**
Bike to Work Day/Week	Bicycling promotion	Special events	Community
The Bike to Work Day promotion provides many commuters with "first-time" experience with bicycling to work. A small proportion of these commuters, every year, become habitual bicycle commuters.		Allowing a day where commuters can be introduced to the ease of bicycle commuting is a great way to change commuting modes.	Bike to Work Day usually only occurs once a year, and building a sponsor and promotions list can be taxing. Furthermore, BTWS participants tend to fall back to using SOV after a couple of months, and general limitations on bicycling apply.
Carpool promotion	Ridematching services and events		Community
General promotion and marketing activities oriented towards encouraging commuters to carpool. Marketing messages can include cost savings, stress reduction, socialization, convenience, environmental reasons and other benefits.		Promotion and marketing is extremely important in introducing and educating people in the benefits of carpools. When partnered with ridematching events, carpooling can help provide for trips that are poorly served by transit.	Carpool participation declines over time if marketing programs are not continued. Although carpooling has remained relatively static over time, family members who commuter together play an increasing role. As such, carpooling promotion efforts may be limited over time.
General marketing	Some combination of alternative mode services and/or incentives		Community
Comprehensive marketing of all modal options, and how to best make use of them, are a key component to TDM promotion. Marketing materials can include flyers, brochures, posters and targeted email messages.		Marketing is more effective when it emphasizes the positive benefits commuters will achieve from using alternative modes, including exercise and financial incentives. Marketing that supports other TDM strategies that improve transportation choice or provide tangible incentives have been proven to show significant long-term impacts on travel behavior.	The travel impacts of TDM programs that rely only on marketing tend to decline over time as participants lose interest. TDM also faces competition from all other marketing messages. If the marketing misses its target market or carries an uninteresting or confusing message, it will be ineffective.
Modal commuter orientation	General marketing	Carpool and transit promotion	Employer
Commuter orientation meetings provide new employees and residents with the opportunity to learn more about travel in the community prior to habits forming. In some communities, participant employers require all new employees to attend an evening commuter orientation meeting as a condition of new hire.		Provides employees an opportunity to learn about commuting alternatives available in an area prior to the establishment of habits. It has been shown that establishing a transit or carpool habit at the start of a job is more effective than trying to switch an employee's mode of travel.	Commuter orientation programs are ineffective if they do not include convenient services and/or incentives. Thus, this program would be less effective outside of the multi-modal corridors.

Strategy	**Dependencies**		**Primary Implementer**
Description	**Implementation to-date**	**Opportunities**	**Limitations**
Special events	Some combination of alternative mode services and/or incentives		Employer
Special events are an effective means of distributing transportation information to a large group of individuals. Targeted events can include luncheons with commuters from a particular area, new hires or other targeted groups.		Special events are effective in providing a compelling reason for employees to use alternatives. Zip code meetings, in particular, are effective at creating employer-based vanpools and carpools. Special events can be tailored to suit a particular geographical area or demographic group.	Often times, it is difficult to get groups of people together to listen to a presentation, especially for a topic as "boring" as transportation. Without diligent promotion of the events, they may be ineffective.
Telecenter creation	Telework promotion		Community, Developer
As a means of promoting telework, telecenters are collective business offices located near residential areas where teleworkers can access typical business services, such as copiers and conference rooms.		Popular in the late 1980s, telecenters offer a central area for employees to access resources required for their job. The "needs of the office" can be handled in a location closer to the employee's residence.	With the advent of residential broadband access, most telecenters have disappeared nationally. A detailed market assessment must be conducted to determine whether Asheville communities would be able to support a telecenter.
Telework promotion	Stand alone		Community
General promotion and marketing activities oriented towards encouraging teleworking. Specific activities can include outreach to employers, training of teleworkers and telemanagers and general marketing.		Telework is the most utilized "alternative," outpacing even transit use nationwide. Many employers have implemented telework to reduce costs, improve morale and to recruit/ retain employees.	Telework may require changes in management practices that reduce the need to have employees physically together at one time. Some employers are reluctant to start up telework programs due to reservations of employee productivity.
Transit promotion	Stand alone		Community
General promotion and marketing activities oriented towards encouraging commuters to use bus alternatives. Activities can include bus route maps, brochures, posters, how-to classes and free-ride days.		Asheville's transit network serves a variety of trip needs. With promotion of services to regional travelers, commuters may better connect how to use regional transit and community transit to access worksites.	As with general marketing programs, transit promotion faces competition from all other marketing messages. If the promotion misses its target market or carries an uninteresting or confusing message, it will be ineffective.

Strategy	**Dependencies**		**Primary Implementer**
Description	**Implementation to-date**	**Opportunities**	**Limitations**
Transit riders guide	Transit promotion		Community
A riders guide oriented to new bus riders in Asheville can help overcome any predispositions against riding the bus due to a lack of information. Items can include how to read a bus schedule, where to wait for the bus, how to use online information and how to use the bikes-on-buses racks.		Similar to a bicycle users guide, the transit users guide provides potential users with information on how to use the bus system in Asheville and overcomes problems and hesitancies users might have. Research has shown that "not knowing what to do" is the number two reason (besides convenience) why people state they do not ride the bus.	A transit riders guide will have limited appeal and effectiveness. Information overload becomes a concern. Employees will not change their behavior simply by publishing a guide at the worksite; it will require work-of-mouth promotion, preferably by an Employee Transportation Coordinator.
Vanpool promotion	Vanpool subsidies	Ridematching services	Community
General promotion and marketing activities oriented towards encouraging commuters to vanpool. Marketing messages can include cost savings, stress reduction, socialization, convenience, environmental reasons and other benefits		Commuters in vanpools usually have longer commutes than other modes, which dramatically reduces VMT. Vanpools also tend to have the lowest cost per passenger mile of any motorized mode. For commuters who live more than 25 miles from their worksite, vanpooling is a real alternative.	The more people who register, the more effective the program is due to declining costs-to-scale. If few people participate, promotional efforts will be ineffective. The program should serve an entire geographic region to be successful.
Showers and Locker Facilities	Stand alone		Employer
Employer provides shower and locker facilities for employees to use prior to beginning their workday. Showers and locker facilities are provided for each gender and are secure within the worksite's interior.		Providing shower facilities at worksites allows bicyclists, walkers and joggers to "freshen up" after getting to work, thereby removing one of the barriers to commuting.	In new buildings, the infrastructure can be planned and built without great cost; however, with existing buildings, it can be expensive to install shower facilities.

Efficiency Strategies

Strategy	**Dependencies**		**Primary Implementer**
Description	**Implementation to-date**	**Opportunities**	**Limitations**
Advanced Traveler Information Systems	General marketing	Transit promotion	Community
ATIS implementations offer commuters advanced information on the availability of alternatives. Specific examples of ATIS include kiosks at bus shelters informing patrons when the next bus will arrive, real-time bus routing at shelters and stations, and online ridematching		ATIS systems have had success in encouraging new transit riders by providing up-to-date information on bus travel times. As found in Washington, DC, ATIS helped allay transit riders' fears and generated greater repeat travelers.	ATIS can be expensive to implement, especially if monitors are provided at all bus shelters. ATIS will be best suited only for multi-modal corridors, with limited effectiveness off of high-frequency transit corridors.
Alternative Work Arrangements	Stand alone		Employer
Employers offer flexible work arrangements so as to maximize employee commute lengths and maximize productivity hours. Typical strategies include flextime and staggered work hours.		Alternative work arrangements are popular with employees and can be an attractive tool for recruitment and retention, with little cost (if any) to the employer.	Alternative work arrangements are difficult to organize by a community and to specify in code. At best, the community can provide information as a guide.
Bikes on Buses promotion	Transit promotion; Riders guide	Bicycle lockers and racks	Community
Bicycles serve the "last mile" connection between community or regional bus service and the worksite or school. Promoting this connection often satisfies the convenience factor associated by many commuters with using the bus.		Bike storage on transit vehicles helps encourage new riders, especially if promoted with bicycle parking at the worksite. In Vancouver, a survey found that 30% of new riders were attracted specifically to bikes-on-buses. Promoting this service, especially how to use it, is key.	Although bicycling helps extend the market area for transit users, it is still limited to employers and/or residences that are well connected and served by Asheville's multi-modal corridors.
Compressed Work Weeks	Stand alone		Employer
Employers allow employees to concentrate working hours in fewer days per week. The two most popular options are "four days of ten hours each" and "nine days (in two weeks) of nine hours each." The extra "day off" often translates into commute trip avoidance.		Compressed work weeks are popular with employees and are used as a recruitment and retention tool. For days off, an employee makes one less commute, thereby reducing VMT. An analysis by FHWA indicated that widespread adoption of the strategy can reduce regional VMT up to 0.6%.	Recent research has shown that the VMT reduced during the commute may be offset by increased personal travel. As such, total VMT reduction possibilities are limited.

Strategy	**Dependencies**		**Primary Implementer**
Description	**Implementation to-date**	**Opportunities**	**Limitations**
Employee Transportation Coordinators	Some (unspecified) combination of employer strategies		Employer
Employers dedicate a representative and/or liaison to all employees, informing them of commute alternatives and the availability of services or incentives at the worksite.		A strong employee transportation coordinator is the difference between the "maximum" effectiveness of TDM and the "minimum" effectiveness.	ETC's can be costly to maintain for small or medium sized employers.
Freight Management	Stand alone		Community
Truck traffic often deters the use of alternatives, particularly walking and bicycling. Managing peak-period freight traffic can help to improve the quality of commute for many employees.		By managing the extent of freight traffic on Asheville's streets, not only alternative modes, but also drivers will notice the difference.	Freight traffic only creates a perception of safety concerns; it is often not proven in fact. Furthermore, freight management may be opposed by a variety of employers and businesses.
Tourist trip management	Transit promotion	Transit or Bicycle users guide	Community
Tourists have a unique set of transportation requirements. Recognizing the need to address trips internally while visiting, tourist trip management emphasizes a "park once, travel often" concepts for trips internal to the community.		Tourist traffic is higher in Asheville than in most cities. For those who are visiting, a "park once, travel often" approach can reduce VMT throughout the day and potentially enhance visitor's opinion of Asheville.	Tourists will most likely arrive in Asheville via personal automobile. With a vehicle at the ready, it may be difficult to convince tourists to use the City's transit network.

Financial Incentives

Strategy	**Dependencies**		**Primary Implementer**
Description	**Implementation to-date**	**Opportunities**	**Limitations**
Transportation Allowance	Unbundled parking leases		Community
A transportation allowance is provided to commuters for use on whatever modal options they choose. Typically, allowances are used in conjunction with parking pricing and other modal strategies.		A transportation allowance is very effective at "leveling the playing field" between parking and alternatives. The opportunity to save money and avoid out-of-pocket parking costs is appealing to many travelers. Employers in Washington and California have seen a shift in alternative modes by over 30%.	Spillover parking will occur unless the policy is accompanied by neighborhood parking restrictions. The allowance will work best on multi-modal corridors and have limited appeal where alternatives are not readily available.
Carsharing	Stand alone		Community or Developer
Carsharing involves a pooled fleet of vehicles that are available for limited tasks by either members of a carshare program or for a per-use fee.		Carsharing is similar to guaranteed ride home in that it makes using alternatives easier for travelers. Carsharing can reduce the need for vehicle ownership which, in time, also reduces vehicular use in general.	Carsharing has limited application in the United States and, thus, it is difficult to project the potential effects. Furthermore, cost recovery over time becomes an issue, especially administration and maintenance.
Commuter Club	Bicycling, Walking, Transit, Carpool, Vanpool, and/or Telework promotion		Community
Similar in function to "airline miles," a Commuter Club provides either points or cash-based incentives to commuters who use alternative modes of transportation.		A Commuter Club provides tangible incentives and recognition to those who use alternative modes. Southern California and Aspen, CO, have successfully implemented Commuter Clubs that maintain very high alternative mode shares from month to month.	Developing a Commuter Club program has some financial and administrative expenses associated with it. As with other TDM promotions, a Commuter Club will only be as effective as the convenience of available alternatives.
Free bus passes	Transit promotion	Transit riders guide	Community
Free bus passes are provided to commuters for use on community and regional transit.		Free bus passes provide travelers with a motivation to use transit.	
Free bicycle accessories	Bike riders guide; Bike promotion	Commuter Club	Community
Providing bicycle accessories to commuters, such as head lamps and helmets, can improve the safety of bicyclists and serve to encourage greater use of bicycle commuting.		Providing accessories can alleviate the safety concerns of bicyclists. Promotes use of bicycling as viable alternatives.	Equity concerns are most apparent, including the specific vendors and outlets, so as not to compete with Asheville's retail base. Furthermore, free accessories may only serve to reward those who are already bicycling.

Strategy	**Dependencies**		**Primary Implementer**
Description	**Implementation to-date**	**Opportunities**	**Limitations**
Guaranteed Ride Home	Carpool, vanpool, transit,	bicycling, walking promotion	Community
A Guaranteed Ride Home program provides a free taxi ride home to those who fall ill, have an emergency, or are left stranded by a carpool.		As cited by most commuters, having a guaranteed way to avoid being "stuck at the office" is a desirable incentive. Guaranteed Ride Home allows for employees to always have a ride home, regardless of the emergency situation. Interestingly, GRH is rarely abused nationwide.	The main limitation is ensuring an appropriate commute trip reduction program is implemented for GRH to be effective. Employers may also hesitate to provide GRH due to costs and liability; however, costs are usually low.
Parking cash out	Unbundled parking leases		Community
Allows employees the opportunity to choose a parking space or receive cash equivalent of the space. Works best when parking spaces are unbundled from leases.		Similar to a transportation allowance, parking cash out is very effective at "leveling the playing field" between parking and alternatives. The opportunity to save money and avoid out-of-pocket parking costs is appealing to many travelers. Parking cash out can reduce SOV commuting by up to 25% if alternatives are readily available.	Potential problem is that employees may claim to commute by alternative modes but actually drive by themselves and park off-site, creating spillover parking problems. Overcoming various institutional and political barriers may be difficult.
Taxation incentives	Stand alone		Employer
Provide and/or promote the availability of tax benefits for the use of alternatives. Currently, federal tax law permits pre-tax allocation of certain alternative transportation expenses.		Commuter Choice benefits offer up to $100 per month for transit or vanpool expenses and up to $180 per month for parking. Commuter Choice initiatives have shown to be effective with employers nationwide.	The Commuter Choice programs and regulations are sometimes difficult to interpret and require the ability to declare pre-tax expenditures on payroll. As such, implementation by small and medium sized employers will be limited.
Vanpool empty seat subsidy	Vanpool promotion	Ridematching services	Community
As vanpools lose riders over time, such as when someone changes jobs, it is important to ensure other riders maintain a consistent user fee. The empty seat subsidy covers the cost of the lost rider in the van until a new rider can be found, or at least for a minimum period of time.		The empty seat subsidy ensures that the cost for other users will not increase for users who continue in the vanpool. Vanpooling tends to have the lowest cost per passenger mile of any motorized mode of transportation, since it makes use of a vehicle seat that would otherwise be empty.	To be effective, the empty seat subsidy should expire in order to provide incentive for actually finding a replacement rider. This will require an efficient matching system.

Strategy	**Dependencies**		**Primary Implementer**
Description	**Implementation to-date**	**Opportunities**	**Limitations**
Vanpool subsidy	Vanpool promotion	Ridematching services	Community
Subsidizing the monthly cost for using a vanpool greatly increases the cost savings incentive for participating in a vanpool. A typical subsidy is 30% to 50% of the per-seat cost.		Provides financial incentive to first-time users of vanpools to allow for a "trial" period. The trial periods allows the user to be able to directly compare personal cost savings by not driving versus the eventual cost for use of the van.	Requires efficient matching system to be effective.
Bike Loan Program	Bicycle promotion	Bicycle users guide	Employer
A bike loan program provides a set of bicycles for general employer/community use. These bicycles are associated with either an individual or organization for tracking and maintenance purposes.		Greater flexibility for those who do not use SOV as their preferred commute method and provide an alternative for short distance errands.	Program requires administration to ensure safety and security of bicycles is maintained.

Pricing Strategies

Strategy	**Dependencies**		**Primary Implementer**
Description	**Implementation to-date**	**Opportunities**	**Limitations**
Cordon pricing	Regional transit services; Vanpool subsidies	Transit, carpool and vanpool promotion	Community
User fees are implemented for crossing a particular cordon around the community. The fee can change with the time of day or severity of traffic. Often, alternatives to driving across the cordon are provided, such as remote parking and shuttle services.		Cordon pricing provides an incentive to regional commuters to use transit, carpool or vanpool. As this is the largest projected growth market for Asheville employment, it would have the best potential success in affecting SOV and VMT reduction goals.	
Parking fees	Stand alone		Community or Employer
Parking fees can be set for cost recovery or variable based upon time of day and length of parking.		Parking fees are effective in providing a disincentive for traveling alone to work. If convenient alternatives are available, a shift of up to 25% to alternative modes is possible as a result of parking pricing.	Spillover traffic will be a concern unless an aggressive parking permit program is pursued. Furthermore, the "sting" effect of parking charges wears off over time, reducing long-term effectiveness.
Pay-as-you-go vehicle insurance	Stand alone		Community
Vehicle insurance rate are not levied as a fixed rate, but rather as variable based upon the total number of miles driven. Successfully implemented in Texas.		Converting part of the fixed cost of owning an automobile to a variable cost helps commuters justify not taking an automobile to work.	Experience in Texas has not yet been documented, so it is uncertain how much potential SOV and VMT reduction benefit will occur.
Roadway pricing	Transit services; Vanpool subsidies	Transit, carpool and vanpool promotion	Community
User fees are implemented on area roads, with higher fees associated with peak times, and discounted or zero fees with off-peak travel times.		As with cordon pricing, roadway pricing provides a monetary incentive to use alternatives such as transit, carpool and vanpool.	

Facility/Land Use Element/Transit-Oriented Development

Strategy	**Dependencies**		**Primary Implementer**
Description	**Implementation to-date**	**Opportunities**	**Limitations**
Access management	Stand alone		Developer
Multi-modal access management, which includes consideration of access for all modes, improves respective efficiency of each mode. Curb cuts, pedestrian corridors, bicycle corridors and other considerations can be included.		Intended to improve motor vehicle flow, it can support TDM by integrating land use planning and improving transportation options by encouraging higher density development and TOD more suited to walking, bicycling and public transit.	Some projects simply increase arterial traffic speeds and volumes, which can increase automobile traffic.
Bicycle Racks and Lockers	Stand alone		Employer
Bike racks and lockers are provided for users to secure their bicycles in an enclosed facility. Typically, racks and lockers are placed either near front entrances or under covered parking facilities.		As with bike stations, many potential cyclists desire a safe and convenient facility to lock up bicycles. Racks and lockers, in particular, provide this comfort.	Even in communities that have a bicycle parking ordinance, enforcement is problematic. Often, bicycle racks and lockers are placed in locations that are inconvenient to cyclists. An ill-advised rack/locker placement can render the facilities ineffective.
Clustered parking	Stand alone		Developer
Clustered parking (including parking structures) reduces pedestrian distance between buildings and improves ambient quality for pedestrians.		Creates safer, more attractive pedestrian friendly environment behind buildings and encourages clustering of buildings. Safer environments have been proven to attract greater numbers of pedestrians and cyclists.	Zoning and development codes may need to be rewritten to support these parking practices.
Commuter Store	Transit, carpool, bicycling and vanpool promotion	Transit passes	Employer
Commuter stores are primarily information centers that provide a central location for obtaining commuter information. This information can include maps, schedules, bus passes, ridematching, vanpool sales and more. Typically, commuter stores also sell commuter-oriented products, such as coffee mugs. In a few situations, communities require employees to pick up their bus passes at commuter stores.		Provides a one-stop shop with detailed information on alternative modes of transportation available to the commuter. Most commuter stores include pass sales or distribution, thereby requiring a contact "touch" of customers of alternative modes, which in turn help "keep transit in mind."	Program development and continuous marketing is required, as well as continuous training of employees.

Strategy	**Dependencies**		**Primary Implementer**
Description	**Implementation to-date**	**Opportunities**	**Limitations**
High Occupancy Vehicle (HOV) priority	Stand alone		Community
Aside from constructing separate HOV facilities, HOV priority systems offer signal "queue jumping" for buses and vanpools. Priority systems make use of the same signal prioritization technology as utilized by emergency vehicles.		HOV lanes, queue jumps and other related improvements provide a travel-time savings to transit, carpool and vanpool users. Experience has shown that even poorly performing HOV facilities saves more VMT and reduce more SOV usage than if the facilities were open to general purpose traffic.	HOV lanes sometimes are considered to increase total automobile travel compared to no additional road capacity. Queue jumps are difficult to accommodate on certain facilities.
Incidental Use Parking	Parking maximum ratios		Developer
Incidental use parking spaces are those that are dedicated for use by an "irregular" driver, such as a transit rider or carpooler who must drive to work on occasion. These spaces are used in conjunction with parking maximums to ensure that parking is not overprovided.		Incidental use parking spaces are very effective in managed or priced parking lots.	Incidental use parking has limited effectiveness without a strictly enforced parking maximum and/or parking pricing of some kind.
Onsite amenities	Stand alone		Employer
Onsite amenities provide retail services to employees without requiring a trip. Examples include ATMs, convenience retail, childcare, food services and cleaners, all located within easy walking distance, preferably onsite.		Increases convenience for employees so that trips during the workday are reduced since all services are within walking distance.	If the employee population does not support an onsite amenity, it can create a "blight" on the development or worksite.
Parking management	Parking maximum ratios	Preferential or clustered parking	Community, Employer or Developer
Parking management strategies utilize a variety of factors to balance the availability of parking with the availability of modal alternatives. Residential and commercial parking permits, parking pricing, shared use parking, time restrictions and other strategies are included in general parking management.		Limits the availability of free and subsidized parking. As with transportation allowances, parking management levels the playing field, thereby allowing greater use of alternatives, as they are perceived to be more convenient.	Parking that is difficult to find, inadequate, inconvenient or expensive will frustrate users and can contribute to spillover parking problems in other areas.

Strategy	**Dependencies**		**Primary Implementer**
Description	**Implementation to-date**	**Opportunities**	**Limitations**
Parking maximum ratios	Stand alone		Community
The establishment of parking maximum ratios ensures that a development site does not oversupply parking, thereby creating an imbalance between modal options. Parking maximums are typically implemented in areas where modal options are apparent to users.		Easy to implement in most communities by adjusting zoning codes and development policies. If development occur on multi-modal corridors, it is easier to justify parking maximum ratios. Cities across the United States have used maximums to varying levels of success in reducing SOV traffic.	Oftentimes, parking maximums do not have immediate results. Even established sites with excellent transit service can be overrun with vehicles demanding parking.
Preferential parking	Carpool and vanpool promotion		Employer
Preferential parking programs provide parking spaces for carpoolers and vanpoolers near the front entrances. These reserved spaces typically require a hang-tag or other identification mechanism for use.		Provides incentives for those in carpools and vanpools to have the most desired parking spaces. Preferential parking has been successfully implemented at employers nationwide.	Parking that is difficult to find, inadequate, inconvenient or expensive will frustrate users and can contribute to spillover parking problems in other areas.
Protected pedestrian/bicycle corridors	Stand alone		Community or Developer
Separating pedestrian and bicycle traffic from vehicular traffic improves safety and enhances the quality experience of the alternative. Protected corridors include separated sidewalks (typically with a landscaped buffer), marked corridors in a parking lot and other similar improvements.		Pedestrian corridors on-site provide safe means across parking lots and general campus facilities. These increase the walkability of a multi-modal corridor, resulting in more support for pedestrian travel. A short non-motorized trip can substitute for a longer car trip.	Zoning and development codes may need to be rewritten to support these pedestrian/ bicycling on-site corridor practices.
TDM Friendly Site Design	Stand alone		Community or Developer
General promotion of land use and site design elements that facilitate the use of modal alternatives. Elements can include preferential parking for carpoolers, drop off locations close to the main entrance, bicycle parking improvements and various other strategies.		Grant programs can provide incentives for TDM friendly site design. Supports TDM objectives.	Zoning codes and development practices need to be revised to allow and encourage TDM friendly site design.

Strategy	**Dependencies**		**Primary Implementer**
Description	**Implementation to-date**	**Opportunities**	**Limitations**
Unbundled parking leases	Stand alone		Developer
Separating parking from building leases provides an opportunity for employers to offer a transportation allowance or other cost-neutral promotion of alternatives, without incurring any additional cost for "wasted" parking.		Unbundling parking prices from building leases allows for the opportunity to pursue transportation allowances or parking cash-out.	Spillover parking needs to be addressed on surrounding streets. Without parking cash out or transportation allowances, unbundling leases will not accomplish SOV or VMT reduction goals.

Implementation Options

Strategy	**Type of organization**	**Funding Source**
Description	**Opportunities**	**Limitations**
Business or Local Improvement District	Quasi-public	Self-taxation on either property taxes, mill levy, parking/user fees or sales tax
LIDs and BIDs are self-taxation districts with the purpose of providing a certain number of services or programs. TDM can be provided by the LID/BID as one of the core services. As implemented extensively in Georgia, TDM can be advanced as a business or local service. A BID/LID can include a parking district for maximum effectiveness.	BIDs are an established mechanism for financing local improvements, including transportation services and programs. BID/LID administration is well poised to involve commuters throughout the district.	Since all employers that are part of the BID/LID will pay fees, they tend to be less inclined to go above-and-beyond their payments to the BID/LID for TDM. As such, the BID/LID is required to provide the full burden of TDM services.
Developer Incentives	Private	Self-imposed TDM program (in lieu of other development requirements)
Developers and tenants may be willing to implement TDM programs onsite if provided with sufficient incentive to do so. In the development review process, development incentives (including more lenient density or parking requirements) can be offered in exchange for the development and implementation of a viable onsite TDM program	Developers and employers are the most effective at implementing TDM programs due to their proximity to commuters. Furthermore, the City can have a role in how programs are implemented, as they would become part of the development review process.	Each development will be different from another, thus exact regulations should be flexible. This may tend to dilute the maximum potential effectiveness. Furthermore, this strategy does not address existing employers and developments that do not have a pending application in front of the City.
Transportation Management Association	Non-profit	Membership fees are the principal funding source for administration, with reliance upon grants and other sources for program development
Transportation Management Associations (TMAs) are typically private, non-profit organizations that provide transportation services in a particular subregion. TMAs are often member-supported, including a combination of private and public sector members.	Studies have indicated TMAs can reduce vehicular trips 6-7% more than if TDM were implemented without the TMA. This is due to a typically high level of interaction and support from the private sector and for implementing programs at worksites directly.	TMAs can lose support over time and with it financial sustainability. As such, most TMAs must be flexible to pursue highway and road improvements as much as provide TDM services.