

## **Travel Task Force Report: Land Use Impacts on Market Group Travel**

### **Introduction**

Like many regions throughout the United States, the Capital District land use pattern has undergone a number of changes since the 1940's. Many suburban towns have seen tremendous, low density development predominantly characterized by large subdivisions of single family homes, enormous shopping centers and giant office parks all built to the scale of the automobile. Meanwhile, many older urban areas have somewhat declined over time as businesses and residents relocated to the more spacious and easier to develop suburbs. Recent data from the 2000 U.S. Census confirm that throughout the 1990's, many Capital District cities lost population while suburban areas gained, even though the net regional increase in population was minimal. These population shifts have helped to create a region that is diverse in its urban form, age of housing and development style.

Economic conditions and the question of whether the region will remain an area of slow growth or enters a period of high growth will have a tremendous impact on future land use and development patterns. A slow growth scenario over the next twenty years could give communities the time needed to create effective land use plans and gain the ability to approve higher quality smart growth development projects when opportunities arise. However, effective land use plans would be even more critical in a high growth scenario, although many communities would currently be unprepared for such growth. Regardless of the pace of regional growth, communities that fail to undertake proactive planning risk continued suburban sprawl, increased traffic congestion and an overall decline in quality of life. Poorly planned but easy to develop suburban communities would also negatively impact urban downtowns and neighborhoods as developers would be less likely to invest in them without incentives. What follows is a brief overview of the regional land use pattern, a discussion of current trends, and a description of how future land use patterns may impact the travel choices of market groups.

### **Background**

#### Existing Land Use Patterns

The Capital District is one of the more unique metropolitan areas in the United States. Whereas many regions developed around one major central city, the Capital District developed around three primary cities, with a number of smaller cities, towns and villages surrounding them. The region is also located in the oldest part of the country and early development patterns reflected a different time as older areas are generally high density and designed to the scale of the pedestrian. As time moved on and people became more mobile through technological advances, the development pattern changed to one that is lower density. The relationship between transportation innovations and development patterns is quite clear in the Capital District, again reflecting some of the uniqueness of the area.

Today, the Capital District is fortunate to offer residents a wide variety of living options in various development patterns. Often, the same city or town contains several development patterns, generally related to the age of the area and the transportation system that existed at the time of development. As a result, it is often not possible to classify an entire municipality as having one type of urban form. Instead, the region must be described as having several urban form types. The primary urban forms and their characteristics are provided in Table 1.

**Table 1  
Urban Form Characteristics**

<b>Urban Form Type</b>	<b>Characteristics</b>	<b>Capital District Examples</b>
<b>Urban Core</b>	Very high development density, including row houses. Great mix of land uses with a wide variety of activities and services close together. All streets have sidewalks and are low speed. Frequent transit service and numerous route options. Parking limited to on-street spaces and scattered paid surface lots and garages.	Center Square - City of Albany River Street area - City of Troy
<b>Traditional Urban Neighborhoods</b>	Medium-high development density. No row houses. Many single family and two family homes. Good land use mix with some services and activities close together. Nearly all streets have sidewalks and are low speed. Parking is generally on street and not all homes have driveways. Fairly frequent transit service; route options limited to major arterials with limited cross-town connections.	Union Street - City of Schenectady Nelson Avenue – City of Saratoga Springs
<b>Town/Village Centers</b>	Medium-high development density. Homes largely single family with some apartment complexes and multi-family homes. Some mix of land uses, mainly at the centers of these areas, often focused on arterials. Only main streets have sidewalks with arterials and collectors having higher speeds. Some multi-use trail connections. Parking is generally off-street. Transit service is not as frequent as in urban areas and may only serve linear main streets.	Delmar - Town of Bethlehem Village of Schuylerville - Saratoga County
<b>Conventional Suburban Development</b>	Low density with some higher density development. Homes are nearly all single family. Some apartment complexes. Poor land use mix with complete separation of many land use types. Almost no streets have sidewalks and are generally higher speed outside of residential areas. Transit limited to commuter routes with very limited local service.	Ushers Road - Town of Clifton Park Carman Road - Town of Guilderland
<b>Rural</b>	Low density development. Very limited services. Housing is nearly all single family. Very poor land use mix and large lot sizes. Streets do not have sidewalks and are generally higher speed. Extremely limited transit service, if it exists at all. Parking is off-street.	Most of the Town of Nassau - Rensselaer County Most of the Town of Duanesburg - Schenectady County

Although the region is fortunate to have a variety of urban form types, the less dense, suburban and rural areas have seen the largest population increases in recent years. According to the Capital District Regional Planning Commission, “In the past 10 years, the Capital Region has continued to sprawl as traditional cities lose population to surrounding suburban and rural areas. Between 1990 and 2000, the four-county region’s population grew a little more than 2 percent, but new land developed in suburban and rural areas increased by about 11 percent” [1]. The form this development has taken has generally been rural and conventional suburban development. This has led to a great deal of underutilized housing in the older, urban areas along with the continued loss of open space and increased traffic in many of the fastest growing

suburban areas. These trends are not unique to the Capital District as other areas around the country are spreading out as well, many at a much higher rate. What is of particular concern to the Capital District is that recent rural and suburban development is not in response to rapid regional population increases.

Much of the rural and conventional suburban development that has occurred has been low density. New housing has largely been single family homes in cul-de-sac style subdivisions and exurban executive homes on large lots. Although some offices have returned to the urban core, many others located closer to where workers live, largely in conventional suburban areas in very large office parks. Shopping centers have also swelled through the 1990's as big box power centers became more common with their hundreds of thousands of square feet of leaseable floor areas and giant parking lots. Big box stores themselves got ever bigger with the building sizes of some of the latest models exceeding 200,000 square feet. All of this development is designed to the scale of the car with limited transit, bicycle or pedestrian facilities. These areas emphasize convenience and even where alternatives to the car exist, time constraints, safety conditions, and other factors force many to use cars.

The impact that recent development patterns have had on the transportation system are well documented. Development patterns contribute to the growth in daily vehicle miles of travel (DVMT). In the four county Capital District, DVMT increased 27 percent between 1990 and 2000 on the state touring route system [2]. Development patterns also influence mode choice for work trips. According to the U.S. Census, between 1990 and 2000 the percentage of Capital District commuters who drove alone to their jobs increased. However, the largest percentage increase was in those who worked at home (see Table 2). Regional commuters also exceeded the U.S. average in the walking and drove alone shares (see Table 3).

**Table 2**  
**Percent Change in Commute to Work Travel Between 1990 and 2000**

<b>Means of Commute to Work</b>	<b>Capital District</b>	<b>New York State</b>
Car, Truck, or Van – Drove Alone	7.1%	3.6%
Car, Truck, or Van – Carpooled	-22.7%	-12.1%
Public Transportation (including Taxicab)	-26.7%	-1.8%
Walked	-25.4%	-11.0%
Other Means	-20.9%	1.7%
Worked at Home	32.3%	16.2%

Source: USDOC, Bureau of the Census, *Census 2000*

**Table 3**  
**Percent Share of Commute to Work Modes in the Year 2000**

<b>Means of Commute to Work</b>	<b>Capital District</b>	<b>New York State</b>	<b>United States</b>
Car, Truck, or Van – Drove Alone	79.6%	56.3%	75.7%
Car, Truck, or Van – Carpooled	9.7%	9.2%	12.2%
Public Transportation (including Taxicab)	3.4%	24.4%	4.7%
Walked	3.7%	6.2%	2.9%
Other Means	0.6%	0.8%	1.2%
Worked at Home	2.9%	3.0%	3.3%

Source: USDOC, Bureau of the Census, *Census 2000*

Clearly, as the region further suburbanized between 1990 and 2000, the need for many to drive to their jobs increased. In spite of its decline, the percentage of workers walking to work is still relatively high. This reflects the many individuals living in the higher density urban cores, traditional urban neighborhoods and even town/village centers which are inherently more walkable than suburban and rural areas. Out of the largest 100 metropolitan areas in the U.S., the Capital District has the 12<sup>th</sup> highest share of workers walking to work [3].

Increased suburbanization and the related dispersal of housing is just one part of the explanation for the shift in mode choice toward the automobile. Economic changes through the 1990's gave many workers the spending power to purchase a vehicle, resulting in more vehicles overall. More workers are also working irregular, flexible schedules outside of the traditional 9 am to 5 pm workday. The phenomenon of trip chaining, which so many workers have embraced, also does not work well with carpooling or transit, leading to more commuting to work by car. All of these factors contribute to the increase in the drove alone share of commuting. Increased suburbanization and other factors also contribute to the rise in commute travel time. The Capital District's average commute time in 2000 is lower than that in the rest of the U.S. (22.5 minutes versus 25.5 minutes, respectively), but it is a 10.8 percent increase from the 1990 figure of 20.3 minutes [4]. The average change nationally was 13.8 percent. It should be noted that approximately 30 seconds of the increase in both the local and national commute time may be attributable to a change in how the commute time question was asked between 1990 and 2000.

The factors listed above all contribute to the increased use of cars and the drove alone share of commuting but there are limitations on the other modes that contribute to the use of cars as well. Often, even those who have access to transit in suburban areas have to drive to a park-and-ride lot in order to use it for work trips. Suburban transit service is rarely provided and, with a few exceptions, is not provided for local access. It is designed to bring riders to more distant but larger activity and job centers. Bicycling and walking facilities are also rarely provided in suburban and rural areas and where they do exist, they are often disconnected and are provided more for recreation than transportation. Even when facilities are provided, the great distances between activity centers in the suburbs reduce the opportunity to walk or bike with the limited time workers/residents have available to them. Again, these limitations contribute to the increased reliance on the car for a large percentage of daily trips.

Despite the low density of recent development, attempts have been made to encourage workers to use transit and other modes. CDTA has offered discounted Swiper Cards, altered route schedules, offered suburban shuttle services and replaced older bus equipment with high-quality, 100 percent accessible buses, some offering bike racks. These and other improvements have led to increased ridership. CDTC's Transportation Demand Management efforts including a pilot transit program for state workers, the guaranteed ride home program and the commuter register also offer incentives to reduce single occupant vehicles on the roads. However, all non-auto modes remain low for work trips due to the dispersion of jobs and housing and the complex lifestyles of Capital District residents.

The bottom line for the Capital District is that much of the recent growth in housing and private business has occurred in conventional suburban development and rural areas, despite limited regional population growth. This development has occurred at the expense of many urban core

areas, which suffer from a variety of urban problems. In recognition of these concerns, *New Visions* helped to set a course for future transportation investments that would support urban revitalization, economic development and bicycle and pedestrian friendly facilities. This effort set the stage, and the flexibility in federal transportation funding provided some of the means, for significant changes in how communities are designed. Down the road through 2030, new development, if planned carefully, could take a much different form than what has been seen in recent years. The only question is, at what pace will future development occur.

### The Region in 2030

*New Visions*, ISTEA and its successor TEA-21, have all changed how transportation projects are funded, designed and implemented in the Capital District. One of the most important changes is the recognition that transportation investments have a significant impact on land use and land use has a significant impact on transportation. It can be debated which is the stronger relationship but the fact remains that the two tremendously influence each other. Other state and national initiatives such as the Smart Growth movement, the New Urbanism movement and Governor Pataki's Quality Communities Task Force have also brought attention to the link between transportation and land use. As has been discussed, the growth of Capital District suburbs has occurred as many urban areas in our region have faced declines. To help counter this trend, several new programs have been developed to encourage "quality communities" with some of the resulting projects beginning to be implemented. These early efforts and the many others to be undertaken soon could result in some significant changes in future regional development, which could influence regional travel choices for all.

### Smart Growth/Quality Communities

The smart growth/quality communities efforts being undertaken nationally, statewide and locally are beginning to change how planners view their communities and the development occurring within them. Smart growth/quality communities result from land use planning that protects open space, encourages mixed uses, encourages redevelopment and infill in previously developed areas, and designs to the scale of the human, not the automobile. In many recently developed communities, these aspects of community design have largely been ignored or implemented only on a limited basis. The resulting land use pattern of lower density development with a high degree of auto use has led some to believe that current development patterns are not only harming the transportation system but are degrading regional quality of life and will ultimately be unsustainable.

In order to encourage local communities to change past sprawl inducing development patterns, a number of educational programs, policies and fund sources have been developed by the state and other organizations. The overall theme of these programs is to encourage community design that is both attractive and functional while also offering residents alternatives to the automobile. Some of the many programs/fund sources are CDTC's Transportation and Community Linkage Planning Program, Governor Pataki's Quality Communities initiative and FHWA's Transportation and Community and System Preservation program.

Many local land use/transportation studies are focusing on what the desired future development pattern should be in a given corridor or sub-area of a municipality. Some of the most recent studies addressing this issue include the *NY 5 Central Avenue and State Street Land Use and Transportation Study*, the *North Albany Waterfront Redevelopment Plan* and the *Glenville Town Center Master Plan*. Some of the common themes in the findings of these both large and small scale, urban and suburban studies include the following:

- Increasing economic activity while improving local and regional access.
- Development of mixed use areas at high density (or somewhat higher density than may currently be present in a suburban setting, for example).
- Supporting a multi-modal transportation system including, where possible, designing to the scale of the pedestrian while continuing to maintain automobile accessibility.
- Creating a sense of place.
- Supporting redevelopment and infill development in previously developed areas.

These studies, and many more, are all pointing to a regional future development pattern that essentially returns the region to its roots: communities focused on walkable neighborhoods that offer residents choices in how they live, work and recreate. The concepts most clearly articulated in the New Urbanism movement are in fact at the core of many of these studies. According to the Charter of the Congress for the New Urbanism: “We stand for the restoration of existing urban centers and towns within coherent metropolitan regions, the reconfiguration of sprawling suburbs into communities of real neighborhoods and diverse districts, the conservation of natural environments, and the preservation of our built legacy” [5]. Although the New Urbanism has its skeptics, the premise of offering choices in housing and transportation is one that many local communities are beginning to embrace.

Locally, private developers are beginning to incorporate elements of the New Urbanism in their projects. One project of particular note is the Excelsior Park neighborhood development in the City of Saratoga Springs. Plans for the 54 acre area include 230 residential units, 130,000 square feet of commercial space and 26 acres of open space including wetlands, woods and walking trails. The commercial space would include retail stores, a beauty salon, a deli and a hotel [6]. Despite the seemingly high density, current plans actually represent a downsizing of the original concept which included far more residential space. City residents complained that the project would add more traffic onto an already congested Route 50. However, the developers feel that mixing neighborhood commercial with residential land uses will actually reduce the number of trips made by car and offer residents choices in how they want to live. Ultimately, the goal is to get residents walking.

As more and more local planning activities are undertaken, the region in 2030 could be one that is more compact and offers more choices than ever before. The question that remains is the pace at which this growth may occur. If it is too much too soon, much of the development will follow its current form of conventional suburban development. Given enough time, local municipalities may complete plans and make the necessary zoning and design standard changes that will enhance quality of life through more traditional design concepts. Although not all areas and not all communities will embrace or may even be appropriate for traditional development, offering

choices will help to keep the regional transportation system from being totally dominated by one mode: auto travel.

### Urban Revitalization

All of the cities in the Capital District, regardless of size or demographic profile, are undergoing revitalization efforts, especially in the traditional neighborhoods and urban core. Recently, under Governor Pataki's Albany Plan, state workers were relocated to new office buildings in downtown Albany, designed to fit in with surrounding historic buildings. The goal of the plan is to return the City of Albany to its roots as the center of state government in New York [7]. This plan and the Governor's Main Street Initiative benefit other cities as well as state workers in regional offices are relocated to downtown areas in Schenectady and Troy, for example. Other development efforts being considered in urban core areas are new convention centers, downtown entertainment complexes, new hotels/private office space, historic building renovations, brownfield redevelopment and waterfront redevelopment for recreational and social activities. All of these efforts represent an attempt to stimulate downtown revitalization, increase the activity in urban core areas and stimulate local economies.

However, a complete revitalization of urban core areas and traditional neighborhoods in cities will not occur without increasing the number of residents and, perhaps more importantly, owner occupied housing. There are a number of programs in place at the national, state and local levels that offer incentives for Capital District residents to return to downtown areas. Home ownership programs and community development block grants are just two of the techniques being used to improve the housing side of urban revitalization. They particularly benefit those that could not afford to own homes before. Down the road, the potential for relaxed building codes could make rehabilitation of older housing cheaper and easier. There are also plans for new housing in urban areas, especially for lower income residents, and plans are in the works for improving schools.

Work done by the *New Visions* Growth Futures Task Force, using CDTC's Land Use Pivot Model and STEP Model, concluded that an urban reinvestment scenario would have significant benefits to the regional transportation system. Some of the specific findings include a potential 5.1 percent reduction in VMT on the Northway and a 9.6 percent reduction in excess person hours of delay for the entire Capital District transportation system by the year 2015 [8]. If urban revitalization efforts are successful and larger issues such as housing and school quality are addressed, then the opportunity to reduce dependence on cars and increase the amount of walking and trips by transit would increase by 2030. However, the overall benefits of urban revitalization could be somewhat limited if the Capital District grows slowly in population and employment. Slow growth would cause the overall regional development pattern to change very little in the next 30 years.

### Business/Office Location

Although New York has worked to move state offices back to urban core areas throughout the Capital District, many private businesses in the new economy are no longer required to locate in these areas. Instead, businesses are more concerned with the bottom line and satisfying the desires of their employees (especially in a tight job market) and this has resulted in locating

where workers live, generally in the lower cost suburban areas. This trend has led to increased suburban office development, especially in large office parks leading to increased suburban traffic congestion. Multi-income families have also contributed to the increase in suburban traffic as jobs for all household members are rarely in the same community as their residence. The lack of transportation choices in these areas has led to increased use of the car. As technology improves and high speed internet access is provided in a greater number of suburban and rural communities, the shift of private businesses to suburban locations will likely increase, especially if there is increased economic activity in the region through a high tech economy.

The potential for a high tech economy in the Capital District, which would bring computer chip manufacturing plants to the area, could transform the regional land use pattern in the future. The sites for which these kinds of facilities are best suited are generally found in suburban and rural areas. They require very large sites with ample green space, large water supplies, access to major transportation facilities and locations that are fairly easy to develop due to the short lifespan of the plants. Urban core and traditional urban neighborhoods are too densely developed and do not have large enough sites to support this kind of manufacturing. Although brownfield sites could potentially accommodate these businesses, the cost of remediation may make these sites cost prohibitive. For these reasons, it is very important for suburban and rural communities to begin to plan for the potential side effects that may result if rapid high tech development occurs. If development occurs too quickly, communities may be overwhelmed and unable to accommodate the growth, leading to increased traffic congestion.

### Trip Generation/Travel Behavior

There are many urban form characteristics that can impact trip generation and travel behavior, especially as they relate to automobile travel. Some of these characteristics are development density, land use mix, parking facility design and building design and orientation. Additional characteristics include the connectivity of the road system and streetscape design [9]. Although there is conflicting information from research as to the degree of automobile reduction in traditional neighborhood development and the real value of New Urbanism in community design, there is a great deal of support for providing residents with as many transportation choices as possible. Traditional neighborhood developments are generally seen as the most efficient way of meeting this goal.

Traditional neighborhoods built to the scale of the pedestrian with higher building densities, offer residents more transportation choices as they can walk, bike or use transit to reach a wide variety of destinations that are in close proximity to each other. Conventional suburbs, built to the scale of the automobile with lower building densities, are often difficult to serve with transit and walking and biking facilities are generally provided for recreation. A study by Friedman, et. al. found that automobile trips in suburbs are 23 percent higher than in older, traditional communities [10]. Some research is beginning to show that new developments built using traditional design principles do reduce the use of cars. Reston Town Center in northern Virginia, which was built using New Urbanism principles, contains 1.7 million square feet of commercial space and over 334 residential units. Research there has revealed that automobile trips were reduced by over 45 percent in both the morning and afternoon peaks as compared to what would have been expected if the project had been built as a conventional suburban development [11].

There are other studies that support the conclusion that the number of vehicle miles driven by residents of traditional neighborhoods is less than those in conventional suburban developments. Research conducted by Reid Ewing and Robert Cervero indicates that neighborhood design factors that favor higher densities, greater land use mix and improved urban design can reduce vehicle travel per capita by 10 to 20 percent. A traditional neighborhood development located near an urban center can reduce automobile travel even more, by as much as 20 to 40 percent [12]. Another study showed that if income level is controlled, households in traditional neighborhoods had nearly 50 percent less vehicle miles traveled than those in conventional suburban development areas. This is again directly related to residential density. When densities reach at least 20 households per acre, the greatest VMT reductions are seen when compared to a residential area with densities of two households per acre [13].

There are some concerns regarding the research on urban form and travel behavior. One concern is that higher density urban form principles may not necessarily reduce the overall amount of travel per capita. Where jobs are located close to housing, for example, trips by car may be reduced due to the close proximity of a job to a worker's home. However, this may not reduce the total number of trips due to outside factors such as personal errands or activities located in other areas. Another concern is that vehicle trip rates in traditional neighborhood settings may be higher overall as destinations are more accessible and the cost per trip is actually lower than in more suburban settings, leading to more frequent but shorter vehicle trips [14]. Finally, VMT in many ways reflects the overall accessibility of the region. Although traditional neighborhood development is beneficial at the local scale, traditional neighborhood development scattered throughout a region would likely have modest travel benefits [15]. This is due, in large part, to the need for individuals to travel to other higher density areas that offer different social, recreational, job or shopping opportunities.

As stated earlier, regardless of the research that has been conducted to date, few can deny the desire to offer people choices in transportation. Until recently, much of the new residential development constructed in the Capital District has been in conventional suburban development areas with lower densities and limited bicycling, walking or transit options. Some higher end developments have incorporated sidewalks or walking trails but these have largely been for recreational purposes. Communities have now come to understand that this type of development only encourages greater use of the automobile for travel, thereby contributing to traffic congestion. As stated earlier, municipalities and some developers have begun to incorporate the principles of traditional neighborhood development in their plans and development proposals. Initially, the benefits of these projects may only be seen at the local level. However, by 2030, as more projects are developed throughout the region incorporating traditional design elements, more transportation options could be made available throughout the region than ever before.

## **Market Group Impacts**

The future of the Capital District could be one in which there is a diverse landscape of urban, suburban and rural communities, each attempting to create a sense of place within its borders through more traditional urban design. Preservation of existing neighborhoods is now and will remain a high priority for municipalities throughout the region. However, it is also possible that market demands for new development could be toward more traditional forms as called for by

New Urbanists, creating higher quality neighborhoods. More traditional development patterns coupled with preservation of existing neighborhoods would offer municipalities the opportunity to build a comprehensive, high quality regional multi-modal transportation system. Such a system would greatly impact the travel behavior of the market groups. The matrix on the following pages describes many of the current mobility issues of the market groups. It is supplemented by a description of how those market groups would be impacted if the 2030 land use pattern shifted to reflect more compact, traditional development styles that offer greater transportation choices.

## Mobility Issues of Market Groups

		Urban Core	Traditional Urban Neighborhoods	Town/Village Centers	Conventional Suburban Development	Rural
<b>Working Couples with Dependents</b>	<b>General</b>	Walk, bike, transit, taxi and auto options are available as needed. Auto usage can be kept down due to the availability of other modes, although presence of dependents will generally increase travel by private automobile. <b>Parking can be an issue making ownership of multiple vehicles particularly difficult even if warranted for travel needs. Inefficient trip chaining may result from the complex travel requirements of the household.</b>	All transportation modes are available to the household, <b>although distances between residences and services are greater and transit routes may be limited to specific corridors.</b> The use of personal vehicles is greater due to their convenience. <b>Parking may be an issue for households with more than one car or with dependents that have limited walking ability. Inefficient trip chaining may result from the complex travel requirements of the household.</b>	<b>Household members may be able to walk or bike to some services. Transit service may connect to urban cores or major employment centers but is somewhat limited for local trips,</b> decreasing its attractiveness for both working individuals and dependents. <b>Taxi usage is possible, but at a higher cost</b> than in urban areas due to longer trip lengths. An automobile may be essential to completing daily tasks in a timely manner and to reach services or activities outside of these areas.	<b>Can walk or bike to few, if any services. Transit service is quite limited, if available at all. Taxi service may be used on occasion at high cost.</b> Nearly all transport is by private vehicle resulting in <b>this group having the highest average number of vehicles available per household and the highest vehicle usage. Inefficient trip chaining may result from the complex travel requirements of the household. Dependents may be able to make few, if any, trips on their own.</b>	<b>Extremely limited options for walking or transit.</b> Very limited access to nearby services. <b>Taxi service may be very limited and high cost.</b> Nearly all transport is by private vehicle, with <b>long trip distances. Trip chaining may be essential to complete errands in a timely manner. Dependents may be able to make few, if any, trips on their own.</b>
	<b>Low Income</b>	<b>May not be able to afford a private vehicle, limiting time of day flexibility, access to job opportunities, and reducing the access of dependents to activities and services. Taxi service is an option but at a high cost per trip. May rely on carpools or other ride-sharing arrangements for some trips. Greater reliance on transit, walking and bicycling.</b>	<b>May not be able to afford a private vehicle. Taxi services may be cost prohibitive. May rely on carpools or other ride-sharing arrangements for some trips. Greater reliance on transit, walking and bicycling.</b>	<b>May not be able to afford a private vehicle but is generally the preferred mode of travel, resulting in the purchase of a private vehicle despite the high cost. Taxi services may be cost prohibitive. Greater reliance on carpools or other ride-sharing arrangements for travel. Continued use of transit, walk and bike options, where feasible.</b>	<b>Access to a private vehicle is the preferred mode, despite the tremendous cost. This may lead to owning and operating a private vehicle, consuming a large portion of available income. Taxi services may be cost prohibitive. Greater reliance on carpools or other ride-sharing arrangements for travel. Transit, walk and bike options are limited.</b>	<b>Access to a private vehicle is the preferred mode, despite the tremendous cost. A large portion of household income may be spent on owning and operating a private vehicle. Greater reliance on carpools or other ride-sharing arrangements for travel. Transit, walk and bike options are extremely limited.</b>
	<b>Mobility Impaired</b>	Accessible transit services helpful (including STAR), <b>but are unable to meet daily work travel requirements. Accessible taxis are limited. Cost of special services may be high. Work trips may require reliance on friends and family, creating a sense of dependence.</b>	Accessible transit services helpful (including STAR), <b>but are unable to meet daily work travel requirements. Accessible taxis are limited. Cost of special services may be high. Work trips may require reliance on friends and family, creating a sense of dependence.</b>	STAR service is somewhat helpful for those who live along fixed-route transit, <b>but is unable to meet daily work travel requirements. Taxi service is available but may not be accessible and may be cost prohibitive. Work trips may require reliance on friends and family, creating a sense of dependence.</b>	<b>Accessible transit services are quite limited. Taxi service is very costly and paratransit service may be extremely limited. Work trips may require reliance on friends and family, creating a sense of dependence. Carpooling can be helpful unless the individual requires specialized service equipment.</b>	<b>Accessible transit services are extremely limited. Taxi service is very costly and may not be feasible. Work trips may require reliance on friends and family, creating a sense of dependence. Carpooling can be helpful unless the individual requires specialized service equipment.</b>
<b>Working Singles with Dependents</b>		<b>Singles with dependents have the same mobility needs as couples, however the individual burden is much greater.</b> There may be greater reliance on carpools for children and greater use of childcare services. There also may be greater use of non-auto modes by dependents, when possible. <b>The limited time available to complete daily tasks often necessitates use of a private vehicle, an option that may not be available to those with lower income and the mobility impaired.</b>				

Note: Bold type represents a mobility difficulty that market group members may face.

**Mobility Issues of Market Groups (continued)**

		Urban Core	Traditional Urban Neighborhoods	Town/Village Centers	Conventional Suburban Development	Rural
<b>Working Couples and Singles without Dependents</b>	<b>General</b>	Walk, bike, transit, taxi, and auto options are available as needed. This group has the greatest travel flexibility. Auto usage can be kept down due to the availability of other modes. <b>Parking can be an issue making ownership of multiple vehicles particularly difficult even if warranted for travel needs. The timing and location of non-work activities may require the use of a private vehicle.</b>	All transportation modes are available to the household, <b>although distances between residences and services are greater and transit routes may be limited to specific corridors.</b> May have greater travel flexibility than other groups. The use of private vehicles is greater due to their convenience. <b>Parking may be an issue for households with more than one car. The timing and location of non-work activities and some services may require the use of a private vehicle.</b>	<b>Household members may be able to walk or bike to some services.</b> Transit service may connect to urban cores or major employment centers <b>but is somewhat limited for local trips</b> , decreasing its attractiveness. <b>Taxi usage is possible, but at a higher cost than in urban areas due to longer trip lengths. The timing and location of non-work activities and some services may require the use of a private vehicle.</b>	<b>Can walk or bike to few, if any services. Transit service is quite limited, if available at all. Taxi service may be used on occasion at high cost.</b> Nearly all transport is by private vehicle.	<b>Extremely limited options for walking or transit. Very limited access to nearby services. Taxi service may be very limited and high cost.</b> Nearly all transport is by private vehicle, with long trip distances.
	<b>Low Income</b>	May not be able to afford a private vehicle, limiting time of day flexibility and access to job opportunities. <b>Taxi service is an option but at a high cost per trip.</b> May rely on carpools or other ride-sharing arrangements for some trips. <b>Greater reliance on transit, walking and bicycling.</b>	May not be able to afford a private vehicle, limiting time of day flexibility and access to job opportunities. <b>Taxi service is an option but at a high cost per trip.</b> May rely on carpools or other ride-sharing arrangements for some trips. <b>Greater reliance on transit, walking and bicycling at some inconvenience.</b>	May not be able to afford a private vehicle but is generally the preferred mode of travel, <b>resulting in the purchase of a private vehicle despite the high cost. Taxi services may be cost prohibitive.</b> Greater reliance on carpools or other ride-sharing arrangements for travel. <b>Continued use of transit, walk and bike options, where feasible.</b>	<b>Access to a private vehicle is the preferred mode, despite the tremendous cost.</b> This may lead to owning and operating a private vehicle, consuming a large portion of available income. <b>Taxi services may be cost prohibitive.</b> Greater reliance on carpools or other ride-sharing arrangements for travel. <b>Transit, walk and bike options are limited.</b>	<b>Access to a private vehicle is the preferred mode, despite the tremendous cost.</b> A large portion of household income may be spent on owning and operating a private vehicle. Greater reliance on carpools or other ride-sharing arrangements for travel. <b>Transit, walk and bike options are extremely limited.</b>
	<b>Mobility Impaired</b>	Accessible transit services helpful (including STAR), <b>but are unable to meet daily work travel requirements. Accessible taxis are limited. Cost of special services may be high.</b> Work trips may require reliance on friends and family, creating a sense of dependence.	Accessible transit services helpful (including STAR), <b>but are unable to meet daily work travel requirements. Accessible taxis are limited. Cost of special services may be high.</b> Work trips may require reliance on friends and family, creating a sense of dependence.	STAR service is somewhat helpful for those who live along fixed-route transit, <b>but is unable to meet daily work travel requirements. Taxi service is available but may not be accessible and may be cost prohibitive.</b> Work trips may require reliance on friends and family, creating a sense of dependence.	<b>Accessible transit services are quite limited. Taxi service is very costly and paratransit service may be extremely limited.</b> Work trips may require reliance on friends and family, creating a sense of dependence. <b>Carpooling can be helpful unless the individual requires specialized service equipment.</b>	<b>Accessible transit services are extremely limited. Taxi service is very costly and may not be feasible.</b> Work trips may require reliance on friends and family, creating a sense of dependence. <b>Carpooling can be helpful unless the individual requires specialized service equipment.</b>

Note: Bold type represents a mobility difficulty that market group members may face.

### Mobility Issues of Market Groups (continued)

		Urban Core	Traditional Urban Neighborhoods	Town/Village Centers	Conventional Suburban Development	Rural
<b>Independent Retired Elderly</b>	<b>General</b>	Can generally select walk, bike, transit, taxi and auto options as needed. Auto usage can be kept down due to the availability of other modes. <b>Concerns over personal safety may limit use of some modes. Parking can be an issue. May avoid travel at night, at peak times or in poor weather.</b>	All transportation modes are available to the household although <b>greater distances between residences, bus stops and services may decrease the attractiveness of non-auto modes.</b> Auto usage may be kept down due to the availability of other modes. <b>Parking may be an issue. May avoid travel at night, at peak times or in poor weather.</b>	Household members may be able to walk or bike to some services. <b>Transit service may connect to urban cores or major activity centers but is somewhat limited for local trips. Taxi usage is possible but often at a higher cost than in urban areas.</b> Private vehicle travel is likely to be the preferred mode. <b>May avoid travel at night, at peak times or in poor weather.</b>	<b>Can walk or bike to few, if any services. Transit service is quite limited, if available at all. Taxi service may be used on occasion at high cost.</b> Private vehicle travel is the preferred mode. Carpooling and rides from friends and family are also preferred. <b>May avoid driving at night, at peak times or in poor weather.</b>	<b>Extremely limited options for walking or transit.</b> Very limited access to nearby services. <b>Taxi service may be very limited and high cost. Private vehicle is the preferred mode.</b> Carpooling and rides from friends or family are also preferred. <b>May avoid driving at night or in poor weather.</b>
	<b>Low Income</b>	<b>May not be able to afford a private vehicle,</b> limiting time of day flexibility and reducing access to activities and services. <b>Taxi services may be cost prohibitive.</b> May rely on carpools or other ride-sharing arrangements for some trips. <b>Greater reliance on transit, walking and bicycling.</b>	<b>May not be able to afford a private vehicle. Taxi services may be cost prohibitive.</b> May rely on carpools or other ride-sharing arrangements for some trips. <b>Greater reliance on transit, walking and bicycling.</b>	<b>May not be able to afford a private vehicle but is generally the preferred mode of travel,</b> resulting in the purchase of a private vehicle despite the high cost. <b>Taxi services may be cost prohibitive.</b> Greater reliance on carpools or other ride-sharing arrangements for travel. <b>Continued use of transit, walk and bike options, where feasible.</b>	<b>Access to a private vehicle is the preferred mode, despite the tremendous cost.</b> This may lead to owning and operating a private vehicle, consuming a large portion of available income. <b>Taxi services may be cost prohibitive.</b> Greater reliance on carpools or other ride-sharing arrangements for travel. <b>Transit, walk and bike options are limited.</b>	<b>Access to a private vehicle is the preferred mode, despite the tremendous cost.</b> A large portion of household income may be spent on owning and operating a private vehicle. Greater reliance on carpools or other ride-sharing arrangements for travel. <b>Transit, walk and bike options are extremely limited.</b>
	<b>Mobility Impaired</b>	<b>Accessible transit and STAR services are helpful. Accessible taxis are limited. Cost of special services may be high,</b> except for Medicaid recipients served by Access Transit.	Accessible transit and STAR services are helpful. <b>Accessible taxis are limited. Cost of special services may be high,</b> except for Medicaid recipients served by Access Transit.	STAR service is somewhat helpful for those who live along fixed-route transit. <b>Taxi service is available but may not be accessible and may be cost prohibitive,</b> except for Medicaid recipients served by Access Transit.	<b>Accessible transit services are quite limited. Taxi service is costly and paratransit service may be extremely limited. Carpooling can be helpful unless the individual requires specialized service equipment.</b>	<b>Accessible transit services are extremely limited. Taxi service is very costly and may not be feasible. Carpooling can be helpful unless the individual requires specialized service equipment.</b>

Note: Bold type represents a mobility difficulty that market group members may face.

### Mobility Issues of Market Groups (continued)

		Urban Core	Traditional Urban Neighborhoods	Town/Village Centers	Conventional Suburban Development	Rural
<b>Dependent Retired Elderly</b>	<b>General</b>	No longer drive, reducing time of day flexibility. <b>Walking and bicycling may not be viable options. Transit usage may be difficult.</b> May live in facilities that provide transportation or eliminate the need to leave the facility for many services. <b>Greater reliance on friends/family members for travel, if any travel occurs at all.</b>	No longer drive, reducing time of day flexibility. <b>Walking, bicycling and transit use may not be possible. Have greater reliance on friends or family for transportation.</b> Various types of living facilities may provide transportation services.	<b>Physical ability and the lack of a personal vehicle for the members of this group restrict travel. Walking, bicycling and transit use may not be possible. Likely to be very reliant on friends or family for transportation.</b> Various types of living facilities may provide transportation services.	<b>Mobility is seriously restricted. Walking, biking, and transit are generally not options. Extremely dependent on family or friends for transportation.</b> Various living facilities may provide transportation or eliminate the need for travel.	<b>The most severely mobility impaired of any group. Extremely reliant on friends or family for transportation. Non-auto modes are generally not viable.</b> Without the help of friends or family, many members of this group may be housebound.
	<b>Low Income</b>	May not be able to afford a private vehicle, limiting time of day flexibility and reducing access to activities and services. <b>Taxi services may be cost prohibitive.</b> May rely on carpools or other ride-sharing arrangements for some trips. <b>Greater reliance on transit, walking and bicycling.</b>	May not be able to afford a private vehicle. <b>Taxi services may be cost prohibitive.</b> May rely on carpools or other ride-sharing arrangements for some trips. <b>Greater reliance on transit, walking and bicycling.</b>	May not be able to afford a private vehicle but is generally the preferred mode of travel, resulting in the purchase of a private vehicle despite the high cost. <b>Taxi services may be cost prohibitive.</b> Greater reliance on carpools or other ride-sharing arrangements for travel. <b>Continued use of transit, walk and bike options, where feasible.</b>	Access to a private vehicle is the preferred mode, despite the tremendous cost. This may lead to owning and operating a private vehicle, consuming a large portion of available income. <b>Taxi services may be cost prohibitive.</b> Greater reliance on carpools or other ride-sharing arrangements for travel. <b>Transit, walk and bike options are limited.</b>	Access to a private vehicle is the preferred mode, despite the tremendous cost. A large portion of household income may be spent on owning and operating a private vehicle. Greater reliance on carpools or other ride-sharing arrangements for travel. <b>Transit, walk and bike options are extremely limited.</b>
	<b>Mobility Impaired</b>	Accessible transit and STAR services are helpful. <b>Accessible taxis are limited. Cost of special services may be high,</b> except for Medicaid recipients served by Access Transit.	Accessible transit and STAR services are helpful. <b>Accessible taxis are limited. Cost of special services may be high,</b> except for Medicaid recipients served by Access Transit.	<b>STAR service is somewhat helpful for those who live along fixed-route transit. Taxi service is available but may not be accessible and may be cost prohibitive,</b> except for Medicaid recipients served by Access Transit.	Accessible transit services are quite limited. <b>Taxi service is costly and paratransit service may be extremely limited.</b> Carpooling can be helpful unless the individual requires specialized service equipment.	Accessible transit services are extremely limited. <b>Taxi service is very costly and may not be feasible.</b> Carpooling can be helpful unless the individual requires specialized service equipment.

Note: Bold type represents a mobility difficulty that market group members may face.

## Peak Versus Off Peak Travel

	<b>Peak Hour Travel</b>	<b>Off Peak Travel</b>
<b>Retired Elderly</b>	May choose to avoid the commuting peak hours most of the time, especially when congestion is perceived to be a problem.	May prefer to travel during the day after 9:00 AM and before 4:30 PM, contributing to off peak traffic and contributing to the need for quality transit service during the off peak hours.
<b>Working Households with Dependents</b>	Obligations for picking up or dropping off children on the way to or from work make carpooling to work difficult and may prevent using flex time options to avoid the peak hour traffic.	A higher level of carpooling (higher auto occupancy) may characterize off peak trips, including family trips, trips transporting children and arranging to share trips with other families going to the same activities. Many trips may be "dropping off" children, then returning later to the same location for pickup.
<b>Working Households without Dependents</b>	These households offer the greatest opportunity for carpooling and may use flex time at work to avoid peak hour traffic.	
<b>General</b>	Congestion is a part of the peak hour trip for many: for the commuting trip, this may be more tolerable if predictable each day; better access to transit, most frequent service in the peak hour; more opportunities to walk to work because the work trip is predictable each day; trips are more predictable because of commuting, yet flexibility in work hours and diverse trip chains on the way home make carpooling difficult for many. Increasingly, retail and services will locate to take advantage of trip chaining on the way home.	Most auto travel is congestion free; trips are more diverse and variable from day to day, with multiple destinations; access to transit is more difficult; along major arterials, somewhat limited opportunities for walking trips.

## Couples and Singles without Dependents

*Smart Growth/Quality Communities:* This market group is likely to embrace smart growth/quality communities efforts that may offer multi-modal transportation options in the future. Couples and singles without dependents, both young and old, have great flexibility in housing choices, location choices and transportation choices, generally due to the lack of dependents. The desire for mixed use development may be stronger with this group as they are more likely to seek out entertainment and activities outside of the home and want to benefit from the social interaction that mixed use communities can offer. From a transportation standpoint, they typically have more time to devote to walking instead of driving due to the reduced number of people in the household. This could lead to more walking in neighborhoods where all of these activities are located near housing and it could also lead to more bicycling and even transit use, where reliable service and access to activities is provided.

One potential drawback to the smart growth/quality communities movement is if new developments are constructed far from existing urban core, urban neighborhoods, transit oriented arterials or other major activity centers. Distant and disconnected neighborhoods are generally not supportive of a multi-modal transportation system. The end result of such development is that even in this market group, overall automobile travel would not likely be reduced. This group may be able to reduce some local automobile trips, more so than others, but the likelihood of high quality transit being provided to serve local neighborhoods far from urban centers is relatively low. Disconnected development could also lead to more frequent local auto trips if the community is designed to make automobile access easy, resulting in more but shorter local trips. In the end, smart growth/quality communities may offer the members of this group some transportation benefits at the local level but regional transportation benefits are likely to be minimal unless additional incentives are offered to use other modes.

*Urban Revitalization:* Revitalized urban areas are more likely to attract the members of this group for many of the same reasons that smart growth/quality communities attract them. A key difference, however, is that the scale of benefits to be gained from revitalized urban areas are much greater than in new traditional neighborhoods built on the urban fringe. The lack of dependents reduces the criteria for location choices, increasing the flexibility of the members of this group to locate in urban areas where schools and higher taxes scare larger families away. With an historic housing stock and growing interest in home restoration, the additional disposable income of those without dependents could help each household contribute to urban revitalization. Some members of this group may even be able to reduce the number of cars in their households if enough jobs, services and activities are located in urban areas, reducing the need for auto travel.

Urban revitalization would positively impact the regional transportation system as well as reduce sprawl. It would also greatly improve the quality of life for many members of this market group. More and more, young and older people without dependents are searching for more interesting, vibrant, 24 hour a day living environments with many activities in close proximity to housing. Currently, only urban areas can meet these demands and urban revitalization efforts will make these areas even more attractive as an alternative to the suburban lifestyle. Although many members of this group will benefit from urban revitalization, there will be some with negative

perceptions of urban life and strong connections to suburban and rural living that will continue to locate in these areas. This could increase the demand for smaller suburban and rural housing. Ultimately, the personal preferences of the members of this group may dictate their location choices, even if the end result is more auto dependence.

*Business/Office Location:* Couples and singles without dependents are generally more interested in living in vibrant, high quality areas than being close to their jobs, although that does have its benefits. They are also less likely to care whether their job is in an urban or suburban area than the members of other groups. Businesses/offices that locate in the urban core, the traditional center for business, are now and will likely remain well served by transit in the future. For those without dependents, the more businesses locating downtown and the more vibrant the social scene, the more likely workers will live in urban neighborhoods, thereby reducing auto dependence. However, if more businesses/offices locate in suburban and perhaps rural areas, the members of this group may opt to relocate to surrounding suburban areas, if the business locations are far from existing urban neighborhoods. The desire for a shorter driving commute may be strong with this group to save time for other social activities.

*Trip Generation/Travel Behavior:* Today, many singles without dependents live in apartment housing, most of which is found in suburban apartment complexes, student housing or in the urban core or traditional urban neighborhoods. Couples without dependents may live in these same settings or may live in smaller, single family homes anywhere they desire. For those in the suburbs, many complexes and single family homes are not found on bus lines and lack bicycle and pedestrian facilities, resulting in the need to drive to most of their destinations. However, even in urban areas, jobs may be shifting to suburban locations that are not well served by transit, again necessitating driving. For those fortunate enough to have their job near where they live, they may choose to walk, bike or take transit, where available. Unfortunately, non-work activities in distant areas may require the use of a car for most trips in order to save time. Also, the complexity of two income families in which household members work in different, and sometimes distant, communities from their residence may also lead to more driving.

Land use planning that creates more vibrant walkable communities in either urban areas or in new suburban locations may likely change the travel behavior of this market group the most. As stated earlier, future local automobile trips can be reduced by mixing uses and providing transportation alternatives to the car. This, coupled with traditional neighborhood development patterns could provide the incentive to change the travel behavior of this group which is more flexible than that of other groups. This could mean that there are far less local automobile trips generated than walking trips. However, longer distance automobile trips to places of work or to non-work activities may not be reduced without adequate transit service or additional incentives. That said, the travel behavior of this market group could be critical in the future as household sizes continue to decline and the number of empty nest type households continue to rise.

#### Couples and Singles with Dependents (Children and Dependent Adults)

*Smart Growth/Quality Communities:* Couples and singles with dependents may not be as likely to live in higher density neighborhoods as other groups due to larger housing preferences requiring more land for dependents, especially children. However, if higher density smart

growth/quality communities are designed to accommodate families, then this market group may be willing to embrace them due to their other social and recreational benefits. The challenge will be creating affordable communities for those who could most benefit from them. Singles with dependents may especially benefit as having stores located near housing would save a great deal of time for other activities. Well designed communities may also provide opportunities for replacing some automobile trips with walking trips for both couples and singles. The mobility of non-driver dependents may also increase as they can walk, bike or in some cases use transit to access activities that would otherwise require a ride from a caregiver.

The members of this group have complex lifestyles, especially women who have traditionally been responsible for running many of the household errands. Time constraints and the individual mobility of dependents often reduce the ability of caregivers to use non-auto modes for anything other than recreation. The burden is especially high on single parents who are tending to dependents on their own. Driving will likely remain the mode of choice for many in this group due to its convenience and the lower overall travel time for errands, even in neighborhoods where stores are located near housing and other transportation options are offered. The end result is that travel may remain auto oriented as it is far more flexible than other forms of transportation, as long as driving remains affordable. From a regional standpoint, they are not likely to alter their travel behavior significantly from those that live in conventional suburban areas and in fact may drive more if smart growth communities are far from larger activity centers or from jobs.

*Urban Revitalization:* As with couples and singles without dependents, the benefits of revitalized urban areas, in particular urban neighborhoods, would be enhanced and on a larger scale than in smart growth/quality communities outside of urban areas. Aside from their transportation benefits, revitalized urban areas would help to preserve open space, conserve resources and reduce sprawl. However, the difficulty of revitalizing urban neighborhoods for couples and singles with dependents is resolving the problems of urban life (whether perceived or real) that currently keep many of them out. Overcoming issues such as poor school quality, small or outdated housing, high taxes and racial/economic integration will be critical to attracting families back to urban neighborhoods in the future. Location choices for this group are also greatly influenced by income as those with low income have few options for owning their own homes. Renters generally locate in older urban areas but revitalization could bring with it higher living costs, forcing some of these households out to other areas.

The transportation benefits of revitalized urban areas could be great as these areas are easy to serve with transit, have sidewalks and offer lower speed roads on which to ride bicycles. If enough jobs and activities locate near housing in these areas, then the need to drive for every trip will be greatly reduced. Reduced trip lengths could also help these households save time for other activities, especially for the overburdened singles with dependents. However, lifestyle complexities may make using transit and walking inconvenient for those with dependents due to the heavy demands on their time. As a result, those that own cars will likely use them, even for short trips, unless higher parking costs, reduced parking availability or other actions are taken to make driving in urban areas inconvenient. More driving in urban areas would result in few regional transportation benefits and little change from the travel behavior of those in conventional suburban areas.

*Business/Office Location:* For those with dependents, location choices are often made based on what is best for dependents. Job location, and therefore the trip to work, is often a secondary consideration. Having jobs near housing would greatly benefit this group as shorter commutes would save time for other activities. It would also increase the availability of individuals for dependents when needed. Unfortunately for couples, it is generally not possible to have both jobs located in the same community resulting in one individual making a longer, somewhat more inconvenient commute than the other, usually in a car. However, if at least one person has their job near home, then it may be possible for that person to walk, bike or use transit where facilities are provided, especially in revitalized urban areas. This is less likely for singles with dependents as they may feel that access to a car is critical at all times for reaching dependents when needed. Although business/office location by itself may not be enough to reduce auto use for those with complex lifestyles and travel demands, additional incentives could encourage some members of this group to shift to non-auto modes for their commute.

*Trip Generation/Travel Behavior:* Couples and singles with dependents have the most complex travel behavior of any group and it often varies from day to day, week to week. This is especially true for singles and much of this travel is completed in cars. Traditional neighborhood development and mixed uses would provide the greatest benefits to this group as trip lengths would be reduced, potentially saving time for other activities. Dependents that can not drive would also benefit from the improved access to their activities through the provision of high quality walking, transit and even bicycling facilities. This may help to reduce overall household automobile trips. However, shorter trip lengths may simply entice residents to drive to shopping or other destinations more often so that even more time is saved for other activities. Overall, the travel behavior of those with dependents would likely be the most difficult to influence through urban design alone. Additional incentives, perhaps financial, would need to be offered to encourage the use of non-auto modes as congestion alone has not forced many to seek alternatives to the car.

### Independent Elderly

*Smart Growth/Quality Communities:* The independent elderly are likely to embrace smart growth/quality communities as these areas would offer tremendous benefits. Smart growth communities in suburban towns may particularly attract the independent elderly as many raised their families in these areas and do not want to be far from what they know. This group may also enjoy the social aspects of walkable communities along with the smaller single family homes, townhomes or apartments generally associated with more traditional urban design. Residential areas that offer maintenance free living will be particularly popular. The flexible personal schedules of the independent elderly may also make walking, transit or even bicycling viable transportation options, especially if services are frequent (including off-peak times) and destinations are relatively close to home. Walking trails and other recreational opportunities would also greatly benefit this group.

Although destinations in smart growth/quality communities may be more accessible for the independent elderly than in conventional suburban developments, many local trips will continue to be made by driving. Some auto trips will be out of habit or for safety reasons but others will be made as the elderly volunteer or work part time at jobs far from their place of residence. The

regional impacts of smart growth/quality communities are also likely to be mixed for the independent elderly. As these individuals are retired from their full time careers, their peak hour commute trip to and from work is no longer impacting the regional transportation system. Many independent elderly will in fact avoid travel at these peak times. However, the reduction in peak hour travel may be offset by an increase in off-peak travel by car, particularly for vacations, sightseeing or other longer distance shopping, cultural or recreational trips throughout the region. Because the independent elderly will be driving much later in life and in greater numbers than in previous generations, driving will likely remain their primary form of transportation. This will result in road safety for older drivers being a critical issue in the future.

*Urban Revitalization:* The independent elderly would benefit from revitalized urban neighborhoods even more so than the development of smart growth/quality communities neighborhoods. Obviously, the scale of benefits would be much greater in these areas including greater access to the arts, cultural and social activities that only an urban area can provide. Revitalized urban areas would also benefit those that need to continue working in part time positions by increasing the access of the independent elderly to nearby jobs. As these areas are well served by transit and offer numerous walking and biking opportunities, the need for a car for every trip is greatly reduced, especially if the area is perceived to be safe. Revitalized urban neighborhoods also offer the type of housing the members of this group would likely prefer, generally smaller in size with less outdoor maintenance. Overall, for those that are willing to embrace a more active and vibrant lifestyle within their communities, revitalized urban neighborhoods would likely offer the members of this group the greatest benefits.

*Business/Office Location:* Since the members of this group retired from their full time careers, the location of businesses/offices in terms of their commute to work is not really relevant. What is relevant is the access the independent elderly have to doctors, banks and other services. If these services continue to locate in suburban offices parks or corridors outside of urban areas not well served by transit, the independent elderly may need to drive greater distances to access them. This is especially critical as long time residents of the area are likely to remain loyal to certain physicians or banks and will go to them regardless of where they are living. However, if more services locate in revitalized urban areas or in communities designed using smart growth/quality communities principles, transportation benefits may be realized as walking, transit and even biking become viable options. The impact the independent elderly could have on regional travel with respect to business/office location is that the amount of off-peak travel could increase, potentially leading to new areas of congestion as the population ages.

*Trip Generation/Travel Behavior:* As stated previously, these individuals are retired from their full time careers and are likely to avoid travel at peak times. Their flexible daily schedules allow more time to walk, bike and use transit for some of their trips, especially in the well served urban areas during the work week. As a result, two person households may be able to own only one automobile which reduces transportation costs and encourages the use of non-auto modes. On the other hand, more time could mean that as the independent elderly seek out cultural, social and recreational activities, more driving could be required and travel could be over greater distances. It is also likely that due to the isolation that can occur with retirement, more trips could be made overall for social activities.

As the overall mobility of the independent elderly declines with age, revitalized urban areas and smart growth/quality communities may offer the greatest opportunities for this group to access activities without having to rely on the car. This will be especially true in safe, clean neighborhoods that offer numerous and reliable transportation options and highly accessible destinations. However, with more independent elderly driving later in life, it will be difficult for many to give up their cars in favor of other modes due to the convenience driving offers.

### Dependent Elderly

*Smart Growth/Quality Communities:* The dependent elderly clearly have mobility problems that community design may not be able to resolve. However, smart growth/quality communities could offer these individuals higher quality living arrangements that may offset some of their mobility restrictions. In the future, assisted living facilities may be constructed as part of tight knit, mixed use communities that reduce the travel distance for visitors, caregivers or others that need to assist these individuals. These facilities may also offer basic services such as barbers, banks, doctors, etc. to their residents on site and may even offer transportation. Unfortunately, due to the mobility/health problems that these individuals may have, many will be unable to leave the facility. Therefore, the location of these facilities is likely to be more important to family members trying to access them.

The dependent elderly can not drive themselves to services or other activities. For those that remain in their own homes, smart growth/quality communities may bring services to nearby locations, increasing the mobility of those who can access para-transit services or use taxis. Well designed communities may also reduce the cost of transportation for those that are largely homebound. However, these individuals will not directly benefit from the presence of sidewalks, trails or even fixed transit routes as they will be physically unable to use them. Of greater importance, however, is that well designed communities will better match those who can not leave their homes with those that can offer assistance. Shorter trip lengths and greater transportation options to access the dependent elderly will allow caregivers to save time for other activities. Shorter trip lengths will also reduce the drive time of an elderly caregiver that is facing their own mobility challenges. Overall, the dependent elderly are the least mobile of any market group, regardless of community design.

*Urban Revitalization:* As with other groups, revitalized urban areas offer the dependent elderly benefits on a scale much larger than smart growth/quality communities. Urban areas traditionally offer easy access to medical facilities and other services for those not living in assisted living facilities. Because these individuals are dependent on others for transportation, urban areas provide the most options in terms of human service agencies, senior vans, taxis, more frequent transit service and other transportation for seniors. Trip lengths are also likely to be shorter in urban areas, especially if basic services are located near housing. Unfortunately, this group would not benefit from most of the amenities of urban life as their physical status limits their travel outside of the home. Additionally, safety concerns, a history of suburban living and the choices caregivers may make with respect to housing and assisted living facilities may ultimately result in few dependent elderly living in revitalized urban areas.

*Business/Office Location:* As this group can no longer work or drive, their proximity to job opportunities and services is not relevant for their personal mobility. What is relevant is the ability of caregivers to either provide rides, access services or perform errands for those that live in their own homes. Mixed uses would decrease trip lengths for caregivers and well designed communities could offer caregivers alternatives to the car. They may even allow para-transit and taxi rides to remain viable transportation options for the dependent elderly. For those that live in assisted living facilities, many services can be provided to residents on site. In the end, the primary issue for the dependent elderly is the assistance from others for their transportation needs in as convenient a form as possible.

*Trip Generation/Travel Behavior:* The travel behavior of the dependent elderly is entirely dependent on others. Housing location and the proximity to doctors and other services greatly impact those providing rides. Therefore, communities designed with mixed uses, integrated housing styles and higher densities greatly reduce the burden on caregivers in terms of time and distance spent in travel. Taxis, para-transit or other elderly transportation services may be used where they exist by this group, if they are mobile enough to access them. Due to their mobility challenges, the dependent elderly will generate the least number of weekly trips and has the poorest overall mobility of any market group.

### Mobility Impaired

*Smart Growth/Quality Communities:* Future neighborhoods that incorporate smart growth/quality communities principles will improve the quality of life for the mobility impaired. Site designs that are oriented toward people, shorter distances between services, shorter distances between homes and jobs and high quality, ADA compliant pedestrian facilities will all benefit this group. The potential for new transit services in these areas could also open up new job, social or cultural opportunities for those that can not drive. Shorter trip distances could also mean reduced transportation costs for those who rely on taxis or other shuttle services for their transportation. The mobility impaired will highly benefit from good community design as their independence may be greatly improved.

*Urban Revitalization:* Revitalized urban areas could offer the mobility impaired even greater benefits than neighborhoods designed using smart growth/quality communities principles. As urban areas are already well served by transit, have sidewalks on nearly all streets and offer a mix of jobs, housing and services in close proximity to one another, those with mobility challenges are likely to have the greatest level of mobility in these neighborhoods. Urban neighborhoods can also offer additional cultural and social opportunities that can not be found in suburban areas, even in smart growth communities. Along with transit access, extensive taxi service and additional access to transportation offered by human service agencies are all likely to increase the mobility and independence of this group. A key aspect of urban revitalization will be to ensure that all transportation facilities and buildings are or become ADA compliant.

*Business/Office Location:* Regardless of whether businesses/offices are located in urban, suburban or even rural areas, locating them near residential areas would benefit the mobility impaired. An important benefit is that shorter trip lengths would reduce transportation costs and the time spent in travel. Site designs that account for the mobility impaired and access to transit

services are additional considerations that businesses/offices should incorporate into their location decisions. Addressing these issues would not only improve access to jobs for those with mobility challenges but it would also increase the accessibility of these areas for all market groups. As with other groups, the more dispersed businesses/offices are around the region, the more difficult they will be to access for the mobility impaired if they can only be reached by car.

*Trip Generation/Travel Behavior:* Higher density development in revitalized urban areas or smart growth development in suburban or rural areas could help to increase the number of trips made by this group. Increasing the accessibility and, therefore, the independence of this group would also inherently change their travel behavior. More trips might be made in non-auto modes where pedestrian facilities and transit fleets meet ADA guidelines. Lower trip lengths reduce travel costs and may free up time for other activities, leading to more travel for shopping, cultural or other activities. Although the overall amount of travel for this group might be lower than others, urban revitalization and smart growth/quality communities are likely to offer greater opportunities for the mobility impaired to be active in the community.

### Low Income

*Smart Growth/Quality Communities:* Household income may have the greatest influence on the mobility of the various market groups. Those with children and single parent households face great adversity when making location and transportation decisions. Low income households are particularly burdened by the high cost of owning a car which in some cases is vital to accessing jobs. However, communities that use good urban design practices, incorporate a mix of uses and offer a variety of transportation options including good walking/biking facilities and transit services, where possible, could reduce the need to own a car for low income households while also increasing their level of mobility. Unfortunately, a major drawback of the smart growth/quality communities movement in suburban areas is that housing tends to be expensive, often pricing low income households out of these areas. Mixing housing types for all income levels will be crucial in communities in the future.

*Urban Revitalization:* Low income households would benefit from urban revitalization, as long as affordable housing remains part of the mix. Urban areas can offer greater accessibility, safer walking and biking facilities, high quality transit service, lower cost transportation and a reduced need for a car. Shorter trip lengths also benefit lower income households as non-auto transportation generally requires more time in travel. The more businesses and services present in urban areas, the greater the opportunity for low income individuals to access jobs and conduct errands for basic household needs. Many urban communities are focusing revitalization efforts on home ownership programs that provide opportunities for first time, low income homebuyers, programs that may help to stabilize neighborhoods in decline due to absentee landlords. However, until the time comes that enough businesses and services return to urban areas, low income individuals will likely continue to seek job opportunities in suburban locations, increasing the need for high quality urban to suburban transit services.

*Business/Office Location:* Locating businesses near housing would benefit low income households as long as communities have good walking, biking and transit facilities. If more businesses/offices locate in urban areas, high quality transportation services are already in place

and can be improved upon easily if the demand exists. This would greatly increase job opportunities in areas where many workers live. However, if businesses/offices continue to locate at the urban fringe either in large office parks or at scattered locations along major arterials, the need to provide additional transit access to these areas will increase. Federal welfare to work programs are providing funds to transit agencies to increase the access to jobs for low income households, leading to new suburban transit services in the Capital District. It is likely that the demand for such services will increase in the future as those that work in many of the major retail stores, for example, do not live in the suburban areas in which they are located. If the imbalance of jobs and housing is reduced in the future through urban revitalization and smart growth/quality communities efforts, then the quality of life for low income households may be greatly improved.

*Trip Generation/Travel Behavior:* The overall trip generation of low income households is lower than that of other market groups, regardless of household composition. The lack of an automobile reduces the opportunity for discretionary travel and household errands must be conducted in specific periods of time. As a result, many trips made by low income households are made by getting a ride from someone with a car due to poor transit schedules and the time lost in travel when using transit.

However, smart growth/quality communities and revitalized urban neighborhoods could change that as businesses and other activities become more accessible. Communities with mixed uses, greater bicycle, pedestrian and transit access and affordable housing would greatly increase the independence and mobility of this group. Unfortunately, if communities do not consider the needs of low income households in development plans then many will be priced out of these areas. Rural low income households would likely have the greatest transportation burdens of all groups as they would either be forced to buy a car or would need to heavily rely on others for their transportation. Ultimately, maintaining and enhancing choices in transportation for low income households will be critical in the future in order for this group to be actively engaged in community activities and the job market.

### Non-drivers

*Smart Growth/Quality Communities:* Increasing transportation choices through community design would greatly benefit those that do not drive. Higher density, walkable, mixed use communities would allow non-drivers without mobility impairments to walk, ride a bicycle or use transit, greatly increasing the independence of this group. Good community design would also enhance non-driver access to jobs, services and shopping that is currently not provided in conventional suburban developments. For those that do not drive due to mobility impairments, smart growth/quality communities may offer a higher quality of life through increased mobility. However, suburban areas adopting these principles are not likely to offer the same level of services that can be found in traditional urban downtown areas, resulting in non-drivers receiving more limited benefits than may be hoped for.

*Urban Revitalization:* Revitalized urban areas would offer non-drivers greater levels of mobility than can be found in other land use scenarios. Benefits would likely include greater shopping and job opportunities through greater transportation options and an overall reduction in trip

lengths as the majority of errands could be run within the urban area. The transportation benefits would include pedestrian and bicycle friendly streets and neighborhoods and the highest quality, most frequent transit service. These benefits are especially felt by non-drivers without mobility impairments although the mobility impaired would also benefit from the additional services that urban areas can provide. Again, the highest level of transportation choices can be offered in urban areas and revitalization efforts that further increase the level of activity in these areas will provide tremendous benefits to non-drivers.

*Business/Office Location:* Non-drivers are at the greatest disadvantage when trying to seek employment outside of the home. With more jobs locating in suburban and rural areas, the lack of a car can reduce job opportunities, particularly with shift jobs that may begin or end at odd, off-peak hours. Again, the closer jobs and services are to residential areas, the more accessible they will be for those that can not drive. Smart growth/quality communities and urban revitalization efforts support locating jobs closer to housing but they also offer residents additional transportation choices including walking, biking and transit facilities.

If urban revitalization proves to be successful, then additional jobs may be available for non-drivers closer to homes. However, if the current shift of jobs away from the urban core toward conventional suburban areas continues, job opportunities may be reduced if adequate transit service or other transportation options are not provided. For non-drivers with mobility impairments, access to jobs presents additional challenges regardless of job location. What is essential for non-drivers is the provision of as many transportation options as possible so that their burden on friends and family for their transportation needs is greatly reduced.

*Trip Generation/Travel Behavior:* Under the current land use configuration in the Capital District, non-drivers outside of urban areas make fewer trips per week than other groups and when they do travel, they trip chain as much as possible. As residential areas continue to separate from jobs and services, many individuals rely on others for rides. They also rely on transit which is often limited by infrequent service, limited destinations and inconvenient schedules. However, if urban revitalization proves successful and brings jobs and services back to urban areas, then the need to drive for many trips will significantly decrease. Revitalized urban areas could also allow non-drivers to make more trips than are currently feasible. Smart growth policies creating more transportation options in suburban locations could also increase the mobility of non-drivers, decreasing their dependence on others. The key is to provide as many walking, biking and high quality transit options as possible to decrease the burden of non-drivers on others for their transportation needs, resulting in greater travel overall.

## **Conclusion**

Smart growth/quality communities and urban revitalization efforts in the Capital District are real and are being felt in a wide variety of communities. The question that remains is to what degree these new neighborhoods will impact the transportation choices of market groups and on what scale these communities will be developed. A slow growth scenario may not create a critical mass of higher quality development projects that provide transportation benefits felt on a regional scale, especially if they are constructed in dispersed suburban or rural areas. However, a high growth scenario could overwhelm communities without adequate land use plans, reducing

the opportunities to encourage developers to design projects using smart growth/quality communities principles. Uncontrolled, auto-oriented development could reduce regional quality of life in the long run.

The response of market groups to changing land use patterns in the Capital District will be highly variable and may ultimately come down to factors such as household income and personal preferences. Because there will be more elderly in 2030 than there are today, their travel patterns may have a greater impact on the regional transportation system than that of other groups. This could mean more midday travel and more demands on others to provide transportation services. Although it is unclear whether or not the elderly will choose to locate in urban or suburban locations, mixed use, traditional communities could be far more attractive than conventional suburban development areas. In the end, well designed communities offering a variety of transportation options will benefit all market groups in the future.

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