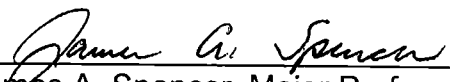
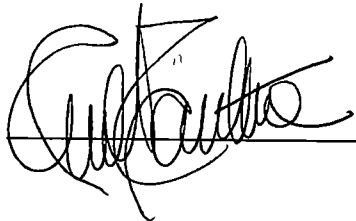
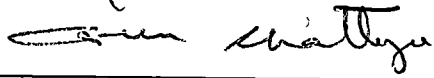


To the Graduate Council:

I am submitting herewith a thesis written by Jerry Donn Roberson entitled "Public Transit in New Urbanist Communities." I have examined the final copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science in Planning, with a major in Planning.


James A. Spencer, Major Professor

We have read this thesis
And recommend its acceptance:

Accepted for the Council:


Interim Vice Provost and
Dean of The Graduate School

**PUBLIC TRANSIT IN
NEW URBANIST COMMUNITIES**

A Thesis
Presented for the
Master of Science in Planning
Degree
The University of Tennessee, Knoxville

Jerry Donn Roberson
May 2001

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DEDICATION

This thesis is dedicated to my close friends and family members,
including my parents,

Jerry E. and Barbara A. Roberson,

without whose support and encouragement
I would not have taken anew the vow of student poverty
for the purpose of returning to Knoxville to finish this thesis.

ACKNOWLEDGMENTS

Many individuals have taken part in the process of moving me toward the goal of finishing this degree. Among them, I would like to thank Stacey Carlile for telling me to quit “talking” about pursuing my dreams and start “pursuing.” Credit also goes to Dan Dandridge and Michael Jones for tolerating my incessant frugality during my last months in Tulsa.

I would also like to give recognition to Vince and Brandi Thompson, George Rafael, and James Lewis Free for boarding and entertaining me during those cross-country trips to gather research materials, and thanks go to Mark Pritchard for his continued interest in my growth and development as a transit planner and hopeful urban designer.

As recent graduates themselves, Wendell Hardin and Todd Morgan deserve much appreciation for kicking me into the gear of reading, researching, and writing, especially at those times when I wanted to be doing *anything* else. A greater acknowledgement goes to Professor Jim Spencer and other thesis committee members, Dr. Cecilia Zanetta and Dr. Arun Chatterjee, for their continued guidance and much-needed assistance in helping me prepare for my final program requirements, including this thesis.

A sincere thank-you goes to my parents for their support – financially, spiritually, and emotionally.

Most of all, I want to thank God for His divine providence and inspiration, without which I would not have goals to pursue, values to uphold, nor life to live.

ABSTRACT

This study focuses on the relationships that exist between new urbanism and public transit in the United States. At a time when new urbanism continues to grow in its popularity and application as an innovative tool for mixed-use land development, public transit systems are experiencing tremendous growth in investment, infrastructure, and in many cases ridership. One of the many tenets of new urbanist promoters is to include public transit as an operational component in the planning and design of new urbanist communities. This researcher's hypothesis states that developers of new urbanist communities are not seeking that objective.

The research tools used in this study include a survey in the form of a questionnaire and a set of case studies. Questionnaire responses come from representatives of several new urbanist sites across the U.S., contributing data sets that can be measured against one another. Case studies build upon questionnaire data by examining qualitative information gathered at four new urbanist sites determined to be significant among the questionnaire responses.

Among the findings, it is revealed that a vast majority of new urbanist developers neither had any form of communication with the local transit provider *before* construction began nor considered public transit to be important in the site analysis of the project. The researcher concludes that public transit is an operational component of design primarily when the *design firm* responsible for the master plan considers it to be operational.

PREFACE

The author of this thesis has had a lifelong interest in the arts of the built environment. From early studies in architecture to later academics in urban planning, he continues to take particular interest in both the conventional and the innovative aspects of design, both what works and what does not work. New urbanism has created a forum in which many of the aspects of the built environment come together upon one project site. It is this *location* on which he focuses his study.

The field of public transit evaded the author until his unexpected employment as a transit planner in 1995. Today, public transit permeates many of his observations about urban environments. It is this *system* on which he centers his attention.

Chapter One introduces the thesis report by providing a background and purpose for the study, stating the research questions, delineating the structure of the report, and discussing the limitations and scope of the topic.

Chapter Two examines the implications of new urbanist development in the United States, tells of the accepted principles of the modern public transit system, defines terminology, and describes assumptions and conditions.

Chapter Three shows the organization of the survey questionnaire, illustrates the selection of the participants, and analyzes the questionnaire responses.

Chapter Four outlines the role of the case study, shows criteria for the selection of participants, examines the interview responses for each case study location, and compares and contrasts data between questionnaires and case studies.

Chapter Five ends the report with a summarization of conclusions and statements on implications for future new urbanist development.

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CHAPTER 1

INTRODUCTION

Over the past decade, a major focal point in the area of urban development has been the rise in popularity of a form of land development called new urbanism. Whether referenced as "neo-traditional", "livable communities", "transit villages", or "traditional neighborhood development", the premise is basically the same: How can we apply what worked in the past to make the present and future work better?

In traditional neighborhoods built before World War II, such aspects as pedestrian-scale improvements, urban rather than suburban densities, and mixed-use developments were the norm. The years since World War II have witnessed the impact of an expanding American economy upon the landscape, and developmental practices have followed FHA lending guidelines and zoning codes to emphasize the importance of the private automobile. The literature of new urbanism has called planners and developers to the serious study of why some neighborhoods continue to flourish long past their prime, while others flounder just a few years into their existence.

Prior to World War II, the private automobile had not quite gained its dominance of the American landscape. Although the U.S. Highway system had been built, the automobile was still considered to be more of a luxury than a basic necessity in many U. S. households. American cities continued to be

substantially dependent upon transit systems that served the public at large. These were not the public transit authorities we know today; these were private operators who were licensed to serve certain geographic regions within urban areas. Still, their importance in day-to-day life was much more than getting workers in *some* areas to their jobs. These transit lines were one of the primary building blocks upon which growth and development depended. Residential areas, commercial strips, and industrial zones alike could usually be linked by a short walk to a near-by transit line, whether bus, streetcar, or other rail line. A typical mindset might have stated, "If there is no transit line, how can the development be successful (Pushkarev, 1977)?"

In the modern quest for more livable communities, public transit is a persistent buzzword, alongside "mixed use", "human-scale", and "traffic calming".

"In the late 1980s, a new approach to the creation and revitalization of communities began to emerge in North America. Based on the development patterns used prior to World War II, the New Urbanism seeks to reintegrate the components of modern life – housing, workplace, shopping and recreation – into compact, pedestrian-friendly, mixed-use neighborhoods linked by transit and set in a larger regional open space framework. The New Urbanism is an alternative to suburban sprawl, a form of low-density development that consists of large, single-use 'pods' – office parks, housing subdivisions, apartment complexes, shopping centers – all of which must be accessed by private automobile (Congress for the New Urbanism, 2000, p. www.cnu.org/newurbanism.html)."

However, public transit appears to be little more than that buzzword in the practice of new urbanist development. Projects across the U. S. can be observed to host a great diversity of uses alongside residential quarters, but

many lack any direct link to the public transit system of the region. In some instances, properties may often go the extra mile to hide the unsightliness of automobile parking from the street, but provision of multi-car parking facilities to serve each and every residential unit does nothing to encourage the use of local transit. In many cases, the local bus line may be present at the front doorstep of this unique urban dweller, but the service provided by the route has no direct relationship to the socio-economic needs of the resident. Despite their best attempts at a fully integrated project, designers and location analysts do not appear to treat public transit as a key component of new urbanist development.

Background and Purpose of the Study

In this researcher's hometown of Tulsa, Oklahoma, new urbanism can be seen in a particular residential/retail project that touts itself as the first in a new wave of infill developments that will cater to the urban dweller and shopper alike. The project further defines itself in terms of its proximity to the central business district, its accessibility to local parks, its traditional "brownstone" urban design, and its availability to public transit. However, when this author first contacted the leasing and sales office about specific public transit routes and schedules, not only was such information unavailable at that office, but a telephone number to the local transit authority could not be located. Upon further communication with that office, it was discovered that nothing more than a visual observation was made that buses appeared to travel along one edge of the property on a regular

basis in order to claim that the development was in close proximity to the local transit lines.

Such lack of information was not necessarily perceived as rudeness or ignorance on the part of the leasing and sales manager for that development, but it did make a statement in this researcher's mind regarding the *actual* importance of public transit to the project.

The purpose of this study is not to undermine the significance of new urbanism, nor is it to elevate the importance of public transit. While each offer unique functions to their urban locality, neither can be said to exist within a vacuum. The successes and failures of both are subject to economic pressures, demographic fluctuations, market trends, and governmental controls.

This study exists because of two main reasons – (1) its relation to the growing trend of innovative and coordinated urban development and re-development in the United States, and (2) the background of the researcher.

The U.S. continues to become a nation more and more urban. In 1990, the urban-rural population ratio was 75.2% to 24.8%. The 2000 urban-rural ratio is estimated at 77.2% to 22.8% (U.S. Census, 2000), and Americans find that they can no longer rely on the antiquated premise that unspoiled, developable land is an endless resource. Environmental concerns, decaying central cities, and rising land costs have worked together to educate many land development professionals that the future of their industry must be noticeably different than the past. For many, this has resulted in developing with greater densities so as to conserve land. For others, this has meant *re-developing* land that formerly

served some other purpose. As developers and urban planners alike give the public more options in their land use configurations, the public becomes familiar with and more attracted to innovative design. If the project is built successfully, the developer can make a profit. If land uses and urban systems are coordinated successfully, the planner can rejoice that a more holistic approach to planning has actually resulted from the work of market forces.

A holistic and coordinated methodology to planning and development is an underlying theme of new urbanism (Bragado, 1995). Such aspects as mixed land uses, pedestrian movements, human-scale architecture, proper relationships to adjoining land, urban densities, and facilitation of public transit service are all claimed to be key.

With a career background in public transit service planning and a lifelong awareness of urban design, this researcher takes a particular interest in the relationship between transit and innovative site development. It is understood from the outset that public transit, though open to every person who chooses to utilize it, will not actually serve every person. In large, densely-populated urban areas, public transit will come closest to serving all peoples, regardless of socio-economic and demographic factors. Even then, many will choose another option to meet their transportation needs. In smaller urban areas, mainly the poor, the disabled, the very old, and the very young will use public transit. Here, we see the use of transit largely not by choice, but by necessity.

A relationship between transit and new urbanism may not come quite so naturally. Many passengers of public transit are not afforded the opportunities to

observe and be educated on innovative urban design, while at the same time many design professionals are not subject to personal transportation constraints of transit systems found in most urban areas. The relationship between these two research variables, if any, could be said to be "forced" rather than inherent.

It is the intent of this study to evaluate the relationship between new urbanism and public transit. The researcher will put to the test his experience in public transit service planning and his interest in innovative urban design. The outcome will not only shed light on what design functions are currently being performed with regard to public transit, but it will also prescribe those applications that should be considered as an operational part of new urbanist design and development.

The viewpoint of this study asserts that public transit is not an operational component of new urbanist design, but rather it is a last-minute effort to make a development plan appear more integrated into the urban fabric than it actually is.

Research Questions

To carry out this study, several research questions were addressed. The primary question is supported by a series of secondary questions, and each is dealt with in proper detail later in the report.

Primary Question

Is public transit an operational component of new urbanist development in the United States?

Secondary Questions

1. Does the presence of any level of public transit service impact the location analysis of new urbanist development planning?
2. If the presence of public transit service is key to the location analysis of new urbanist development planning, do the following sub-categories play a decisive factor in that analysis:
 - a. Level of transit service,
 - b. Amount/type of transit amenities (shelters, benches, bike racks, etc.), and
 - c. Physical site integration between the development and the transit line?
3. Is public transit viewed as the best alternate mode of transportation to the private automobile in new urbanist development in the United States?
4. Is public transit availability viewed as a factor in helping to promote land values in new urbanist development?
5. Are particular methods of public transit service (fixed route bus, paratransit bus, heavy rail, light rail, commuter rail, trolley, or other alternative neighborhood shuttle) viewed as either favorable or unfavorable to new urbanist development in the U.S.?
6. How is the location analysis of "transit villages", in particular, developed around the following factors:
 - a. Level of transit service,
 - b. Amount/type of transit amenities (shelters, benches, bike racks, etc.), and
 - c. Physical site integration between the development and the transit line?
7. If public transit is not a key element in the development of new urbanist developments in the United States, then what are the key factors that are common and necessary in site analysis and development of such projects?

Structure of the Thesis Report

Four principle components will encompass the body of the research report. These include the existing conditions, the questionnaire, the case studies, and the conclusion.

The chapter on existing conditions will attempt to convey the influence of both new urbanism and public transit on the American landscape. These influences are based not only on observed facts but also on perceived situations that help mold the environment within which the two realms meet. The chapter will also take a somewhat detailed look into the finer aspects of new urbanism and the accepted principles of modern public transit agencies in the United States.

As with any research paper, it becomes necessary to familiarize oneself with the terminology at hand. A concise guide to terms and phrases comprised in this thesis will be presented so that their continued use throughout the report can be accomplished without undue, redundant explanation. Alongside definitions, research assumptions and conditions are also presented. This will assist in understanding what situations were deemed as valid, but not worthy of specific hypothesis testing within the research.

The chapter on the research questionnaire will bring to the forefront one of the two main tools used in testing the hypothesis. An objective of the operational part of this study seeks to obtain first-hand information from a large number of communities that are self-described as "new urbanist." It is here that the

research will focus mainly on the relationships of the individual questions of the survey questionnaire to one another and how they are impacted by new urbanist design and/or public transit service. A review of criteria used in selecting the participants will also be joined by an analysis of how the questionnaire itself was constructed.

The second of the two main tools used in testing the hypothesis is the case study research. This chapter will take an exhaustive look at four new urbanist sites, examining not only their relationship to public transit but also the logic behind the decisions that were made which effected good or bad connections to the transit system. Here, visual observations and personal interviews work to build upon the data from the earlier questionnaires. Again, a review of participant selection criteria and case study interview construction will help shed light on the organization and formulation of the whole case study process.

A final chapter of conclusion will summarize the findings from the survey questionnaires and the case studies together. Contrasts and comparisons between the two research tools will become clear in the chapter on case studies, but the conclusion will show the trends, practices, and results of new urbanist design as observed through this study. Special attention will be paid to those potential implications on future new urbanist development; this may be described as the "prescription" phase of the study.

Limitations and Scope of Topic

A characteristic of research within the discipline of urban planning is the fact that geography always plays a part. This characteristic is not *unique* to planning, but it does provide a component that is sometimes difficult to overcome when researching on a budget. All the time and money in the world could afford a researcher the opportunity to visit every new urbanist community across the globe and gain actual and immediate data to help prove or disprove the hypothesis. However, this researcher has a restricted budget and even more restricted time to get his facts, so limitations have been established for the purpose of completing the report.

First, the scope of the study concentrates on new urbanist development, and associated public transit, in the United States. Interestingly, since no new urbanist developments were found to exist in either Alaska or Hawaii, the study area could be refined to actually encompass the *continental* U.S.

Second, the survey questionnaire research tool uses the parameter of new urbanist communities that could be located from a comprehensive search of such projects on the internet. It is assumed that additional communities do exist but have not been referenced on common sites dedicated to new urbanist design and development.

Third, the case study investigation tool takes the geography of the research to another level. Given the researcher's budget and time allotment, five

hundred road miles is the established distance within which he would travel to reach a case study site.

Fourth, there exist a number of individuals – architects, real estate developers, urban designers, transit planners, etc. – who are involved in the project team for each new urbanist community. While the prospect of getting the participation of each person on each team to either complete a questionnaire or sit for an interview would be ideal, it remains virtually impossible. During the phase of compiling names and addresses for questionnaire mailings, it became necessary to determine one individual per community who appeared to be pivotally involved with the master plan of the development. Likewise, the determination of interview participants for the case studies had to be limited to one representative from the new urbanist community and one staff member from the local public transit provider.

One last limitation concerns itself with the timing of when a community goes online. Of the dozens of projects in the parameter, many remain under construction and a few are still in the planning phase. Some projects may appear to be good for case study research purposes, but they are not to the point of completion that actual data on their relation to public transit can be accurately evaluated. Only those projects that are at least fifty percent complete have been deemed by the researcher as *complete enough* for case study evaluation.

The following chapter will continue the thesis with a study of existing conditions.

CHAPTER 2

EXISTING CONDITIONS

An analysis of the setting for this thesis helps to better understand the role of the data to be studied in chapters three and four. Background conditions for a study are inherently fluid and dependent upon various externalities such as public mindset, governmental priorities, and prevailing market forces. Unless otherwise stated, existing conditions for this study will reflect the state of affairs in the U.S. for the timeframe of August, 2000, to April, 2001.

Implications of New Urbanist Development in the U.S.

Innovative, mixed-use design is not new to modern America. Radburn, New Jersey, and Marymont, Ohio, demonstrated the concept in the 1920's, and the planned unit developments and new towns introduced in this country in the 1960's were an attempt at creating a sense of community outside the bounds of conventional, post-war subdivision development. Though short-term impact was negligible, the groundwork had been set for future goals (So, 1988).

In the 1980's, growing interest in innovative urban design was informally coupled with nationwide attention on historic preservation projects. These efforts did well to set the American focus on the unique features of the built environment, both what worked well and what did not. One such mixed-use

project that captivated land developers, architects, and planners alike was the community of Seaside.

“When the town of Seaside, Florida was created, it was the first manifestation of what has since become known as the New Urbanism. This return to the traditional neighborhood as a model has changed the way builders and planners view development, world-wide. From the beginning, Robert Davis, Seaside's founder, realized that Seaside would benefit from constant study and refinement in order to ensure its residents a full community life (Seaside, 2001, p. www.theseasideinstitute.com).”

Not surprisingly, other projects, similar in scope, began to follow, and a fellowship of designers and developers began to form.

The Congress for the New Urbanism (“CNU”) first met in 1993 to analyze the health and vitality of American cities and continues to meet on an annual basis. This organization also discusses and promotes the principles, policies, and techniques of new urbanism. According to CNU (1999), the major principles of new urbanism include the following:

1. All development should be in the form of compact, walkable neighborhoods and/or districts. Such places should have clearly defined centers and edges. The center should include a public space - such as a square, green or an important street intersection - and public buildings - such a library, church or community center, a transit stop and retail businesses;
2. Neighborhoods and districts should be compact (typically no more than one quarter mile from center to edge) and detailed to encourage pedestrian activity without excluding automobiles altogether. Streets should be laid out as an interconnected network (usually in a grid or modified grid pattern), forming coherent blocks where building entrances front the street rather than parking lots. Public transit should connect neighborhoods to each other, and the surrounding region;

3. A diverse mix of activities (residences, shops, schools, workplaces and parks, etc.) should occur in proximity. Also, a wide spectrum of housing options should enable people of a broad range of incomes, ages, and family types to live within a single neighborhood/district. Large developments featuring a single use or serving a single market segment should be avoided; and
4. Civic buildings, such as government offices, churches and libraries, should be sited in prominent locations. Open spaces, such as parks, playgrounds, squares, and greenbelts should be provided in convenient locations throughout a neighborhood.

Point number two introduces the transportation standard for CNU. The public transit standard is repeated in the reference materials of new urbanist academics other than CNU as well (Bragado, 1995), and it bears understanding in the realm of promoting these types of communities (Katz, 2000). From this inclusion, we observe that public transit is not only inter-community in its intent, but also intra-community. An objective of public transit in the new urbanist community is to move people to the various activity centers within the neighborhood, therefore promoting the sense that land uses are varied, compact, and accessible to the transit user. However, providing trips to activity and employment centers away from the new urbanist development is of utmost importance.

CNU's point number one further illustrates the place of public transit in the new urbanist community by designating the center of the development as appropriate for the transit stop. This is part of the visual basis that transit is an integral part of the new urbanist community. It has fixed locations that stake its claim to be a player in the neighborhood.

The future of new urbanism and other neo-traditional design elements appears to be gaining in momentum. For example, CNU hosted over 1000 participants from more than 18 countries at its annual meeting in 1998, and its 2001 meeting is expected to attract nearly double those figures (CNU, 2000). The Urban Land Institute states that in a recent survey of its membership, new urbanist and traditional town development reports topped the list of areas on which ULI should concentrate research for the upcoming year (ULI, 2000).

Innovative urban design is clearly international in its influence, particularly in Europe and the economically booming area of South America and Asia. However, new urbanism in particular looks at innovative design through the lens of the past, using not only design elements that are proven to work, but also the architecture and familiarity of the traditional town center as an anchor for the rest of the neighborhood. It is said that America borrows from the past to design its built environment, whereas other nations look solely to the future. This concept of neo-traditional planning is what has made American new urbanism so successful in its first decade.

Not all has been smooth in the establishment of new urbanist communities. Many municipalities are hesitant to approve plans for such neighborhoods. Lack of familiarity with new urbanist concepts has led some places to strictly regulate the phasing of these communities so as to gauge their impact on urban utilities such as roads, water, and sewerage. Often, neighborhoods adjoining proposed new urbanist projects will gather in large numbers to protest the project in front of planning commission meetings. To

them, the concept of "urban density" cannot and will not be tolerated in their community, and there is no reason in extending the public transit system to their back door. Chapter four will illustrate one example of community protest in Mount Pleasant, South Carolina.

In contrast to perceived negative impacts, new urbanism continues to gain in popularity. If key elements, such as pedestrian-oriented development and linkages to public transit are incorporated as operational components, these communities fulfill their mission. If such elements are lost in the web of attractive architecture and pure market values, then these communities fall short of their potential.

Accepted Principles of the Modern Public Transit System

The modern public transit system exists in a multitude of forms. In some communities, it is a public agency given authority by the state to operate within a particular geographic area. In other communities, the municipal or metropolitan government gives that authority. In some instances, the agency is a city or state department, directly under the supervision and budgetary constraints of that entity. In other instances, it is a private company that is licensed to work for and be funded by a local government. In any case, today's public transit system is intended to work for the people within the geographic area that it is located.

This last scenario was much more common throughout the earlier decades of the twentieth century than it is today. In many American cities, public

transit in the 1930's could be seen as the operation of privately-operated streetcar lines and motorbus coaches. By the 1970's, nearly every major city had encountered the transformation of public transit into the hands of some public agency. Reasons varied from city to city. For some, private operators could no longer deal with the rising costs of operations. For others, private operators met stiff opposition from unionizing vehicle operators and mechanics and simply wanted to surrender the responsibility. In even other situations, local governments simply wanted control. While it may be common to trace a city's transit system back one hundred years, it is just as common to trace the current public transit organization back a mere thirty years.

Another area of great diversity among public transit is the way in which the organization is funded. The following is a partial list of today's commonly-used mechanisms in funding public transit systems:

1. municipal and state general budgets
2. federal grants
3. state highway discretionary funds
4. federal transit discretionary funds
5. municipal sales taxes
6. state fuel taxes
7. municipal and state bond funds
8. fares
9. advertising revenues
10. service contracts

This list gives indication that transit systems are not self-supporting. Even the largest and most successful American public transit agency, the Metropolitan Transportation Authority of New York, is heavily subsidized.

Transit systems utilize both operating funds and capital funds. Table 2-1 tracks an annual breakdown of public transit operating funds across the United States. Operating monies fund the day-to-day functions of the transit authority. Drivers' wages, administrative salaries, vehicle fuel, maintenance pay, and utilities costs comprise a typical operating cost schedule.

Capital monies fund the equipment used to operate the system. Table 2-2 tracks an annual breakdown of public transit capital funds across the United States. Fixed route buses, paratransit vans, subway cars, computers, facilities expansions, and bus stop benches all find their way into a list of capital items to be funded. Sometimes these items are a part of a regular replacement schedule; sometimes they are used for system expansion. Nonetheless, capital expenditure amounts often vary greatly from one fiscal year to the next, whereas operating expenditures usually remain somewhat stable.

These tables display an important part of the public transit industry. While fare collection rates may vary from small system to large system, the percent of total funds that they represent are essentially the same. Overall, the typical public transit system reports a fare recovery ratio of about 21%. The remaining 79% of funding is subsidized. Public transit is not self-supporting and it likely never will be self-supporting unless passengers wish to accept 500% fare hikes.

Table 2-1. Public Transit Operating Funding Sources (in millions of dollars)

YEAR	DIRECTLY GENERATED FUNDS			GOVERNMENT FUNDS				TOTAL PUBLIC FUNDS	TOTAL
	PASSENGER FARES	OTHER	TOTAL	LOCAL	STATE	FEDERAL	TOTAL		
1984	4,447.7	780.5	5,228.2	5,399.1		995.8	6,394.9	6,394.9	11,623.1
1985	4,574.7	701.8	5,276.5	5,978.5		939.6	6,918.1	6,918.1	12,194.6
1986	5,113.1	737.3	5,850.4	4,244.5	2,305.6	941.2	7,491.3	7,491.3	13,341.7
1987	5,114.1	776.6	5,890.7	4,680.6	2,564.6	955.1	8,200.3	8,200.3	14,091.0
1988	5,224.6	840.7	6,065.3	4,893.1	2,677.1	905.1	8,471.3	8,471.3	14,536.6
1989	5,419.9	836.7	6,256.6	4,995.4	2,796.3	936.6	8,728.3	8,728.3	14,984.9
1990	5,890.8	895.0	6,785.8	5,326.8	2,970.6	970.0	9,267.4	9,267.4	16,053.2
1991	6,037.2	766.8	6,804.0	5,373.4	3,199.5	955.9	9,728.8	9,728.8	16,532.8
1992	6,152.5	645.9	6,798.4	5,268.1	3,879.5	969.1	10,116.7	10,116.7	16,915.1
1993	6,350.9	764.0	7,114.9	5,490.6	3,704.2	966.5	10,161.3	10,161.3	17,276.2
1994	6,756.0	2,270.6	9,026.6	4,171.2	3,854.4	915.6	8,941.2	10,570.3	17,967.8
1995	6,800.9	2,812.2	9,613.1	3,980.9	3,829.6	817.0	8,627.5	10,171.7	18,240.6
1996	7,416.3	2,928.2	10,344.5	4,128.5	4,081.8	596.4	8,806.7	10,502.1	19,151.2
1997	7,545.7	3,308.4	10,854.1	4,095.1	3,918.7	647.0	8,660.8	10,524.4	19,514.9
1998	7,716.8	2,875.4	10,592.2	3,819.8	3,758.7	726.5	8,305.0	9,976.7	18,897.2
'98 %	40.8%	15.2%	56.0%	20.2%	19.9%	3.9%	44.0%	52.8%	100.0%

Source: American Public Transit Association. *1999 Membership Directory*. Washington, DC: APTA, 1999.

Table 2-2. Public Transit Capital Funding Sources (in millions of dollars)

YEAR	FEDERAL ASSISTANCE	STATE ASSISTANCE	LOCAL ASSISTANCE	DIRECTLY GENERATED	LOCAL PLUS DIRECTLY GENERATED	TOTAL
1988	2,519.5	489.6	769.0	86.5	855.5	3,864.6
1989	2,426.5	665.5	802.6	118.3	920.9	4,012.9
1990	2,872.5	696.8	1,176.9	189.3	1,366.2	4,935.5
1991	2,773.5	695.4	1,012.3	1,074.5	2,086.8	5,555.7
1992	2,673.0	801.0	830.0	1,131.7	1,961.8	5,435.7
1993	2,432.4	1,325.5	1,079.6	1,002.1	2,081.7	5,839.6
1994	2,622.8	1,047.8	997.9	1,164.2	2,162.1	5,832.7
1995	3,422.2	1,020.3	888.2	1,899.6	2,787.8	7,230.3
1996	3,592.8	915.9	926.0	1,649.1	2,575.1	7,083.8
1997	4,275.6	1,037.0	898.8	1,638.1	2,536.9	7,849.5
1998 P	3,574.8	789.0	923.1	1,856.5	2,779.6	7,143.4
98 %	50.0%	11.1%	12.9%	26.0%	38.9%	100.0%

Source: American Public Transit Association. *1999 Membership Directory*. Washington, DC: APTA, 1999.

Because public transit is so heavily subsidized, transit agencies find themselves accountable to the governmental entities that finance their operations. A situation such as this often makes way for decisions to be made not necessarily in the interest of good planning, but rather in the interest of good politics. For example, a city's public transit department may conclude from exhaustive research that the greatest transit usage would occur if 75% of fixed route bus lines operated exclusively in the north and south sectors of the city. However, these sectors are geographically a part of only four of the city's twelve city council wards. To more "properly" disperse public transit across the city, the transit department may be mandated to evenly distribute the bus lines across each of the city's twelve wards, even at the cost of some ridership.

Yet another balancing act that transit agencies must encounter is the common not-in-my-backyard attitude so prevalent in America. For many urbanites, the presence of a bus line is a welcome addition to neighborhood amenities; for others the bus is nothing more than a polluting nuisance. In the five years this researcher spent planning bus routes in Tulsa, there were nearly as many phone calls and emails to convince the planning and scheduling department to *remove* an unwanted bus line from a particular neighborhood as there were contacts to *add* bus service to an area. Most upwardly-mobile Americans appear to have little personal need for public transit in most urban areas, and increasingly many of those individuals appear to have difficulty understanding the need of transit to serve others in their own city.

To fine-tune the schedule and geography of transit lines within a given system, demographic standards, governmental accountability, and social agendas all play a part. When special developments occur, such as the establishment of a new urbanist community near a transit line, the first step to accommodate that land use may not automatically originate from the local transit agency. In many cities, responsibility for establishing a transit connection tends to be left to free enterprise, and those connections are not always made.

The future of public transit can be best described as optimistic, whereas the past has seen periods of boom and bust for the industry. The years of the Great Depression and the Second World War saw great growth for transit. The post-war years experienced decline and even shutdown for many private systems. The era of public intervention (1960's and 1970's) brought about investment that had been virtually unmatched until then. Here we see the new establishment of heavy rail (subway) transit in cities such as Washington, D.C., and Atlanta, Georgia. The 1980's can best be described as lean years for the business, as a recession and conservative federal government helps lay the groundwork for greater possibilities in the coming years.

The past decade has experienced a second wave of public investment in public transit infrastructure for the modern era. With the notably-lower cost of establishing rail transit in the form of "light rail," many cities that otherwise could not have enjoyed a substantial rail system can now do just that. Denver, Dallas, Pittsburgh, Los Angeles, and Saint Louis are just a few cities that now praise light rail not only for re-connecting the population with the benefits of a clean transit

system, but also for doing its part to contribute to the partial rebuilding and re-investment in their central cities. The new millennium appears to be following the precedent of the 1990's.

"Last year, usage of U.S. public transportation systems grew by an estimated 320 million rides, to a total of 9.4 billion trips, according to preliminary estimates released today by the American Public Transportation Association (APTA). This record ridership represents the highest level of use in public transportation in more than forty years, according to APTA. This increase comes on the heels of record ridership the previous year when over 9 billion trips were made on the nation's transit systems. In the past five years, ridership on the nation's public transportation systems has grown by over 20 percent (APTA, 2001, p. www.apta.com)."

Even more encouraging is the report that the new presidential administration is continuing the federal government's commitment to fund public transit.

"The Bush Administration released its Fiscal Year 2002 budget proposal on Feb. 28 that includes \$6.7 billion for the federal public transportation program, a 9 percent increase above the current year's level of \$6.3 billion (APTA, 2001, p. www.apta.com).

However, the true test to the viability of this commitment ultimately comes down to the state of the economy in the upcoming years. By comparison to previous decades, public transit is big business with a growing lobby in Washington, D.C. What this means for its future is not set in stone, but it seems to have positive indicators.

Definitions of Terminology

Many words that are key to this study are not familiar to most people. The following section will give definition to the basic terminology of the research.

Density

Density is the average number of dwelling units in a given space. In urban planning forums, density refers mainly to the distribution of persons, activities, land uses, and infrastructure across an area. Urban densities typically imply a higher number of persons, a greater diversity of activities, a more comprehensive configuration of land uses, and a more complex network of infrastructure over a given land area than rural or even suburban densities entail. Density is not to be confused with congestion, which means that a greater number of units exist in an area planned for a fewer number of units.

Fixed Route Transit

Fixed route transit is the most familiar type of intracity bus service. This type of transit usually employs a standard multi-passenger vehicle and provides service on a regular, published schedule along a specific route. Vehicles stop to pick up and deliver passengers to specific locations, and each fixed-route trip serves the same origins and destinations. Fixed route transit is the one mode of service that can be found to operate within nearly every standard city bus system.

Heavy Rail Transit

Heavy rail transit utilizes high-speed, passenger rail cars operating singly or in trains of two or more cars on fixed rails in separate rights-of-way from which all other vehicular and foot traffic are excluded. It is also commonly known as

"rapid rail" or "subway." Currently, eleven U.S. cities have heavy rail transit among their public transit options (APTA, 2001).

Light Rail Transit

Light rail transit uses light-weight passenger rail cars operating singly (or in short trains) on fixed rails in rights-of-way that are not necessarily separated from other traffic for much of the linear distance. Light rail vehicles are driven electrically with power being drawn from an overhead electric line via a trolley or a pantograph. Also known as "streetcar" or "tramway," this mode can have an appearance similar to that of a heavy-rail train, but with slower operating speeds. Currently, twenty-three U.S. cities use light rail transit, and popularity continues to rise due to low environmental impacts and due to construction, operation, and maintenance costs lower than that of heavy rail. Thirty-two additional cities are currently planning for light rail transit projects (APTA, 2001).

Livable Communities

Livable communities is a term used popularly by both private and public initiatives interested in revitalizing existing communities; improving environment, public health, and quality of life; providing more transportation choices; improving schools and making them the centers of their communities; expanding economic opportunity; increasing public safety and crime prevention; and protecting farmland and open space (Livable Communities, 2001).

Neo-traditional Development

Neo-traditional development is a term used to describe the concept of applying to modern-day site planning those patterns, techniques, and design criteria from the past that have proven to be sustainable and useful. Examples of neo-traditional development standards might include human-scale planning, regular and expected connections to adjoining land uses, vernacular architecture, and de-emphasis of the personal automobile.

New Urbanism

New urbanism is a refined area of neo-traditional planning that emphasizes the importance of design policy and development standards. Such standards include the proper placement of public buildings, the use of certain hierarchies of streets, the total neighborhood size, the location of public transit lines, the proper mix of land use activities, the location of garages and street parking, and the avoidance of single-use densities and land uses within a given area. New urbanism is the specific subject of organizations such as the Congress for the New Urbanism and it is gaining its importance in other organizations like Urban Land Institute.

Paratransit

Paratransit is a term describing the use of passenger cars, vans, or buses with fewer than 25 seats operating in response to calls from passengers or their agents to the transit operator, who then dispatches a vehicle to pick up the passengers and transport them to their destinations. A demand response

operation is characterized by the following: (a) The vehicles do not operate over a fixed route or on a fixed schedule except, perhaps, on a temporary basis to satisfy a special need; and (b) typically, the vehicle may be dispatched to pick up several passengers at different pick-up points before taking them to their respective destinations and may even be interrupted en route to these destinations to pick up other passengers. In many cities, the paratransit mode includes, but is not limited to, the mandate to serve elderly and disabled passengers in accordance with the Americans with Disabilities Act (APTA, 2001).

Public Transit

Public transit is the general term used to describe transportation services provided to the public at large. While public transit is generally operated by a local- or state-enabled agency, it could be operated by a private company that either contracts with a government entity or is merely licensed by local government to run its transit lines in a certain geographic area. To be "public", the transit service must be open to any citizen who wishes to use the service.

Smart Growth

Smart growth is an approach to land and resource use that emphasizes wise and healthy development. Compact, attractive design is encouraged where it can happen best, while urban sprawl and destruction of habitat or special places are avoided. Schools, parks, open space, transportation, and other community needs are planned so that many people, regardless of income, can benefit. Thriving business joins with clean air and water to provide a sense of

community and personal respect that helps guide people's activities (Washington State Community, Trade, and Economic Development Department, 2001).

"There is confusion about the term 'Smart Growth' because the term has been used by new urbanists and others in entirely different contexts. They describe related but different efforts. Planners interested in halting urban sprawl have developed new state legislation and a variety of urban growth techniques to promote urban infill and contiguous urban edge development that is efficient and environmentally less offensive than sprawl. While related to many of the objectives of new urbanism, it is a different set of efforts largely carried out by a different set of people and different organizations. For more on this see reports on the Smart Growth projects of the American Planning Association (Spencer, 2001)."

Transit Villages

Transit villages are a specific subset of new urbanism that is developed specifically to benefit public transit, and vice versa. Whereas new urbanism includes the provision for public transit service within its standards, transit villages can be said to make public transit provision its first standard, followed by the other tenets of new urbanism.

Assumptions and Conditions

In chapters three and four, hypothesis testing will become evident. However, for those variables that need no testing, assumptions have been made.

With regard to the survey, new urbanist communities were selected to receive a questionnaire. As many new urbanist communities as could be located throughout the internet, these projects were chosen to receive a questionnaire. If

a community was listed on the internet as "new urbanist," it was assumed to actually be a new urbanist community. Furthermore, as questionnaires were addressed and mailed, it was assumed that the form would reach the desk of an appropriate person from the project development team. In most cases, a specific individual was located and that person's name was placed on the address label. If a certain team member could not be located in an online search, the address label would simply specify "Master Plan Developer/Designer." To further instruct the questionnaire be routed to an appropriate individual, instructions were stated on the cover letter included with each questionnaire.

It is assumed that data received on each questionnaire is accurate as completed by a knowledgeable member of each project development team.

Regarding the case study portion of the research, fewer assumptions were derived from contact with persons who were interviewed. Assumptions were usually included only in personal site observations at the case study locations. For example, walking distance from the edge of the development to the nearest bus stop was estimated rather than actually walked by the researcher, and housing units with garages were assumed to house families with at least one automobile in possession.

Conditions for the study depended mainly upon time and travel availability for the researcher and budgetary constraints.

The researcher had available resources to mail questionnaires to all seventy-two new urbanist projects on his exhaustive list. Furthermore, he also

had resources to provide addressed and stamped envelopes to the recipients, not only for their convenience but also to encourage a better response rate.

The researcher was furthermore able to make all case study observations and most interviews in person, with some interviews being conducted over the telephone. This method of research allowed him to take pictures of new urbanist sites and their relationship to public transit, and it allowed face-to-face interaction with interviewees. Conditions also provided for the researcher to be present at new urbanist sites during time of evening rush hour to observe the actual connection between public transit and potential riders from the community under study.

The following chapter will continue the thesis with a breakdown of the questionnaire methodology and findings.

CHAPTER 3

QUESTIONNAIRE METHODOLOGY AND FINDINGS

The initial methodology of research for this project is survey research in the form of a questionnaire. This format is intended to solicit information from designers, architects, and developers who have been instrumental in new urbanist development. Questions included not only help gauge attitudes towards transit, but will also ascertain the level of understanding that the developer may or may not have regarding how public transit actually works.

Questionnaires with postage-paid, return envelopes were mailed to seventy-two (72) new urbanist development sites across the United States with a personal letter describing the general intent of the research. A 60% return rate was anticipated by the February 23, 2001, deadline, and a surprising 61.11% return rate was achieved by March 15. The deadline was used merely as a tool to encourage a faster response from questionnaire recipients and not as criteria for data inclusion in the research findings.

From the completed and returned questionnaires, four (4) developments were selected to participate in the continued research of case studies.

Organization of the Survey Questionnaire

The questionnaire was printed on both sides of a single page. See Figure 3-1 for questionnaire, page one, and Figure 3-2 for questionnaire, page two.

Your participation in this study is voluntary; you may decline to participate without penalty. If you decide to participate, you may withdraw from the study at anytime without penalty. If you withdraw from the study before data collection is completed, the data that you submitted up that point will not be used. "I have read the above information, and I agree to participate in this study."

Signature: _____

Date: _____

Begin Page 1

1. Name of the residential development / community: _____
2. Location: (city / town) _____ (state / province) _____
3. Name of person completing this questionnaire _____
Title and company of person completing this questionnaire _____
4. Phone No. (optional) _____
5. What is the internet website for the development? <http://www.> _____

6. What is the age of the residential development / community? (check one)
 - _____ Development has been complete since _____ (insert completion date).
 - _____ Some units are complete (_____ %), but the rest are still under construction.
 - _____ Development as a whole is under construction. It is currently more than 50% complete.
 - _____ Development as a whole is under construction. It is currently less than 50% complete.
 - _____ Builders are under contract, but ground has not been broken.
 - _____ Development is in the bidding process for building contractors.
 - _____ Development plans by architects and engineers are currently more than 50% complete, but not final.
 - _____ Development plans by architects and engineers are currently less than 50% complete.
 - _____ Development is still in the conceptual stage.

Please return the completed questionnaire by Friday, Feb. 23, 2001, in the enclosed envelope.

7. What land uses will be present on the completed project site? (please provide percentage breakdown of each use, based on use by unit)

Residential only	100%	Mixed uses (check all that are applicable)	
Residential	%	Retail	%
Educational	%	Religious	%
Post Office	%	Industrial	%
Other (please specify)	% and type _____	Office	%
		Library	%
		Open Space	%

8. How many parking spaces are reserved for each residential unit? Studio _____ One-bedroom _____
Two-bedroom _____ Three-bedroom _____ Four-bedroom _____ Other (specify) _____

9. What percentage of the total project land area is devoted to surface parking? _____%

10. What percentage of the total project land area is devoted to multi-level parking? _____%

11. What is (or will be) the status of ownership of the development after completion (check all that apply)?
 - _____ Leased units and common facilities will remain under the ownership of the developer, and not change hands.
 - _____ Leased units and common facilities will change hands from developer to a different company.
 - _____ Units that are sold will transfer to the ownership of the buyer.
 - _____ There are a combination of units leased and properties sold within the development.
 - _____ Streets/alleys will remain in private hands. _____ Streets/alleys will be dedicated to the local government.

"Public transit service" refers to that transit service that is open to the public, no matter who owns or operates the service. In most cases, public transit service is operated by the public transit authority of that particular municipality or region. In some cases, public transit service is provided by a private company.

12. Is public transit service available in your city or region?
 - _____ Yes (continue with question 13)
 - _____ No (skip to question 23)

"Local" public transit service refers to a transit line that will potentially stop for a passenger at any transit stop along its line. This is opposed to "express" or "commuter" lines which will bypass a number of local stops in order to arrive at high-density locations only. Please answer the following questions about "local" public transit service.

13. How far away from the development does (or will) the closest "local" public transit line travel? (check one)
 - _____ Public transit travels *through* the development.
 - _____ Public transit meets the edge or boundary of the development.
 - _____ Public transit travels within two blocks of the development.
 - _____ Public transit travels within three to five blocks of the development.
 - _____ Public transit travels within six blocks to one mile of the development.
 - _____ Public transit travels within one to three miles of the development.
 - _____ Public transit does not exist within three miles of the development.

Page 1 of 2

Figure 3-1. Survey Questionnaire, Page One

14. What mode(s) of public transit is (are) present in the location checked in question 13 (check all that apply)?
☐ Heavy Rail or Light Rail (subway, elevated rail, cablecar, streetcar that runs on a track, etc.)
☐ Fixed Route Bus (bus that does *not* deviate from its regular, fixed route)
☐ Paratransit Vehicle (vehicle providing service only to the elderly or to passengers with disabilities)
☐ Demand Response Vehicle (vehicle provides service to general public, but does not follow a set route)
☐ Ferry Boat
☐ Other (please specify): _____
15. How many different public transit *routes* operate within six blocks of your development (include any and all types of transit)?
 _____ (place number here) _____ Don't know
16. Is public transit available within six blocks at late night (approx. 9 pm ---- 12 midnight)? ☐ Yes ☐ No
17. Is public transit available within six blocks on Saturdays? ☐ Yes ☐ No Sundays? ☐ Yes ☐ No
18. Describe the impact of the completed development upon the local public transit service (check one).
☐ Local transit service did *not* change its route(s) to conform to the new development.
☐ Local transit service *extended* the length of its route(s) to meet the new development.
☐ Local transit service *changed* the location of its route(s) to conform to the new development.
☐ Local transit service *discontinued* its route(s) to the area of the new development.
☐ Other (please specify): _____
19. What type of interaction occurred between the *developers* of your project and the *staff* of the local transit provider (check one).
☐ Developers and staff met during the planning stage to discuss transit options.
☐ Developers and staff met during the construction stage to discuss transit options.
☐ Developers and staff met after the project completion to discuss transit options.
☐ Developers contacted staff, but meetings never occurred.
☐ Staff contacted developers, but meetings never occurred.
☐ Neither staff nor developers contacted one another, and meetings never occurred.
☐ Meetings between staff and developers to discuss transit options were arranged by a third party.
☐ Other (please specify): _____
20. Describe the impact of public transit on the design and development of the project (check one).
☐ Public transit service was viewed as an operational component of the development. Without public transit service in the vicinity, the development would not have been built, or would have been built at another location that had better transit service.
☐ Public transit service was viewed as an important part of the development. The development would have been built in its current location, regardless, but the best transit options were sought in order to make the development a better success.
☐ Public transit service was viewed as a good service to have nearby, but construction of the development was essentially *not* based on whether or not public transit was present.
☐ Public transit service was viewed as a detriment to a good development. It was intended to build the project in a location that was *not* accessible by public transit.
☐ Other (please specify): _____
21. Are people utilizing public transit according to projection (check one)? ☐ No, transit service is not present
☐ Too soon to tell ☐ Yes, ridership exceeds projection ☐ Yes, ridership meets projection
☐ No, ridership is below projection ☐ Other (specify): _____
22. If effective public transit was sought to serve people residing at, or traveling to, your development, but was unsuccessful in accomplishing that goal, what was the reason from the perspective of those people (check all that apply)?
☐ Transit did not travel away to *preferred* locations. ☐ Transit service was not *frequent* enough.
☐ Transit did not run at late night or on weekends. ☐ Transit service was too far of a walk from the site.
☐ People not willing to give up their personal autos. ☐ Riding transit was viewed as low-class or undesirable.
☐ Cannot yet answer this question; development is still under construction or is too new to evaluate.
☐ Other (please specify): _____
23. What terminology would best describe your development (check one)?
☐ New Urbanism ☐ Neo-Traditional ☐ Transit Village
☐ Conventional / Traditional Development ☐ Other (please specify): _____

Thank you for participating in this questionnaire. Please return the form in the enclosed, stamped envelope. If you would like to receive a abstract-copy of the final thesis (fall, 2001), please provide your mailing address below.

Figure 3-2. Survey Questionnaire, Page Two

As stated, a postage-paid return envelope and a cover letter, custom addressed to specific individuals, accompanied the questionnaire. Figure 3-3 gives an example of the letter.

Cover letters were printed on plain, white paper, while questionnaires were printed on salmon-colored paper. The intent here was to make the questionnaires stand out among other papers that may be located on a recipient's office desk. Mailings were sent out to all seventy-two locations approximately four weeks before their stated deadline date of February 23, 2001.

The questionnaire is organized in a format to collect three types of information – contact information, project information, and transit-related information. The form is headed by an abbreviated "informed consent statement," as required by the Human Subjects in Research criteria, Research Compliance Services division, University of Tennessee Office of Research. This compliance is intended to protect the subject who completes the questionnaire from any harm or improper use of the data they submit in a questionnaire or interview process from a student. Interestingly, only twenty-eight of the forty-four questionnaire respondents actually signed the form.

Contact information was included on the questionnaire to assist the researcher in observing who responded and who did not respond. Furthermore, contact information was used to assist the researcher in selecting new urbanist communities for the case study research portion of the thesis and to help in making conclusion analyses in the *final* chapter of the report. It should be noted that contact information was not used to identify projects during data analysis.

***Jerry D. Roberson
Graduate Student
Dept. of Urban and Regional Planning
108 Hoskins Library
University of Tennessee
Knoxville, TN 37996***

January 24, 2001

Phil Stevenson
Lindbergh Center Development
Carter and Associates
1275 Peachtree Street
Atlanta, GA 30309-3524

Dear Mr. Stevenson,

My name is Jerry Roberson, and I am a graduate student in the Department of Urban and Regional Planning at the University of Tennessee, Knoxville. For my master's thesis, I am studying the connections between public transit and neo-traditional / new-urbanist planned communities in the United States.

For this study, I am requesting that you complete the enclosed questionnaire. Question #1 on the first page identifies the planned community for which I am requesting information. Your participation in this questionnaire will greatly enhance my research and provide me with much-needed data for my evaluations. Depending upon your first-hand knowledge of the items I request, you could complete the questionnaire within 5 to 25 minutes.

Please forward this questionnaire to a designer or developer within your community that has been involved with either the preparation of the master-plan layout or the transportation / transit element of the plan.

Even if no public transit service exists within your community, a completed questionnaire will still aid my research. Be certain to complete both the front and the back of the questionnaire page.

All data that is submitted on this questionnaire will remain confidential within the questionnaire data set in the thesis report. The identification data in questions 1 through 6 is requested solely to assist me in observing who has responded and who has not responded.

If you would like to receive an abstract-copy of my findings sometime in the fall of 2001, please print your mailing address in the small space at the bottom of page 2.

Enclosed you will find a return envelope, stamped and addressed for your convenience.

Please return the completed questionnaire by Friday, February 23, 2001.

Thank you in advance for completing this questionnaire and assisting my research.

Sincerely,

Jerry D. Roberson

Enclosures (2)

Figure 3-3. Example of Cover Letter Included with Questionnaire Mailing

Project information was intended to give a general picture of the current nature of the development. Questions focused on age or construction status of the project, land uses, dwelling sizes, parking arrangements, and status of ownership.

Transit-related information aimed at the heart of the research by first defining some common terms to better assist the respondent in completing the remainder of the form. Questions centered on location of the nearest transit stop, amount of transit service in the vicinity, impact of the development on transit service, communications between the development team and transit staff, and overall attitude toward the existence of public transit.

Questionnaire forms ended with an offer by the researcher to mail an abstract-copy of the final thesis to interested individuals in the fall of 2001. Six respondents were interested in that offer.

Selection of Participants

While the concept of new urbanism has been refined for nearly ten years, and new urbanist projects seem to be the subject of much study in planning and design professional journals, a multitude of actual new urbanist communities was not as easy to locate as this researcher had hoped. Some three hundred developments across the country have used recognized new urbanist elements in their designs, but much fewer can actually be termed as "new urbanism (New Urban News, 2000)."

Throughout an extensive search of internet resources and professional journals, this researcher was able to identify seventy-two new urbanist communities, either completed or under construction, that actually listed addresses and/or contact personnel. It was decided that all seventy-two developments would receive a questionnaire mailing, from which case studies would later be selected. Table 3-1 shows each project name and location.

In the case that a recipient's name could not be determined, the mailing was addressed to "Master Plan Developer/Designer" and sent to the office of the developer or the front office of the project.

Table 3-1. New Urbanist Communities Receiving Questionnaires

Project Name	City	State	Project Name	City	State
Abacoa Town Center	West Palm Beach	FL	Middleton Hills	Madison	WI
Addison Circle	Addison	TX	Midtown Square	Houston	TX
Afton Village	Concord	NC	Mt. Laurel	Birmingham	AL
Aldea de Santa Fe	Santa Fe	NM	New point	Beaufort	SC
Amelia Park	Fernandina Beach	FL	Northwest Landing	DuPont	WA
Beachwalk	Michigan City	IN	Norton Commons	Louisville	KY
Brodie Creek	Little Rock	AR	Orenco Station	Portland	OR
Carlyle	Alexandria	VA	Park Duvalle	Louisville	KY
Celebration	Celebration	FL	Parkside	Atlanta	GA
CityPlace	West Palm Beach	FL	Parkside	Orlando	FL
Civano	Tucson	AZ	Pentagon Row	Arlington	VA
Coffee Creek Center	Chesterton	IN	Prospect	Longmont	CO
Cole's Corner	Dallas	TX	Randolph Neighborhood	Pittsburgh	PA
Cordova, The Town	Cordova	TN	Redmond Town Center	Seattle	WA
Crawford Square	Pittsburgh	PA	Residences	Dallas	TX
Crossings, The	Berkeley	CA	River Ranch	Lafayette	LA
Eastgate Town Center	South Miami	FL	Riverside	Atlanta	GA
Fairview Village	Portland	OR	Roosevelt Square	Phoenix	AZ
First Ward	Pittsburgh	PA	Rosemary Beach	Santa Rosa Beach	FL
Fruitvale BART Transit Village	San Francisco	CA	Salamanca	Deerfield Beach	FL
Gateway	Charlotte	NC	Seaside	Seaside	FL
Gorham's Bluff	Pisgah	AL	Shores	Irving	TX
Habersham	Beaufort	SC	South Bluffs	Memphis	TN
Haile Plantation Village Center	Gainesville	FL	Southern Village	Chapel Hill	NC
Harbor Town	Memphis	TN	Square	Dallas	TX
Harbour Place	Tampa	FL	Summerlin Centre	Las Vegas	NV
Heights	Dallas	TX	Tannin	Orange Beach	AL
Highlands' Garden Village	Denver	CO	Trillium	Cashiers	NC
Iron	Mt. Pleasant	SC	Uptown Place	Charlotte	NC
Kentlands	Gaithersburg	MD	Uptown Square	Denver	CO
King Farm	Tysons Corner	VA	Uptown Village	Dallas	TX
Laguna West	Berkeley	CA	Vermilion	Huntersville	NC
Lakelands	Gaithersburg	MD	Village at Central Park, The	Tulsa	OK
Legacy	Plano	TX	West Avenue	Austin	TX
Lindbergh Center	Atlanta	GA	Windsor	Vero Beach	FL
Mashpee Commons	Providence	RI	Worthington	Dallas	TX

Actual names were located for forty-eight of the seventy-two mailings; 33.3% were mailed to "Master Plan Developer/Designer."

Analysis of Questionnaire Responses

The following analysis will look at each individual question, evaluating responses per question and analyzing relationships between the questions as the section progresses.

Question 1 – Name of the residential development / community

This question was hand completed by the researcher before the questionnaire was mailed. It was meant to further direct the recipient to which development information was being solicited (in the case that the recipient was involved in more than one new urbanist community, or in the case that the questionnaire was unintentionally separated from the cover letter). To reiterate, contact information was not solicited for use in the data analysis of the questionnaires; data analysis was performed independent from the bias of identifying information.

Question 2 – Location (city/town and state/province)

This question asked the respondent to print the name of the city or town that the in which the development was located. In some cases, the development was actually located in a municipality different from what was listed in research (such as a town with a postal zone for another city's name or a suburb nearby a

central, more familiar city). The fact that "province" is included in the questionnaire stems from the fact that the mailings were originally to include developments in Canada. After determining to not include Canada in the study, the researcher neglected to remove the word from the questionnaire. Forty (40) of the forty-four (44) respondents completed question 2.

Question 3 – Name of person completing this questionnaire / Title and company of person completing this questionnaire

This question asked the respondent to identify himself/herself to clarify to the researcher who he may contact for future information, if necessary. In some cases, the person completing the questionnaire was different from the original person on the researcher's contact sheet used for the mailings. Forty-two (42) of the forty-four (44) respondents completed question 3.

Question 4 – Phone Number (optional)

This question asked for the respondent's telephone number so that the researcher could make future contact, if necessary. Thirty (30) of the forty-four (44) respondents completed question 4. The fact that the question was listed as "optional" may have influenced the decision to not list a number. The idea behind an optional telephone listing was to let the respondent understand that they could make it more difficult for the researcher to easily contact him or her, therefore making their participation more likely. Some individuals wish to not be easily contacted.

Question 5 – What is the internet website for the development?

This question asked the respondent to provide an avenue for the researcher to gain additional information about the development. In many cases, the researcher had access to the development's website. In some cases, he did not. A small number of developments had no apparent website of their own, but were included on the website for their master plan architecture/planning/design firm. Thirty-eight (38) of the forty-four (44) respondents completed question 5.

Question 6 – What is the age of the residential development / community (check one)?

This question intended to determine the age or construction status of the development. The term "residential development / community" was used in place of simply "development." Thirty-nine (39) of the forty-four (44) respondents completed question 6. See Figure 3-4 for breakdown of responses.

Question 7 – What land uses will be present on the completed project site (please provide percentage breakdowns of each use)?

This question attempted to gather data showing the breakdown of land use area at each new urbanist development. Unfortunately, little more than half the respondents appeared to take the time to answer this question fully; only 60% of those who checked the box for "mixed uses" proceeded to mark the actual percentage breakdowns of each land use area. The remainder marked those land uses present at the site but did not include percentages for applicable uses. Forty-four (44) of the forty-four (44) respondents completed question 7. See Figure 3-5 for breakdown of responses.

Question 8 – How many parking spaces are reserved for each residential unit?

This question sought to determine the availability of automobile parking for the residential portions of each development. Responses showed that the possible answers for the question could have been listed differently, as the responses were mostly written-in and independent of the available choices. Forty (40) of the forty-four (44) respondents completed question 8. See Figure 3-6 for breakdown of responses.

Question 9 – What percentage of the total project land area is devoted to surface parking?

This question focused on the configuration of the utility of parking within the development. With questions 8 and 9 we were given insight to evaluate the relative importance of parking within each project site, therefore relating to the relative importance of public transit in upcoming questions. Nineteen (19) of the forty-four (44) respondents completed question 9. See Figure 3-7 for responses.

Question 10 – What percentage of the total project land area is devoted to multi-level parking?

This question further focused on the utility of parking within the development. Forty-one (41) of the forty-four (44) respondents completed question 10. See Figure 3-8 for breakdown of responses.

Question 11 – What is (or will be) the status of ownership of the development after completion (check all that apply)?

<u>6</u>	Development has been complete since _____ (insert completion date)
	Completion dates include the following:
	1993
	1995
	1997
	1998
	2000 (May)
	2000 (October)
<u>12</u>	Some units complete (____%), but remainder still under construction
	Completion percentages include the following:
	16.3 20 25 33
	40 45 50 60
	75 78 80 98
<u>3</u>	Development as a whole under construction; more than 50% complete
<u>16</u>	Development as a whole under construction; less than 50% complete
<u>0</u>	Builders under contract; ground has not been broken
<u>2</u>	Development in bidding process for contractors
<u>0</u>	Architectural and engineering plans not final, but more than 50% complete
<u>0</u>	Architectural and engineering plans less than 50% complete
<u>0</u>	Development is still in the conceptual stage

Figure 3-4. Age of the New Urbanist Communities (by no. of responses)

<u>4</u>	Residential only – 100%
<u>40</u>	Mixed Uses – Area percentage ranges listed with each use
<u>40</u>	Residential (as part of mixed use) – Range from 28% to 99% of total area
<u>38</u>	Retail – Range from 0.6% to 30% of the total project area
<u>32</u>	Office – Range from 1.4% to 10% of the total project area
<u>12</u>	Educational – Range from 0.02% to 10% of the total project area
<u>10</u>	Religious – Range from 0.00001% to 5% of the total project area
<u>8</u>	Library – Range from 0.00001% to 30% of the total project area
<u>18</u>	Post Office – Range from 0.00001% to 5% of the total project area
<u>4</u>	Industrial – Range from 3% to 3.7% of the total project area
<u>30</u>	Parks/Open Space – Range from 12% to 60% of the total project area
<u>8</u>	Other Uses – Range from 4% to 15% of the total project area
	Other uses include the following:
	Community building (3)
	Athletic facilities
	Public rights-of-way
	Military
	Utilities (2)

Figure 3-5. Land Uses at New Urbanist Communities (by no. of responses)

Studio	<u>15</u>	One parking space per unit
	<u>8</u>	Two parking spaces per unit
1 BR	<u>13</u>	One parking space per unit
	<u>16</u>	Two parking spaces per unit
2 BR	<u>3</u>	One parking space per unit
	<u>25</u>	Two parking spaces per unit
	<u>1</u>	Four parking spaces per unit
3 BR	<u>2</u>	One parking space per unit
	<u>24</u>	Two parking spaces per unit
	<u>1</u>	Four parking spaces per unit
4 BR	<u>2</u>	One parking space per unit
	<u>19</u>	Two parking spaces per unit
	<u>2</u>	Three parking spaces per unit
	<u>1</u>	Four parking spaces per unit
Other responses:	All parking in common lots 400 street spaces for entire community Parking not applicable (2) 252 spaces, not assigned 554 spaces, not assigned (for 504 units) Downtown live/work units may have 4 stacked	

Figure 3-6. Parking Availability per Residential Unit Type (by no. of responses)

<u>3</u>	1% of total land area is surface parking
<u>4</u>	2% of total land area is surface parking
<u>2</u>	3% of total land area is surface parking
<u>1</u>	4% of total land area is surface parking
<u>2</u>	5% of total land area is surface parking
<u>1</u>	6% of total land area is surface parking
<u>2</u>	9% of total land area is surface parking
<u>2</u>	10% of total land area is surface parking
<u>1</u>	14% of total land area is surface parking
<u>1</u>	15% of total land area is surface parking

Figure 3-7. Land Area Devoted to Surface Parking (by no. of responses)

<u>26</u>	No multi-level parking exists on the site
<u>4</u>	1% of total land area is multi-level parking
<u>6</u>	2% of total land area is multi-level parking
<u>1</u>	15% of total land area is multi-level parking
<u>2</u>	20% of total land area is multi-level parking
<u>1</u>	25% of total land area is multi-level parking
<u>1</u>	96% of total land area is multi-level parking

Figure 3-8. Land Area Devoted to Multi-Level Parking (by no. of responses)

This question sought to understand the legal condition of the site once the development was complete or once units were occupied. Forty-four (44) of the forty-four (44) respondents completed question 11. See Figure 3-9 for breakdown of responses.

Question 12 – Is public transit service available in your city or region?

This question was meant to guide respondents to the proper questions to come. Those answering “yes” would continue with the transit-related questions, starting with question 13. Those answering “no” would be instructed to proceed to question 23 at the end of the questionnaire form. Furthermore, this question was intended to gauge the reality of a development’s commitment to the tenets of new urbanism.

On the questionnaire form, “public transit service” was defined as “that transit service that is open to the public, no matter who owns or operates the service in most cases it is operated by a public transit authority of the particular municipality or region in some cases it is provided by a private company.” Forty-four (44) of the forty-four (44) respondents completed question 12. See Figure 3-10 for breakdown of responses.

Question 13 – How far away from the development does (or will) the closest “local” public transit line travel (check one)?

This question was helpful for understanding the geographic proximity of local transit service. Beginning with this question and continuing through

question 22, only thirty-eight (38) respondents were applicable, due to their answer on question 12.

On the questionnaire form, "local" public transit service was defined as "that transit line that will potentially stop for a passenger at any transit stop along its line this is opposed to "express" or "commuter" lines which will bypass a number of local stops in order to arrive at high-density locations only." Thirty-six (36) of the applicable thirty-eight respondents completed question 13. See Figure 3-11 for breakdown of responses.

Question 14 – What mode(s) of public transit is (are) present in the location checked in question 13 (check all that apply)?

This question intended to discover what types of public transit existed in the vicinity of the new urbanist development. Thirty-six (36) of the thirty-eight (38) applicable respondents completed question 14. See Figure 3-12 for breakdown of responses.

Question 15 – How many different public transit routes operate within six blocks of your development (include any and all types of transit)?

This question attempted to uncover some information on the level of service present in the vicinity of the development. In general, six blocks is considered by transit industry standards as a common distance that potential transit passengers will walk to connect between an origin or destination and a transit stop. To determine, in part, the amount of public transit service present within six blocks could help assess the likelihood that potential passengers would

<u>28</u>	Leased units and common facilities will remain under the ownership of the <i>developer</i> , and not change hands.
<u>3</u>	Leased units and common facilities will change hands from <i>developer</i> to a <i>different</i> company.
<u>26</u>	Units that are sold will transfer to the ownership of the buyer.
<u>25</u>	There are a combination of units leased and properties sold within the development.
<u>17</u>	Streets/alleys will remain in private hands.
<u>24</u>	Streets/alleys will be dedicated to the local government.

Figure 3-9. Status of Ownership upon Completion (by no. of responses)

<u>38</u>	Yes, public transit is available (continue with question 13).
<u>6</u>	No, public transit is not available (skip to question 23)

Figure 3-10. Availability of Public Transit in the City/town (by no. of responses)

<u>9</u>	Public transit travels <i>through</i> the development.
<u>16</u>	Public transit meets the edge or boundary of the development.
<u>1</u>	Public transit travels within two blocks of the development.
<u>4</u>	Public transit travels within three to five blocks of the development.
<u>4</u>	Public transit travels within six blocks to one mile of the development.
<u>2</u>	Public transit travels within one to three miles of the development.
<u>0</u>	Public transit does not exist within three miles of the development.

Figure 3-11. Distance of Public Transit from Development (by no. of responses)

<u>14</u>	Heavy or Light Rail (subway, elevated rail, cablecar, streetcar on a track)
<u>36</u>	Fixed Route Bus (bus that does <i>not</i> deviate from its regular, fixed route)
<u>9</u>	Paratransit Vehicle (vehicle providing service only to the elderly or to passengers with disabilities)
<u>9</u>	Demand Response Vehicle (vehicle provides service to general public, but does not follow a set route)
<u>0</u>	Ferry Boat
<u>2</u>	Other (please specify)
Other responses include the following: Electric vehicle/car share program Future planned ferry boat system	

Figure 3-12. Modes of Public Transit within the Vicinity (by no. of responses)

utilize the service. Thirty-four (34) of the thirty-eight (38) applicable respondents completed question 15. See Figure 3-13 for breakdown of responses.

Question 16 – Is public transit available within six blocks at late night (approximately 9pm to 12midnight)?

This question further attempted to identify level of transit service in the vicinity. Thirty-two (32) of the thirty-eight (38) applicable respondents completed question 16. See Figure 3-14 for breakdown of responses.

Question 17 – Is public transit available within six blocks on Saturdays or Sundays?

This questioned continued with an attempt to determine level of transit service in the vicinity. Thirty-one (31) of the thirty-eight (38) applicable respondents completed question 17. See Figure 3-15 for responses.

Question 18 – Describe the impact of the completed development upon the local public transit service (check one).

This question attempted to discover the influence of the new urbanist community upon the physical routing of the transit service. Thirty-three (33) of the thirty-eight (38) applicable respondents completed question 18. See Figure 3-16 for breakdown of responses.

Question 19 – What type of interaction occurred between the developers of your project and the staff of the local transit provider (check one)?

This question aimed at the heart of the questionnaire. From this question, a large part of determining the importance of public transit in the new urbanist

<u>6</u> 0 Routes	<u>2</u> 4 Routes
<u>5</u> 1 Route	<u>0</u> 5 Routes
<u>4</u> 2 Routes	<u>1</u> 6 Routes
<u>6</u> 3 Routes	<u>10</u> Don't Know

Figure 3-13. Number of Transit Routes within the Vicinity (by no. of responses)

<u>18</u> Yes, service available	<u>14</u> No, service not available
----------------------------------	-------------------------------------

Figure 3-14. Availability of Late Night Transit Service (by no. of responses)

Saturday <u>27</u> Yes, service available	Sunday <u>23</u> Yes, service available
<u>4</u> No, service not available	<u>8</u> No, service not available

Figure 3-15. Availability of Weekend Transit Service (by no. of responses)

<u>12</u> Local transit service did <i>not</i> change its route(s) to conform to the new project.	
<u>7</u> Local transit service <i>extended</i> the length of its route(s) to meet the new project.	
<u>6</u> Local transit service <i>changed</i> the location of its route(s) to conform to the project.	
<u>0</u> Local transit service <i>discontinued</i> its route(s) to the area of the new project.	
<u>8</u> Other (please specify)	
Other responses include the following:	
	Park-and-ride built next-door
	We don't know yet, but are hopeful
	Route came later, not due to project
	Local transit coming in three years
	Working to extend route to project (4)

Figure 3-16. Impact of Development on Transit Routing (by no. of responses)

development could be found. The hypothesis on this particular question implied that the earlier the occurrence of interaction between the two parties, the more important public transit was to the project. Thirty-five (35) of the thirty-eight (38) applicable respondents completed question 19. See Figure 3-17 for breakdown of responses.

Question 20 – Describe the impact of public transit on the design and development of the project (check one).

This question further sought to determine the importance of public transit as an operational component of the new urbanist development. This question asked the respondent to give the overall viewpoint of the development team on the inclusion of transit in the planning process. Thirty-eight (38) of the thirty-eight (38) applicable respondents completed question 20. See Figure 3-18 for breakdown of responses.

Question 21 – Are people utilizing public transit according to projection (check one)?

This question aimed at getting the developer's point of view on transit ridership. It was anticipated that this question would yield results observed by the development team, and its inclusion was determined to be helpful in adding to the respondent's view of transit in the area. Thirty (30) of the thirty-eight (38) applicable respondents completed question 21. See Figure 3-19 for breakdown of responses.

Question 22 – If effective public transit was sought to serve people residing at, or traveling to, your development, but was unsuccessful in

<u>12</u>	Developers & staff met during the planning stage to discuss transit options.
<u>4</u>	Developers & staff met during the construction stage to discuss options.
<u>2</u>	Developers & staff met after the project completion to discuss options.
<u>2</u>	Developers contacted staff, but meetings never occurred.
<u>5</u>	Staff contacted developers, but meetings never occurred.
<u>7</u>	Neither staff nor developers contacted one another, and meetings never occurred.
<u>2</u>	Meetings between staff and developers to discuss transit options were arranged by a third party.
<u>1</u>	Other (please specify)
Other responses include the following: Developer offered assistance in planning the service, but decisions were made by transit authority independent from the developer, and developer is content with the plan.	

Figure 3-17. Interaction between Development Team and Transit Staff (by no. of responses)

<u>5</u>	Public transit service was viewed as an operational component of the development. Without public transit service in the vicinity, the development would not have been built, or would have been built at another location that had better transit service.
<u>12</u>	Public transit service was viewed as an important part of the development. The development would have been built in its current location, regardless, but the best transit options were sought in order to make the development a better success.
<u>20</u>	Public transit service was viewed as a good service to have nearby, but construction of the development was essentially <i>not</i> based on whether or not public transit was present.
<u>0</u>	Public transit service was viewed as a detriment to a good development. It was intended to build the project in a location not accessible by transit.
<u>1</u>	Other (please specify)
Other responses included the following: Provision was made for future transit.	

Figure 3-18. Impact of Transit on Design of Development (by no. of responses)

<u>1</u> No, transit service is not present	<u>3</u> Yes, ridership meets projection
<u>4</u> No, ridership is below projection	<u>5</u> Yes, ridership exceeds projection
<u>14</u> Too soon to tell	<u>3</u> Other (please specify)
Other responses included the following: Don't Know (3)	

Figure 3-19. Transit Use, according to Development Team (by no. of responses)

accomplishing that goal, what was the reason from the perspective of those people (check all that apply)?

This question further aimed at the developer's point of view on transit, but this time regarding the attitude(s) of the *potential* passenger. This question was not expected to yield accurate results, but it was hoping to get a general idea of the respondent's viewpoint of transit attitudes among those in the development. Twenty (20) of the thirty-eight (38) applicable respondents completed question 22. See Figure 3-20 for breakdown of responses.

Question 23 – What terminology would best describe your development (check one)?

This question's purpose was to determine if the development team considered "new urbanism" to be the main design terminology to describe the development. If "new urbanism" was checked on the form, then the transit and new urbanist variables can more easily be tested between one another. Thirty-five (35) of the thirty-eight (38) applicable respondents completed question 23. Forty-one (41) of the forty-four (44) *total* respondents completed question 23. See Figure 3-21 for breakdown of responses from applicable respondents, and see Figure 3-22 for breakdown of responses from *all* respondents.

Data Analysis

Clearly, not every question used on the questionnaire is intended to be a critical part of the analysis. Such supplementary questions are included either to introduce the more important questions (such as the way question 18 introduces

0	Transit did not travel away to <i>preferred</i> locations.
2	Transit did not run at late night or on weekends.
2	People not willing to give up their personal autos.
0	Transit service was not <i>frequent</i> enough.
3	Transit service was too far of a walk from the site.
1	Riding transit was viewed as low-class or undesirable.
13	Cannot yet answer this question; development is still under construction or is too new to evaluate.
2	Other (please specify)
Other responses include the following: Don't Know (2)	

Figure 3-20. Perceived Reasons Transit was Avoided (by no. of responses)

30	New Urbanism
2	Neo-traditional
0	Transit Village
0	Conventional/traditional development
3	Other (please specify)
Other responses include the following: Post-new urban	
Urban	
Urban infill	

Figure 3-21. Development Description in Transit-Serviced Locations (by no. of responses)

34	New Urbanism
4	Neo-traditional
0	Transit Village
0	Conventional/traditional development
3	Other (please specify)
Other responses include the following: Post-new urban	
Urban	
Urban infill	

Figure 3-22. Development Description among All Questionnaire Respondents (by no. of responses)

question 19) or to cushion the transition from project-related questions to transit-related questions (such as the way question 11 cushions the impact of question 13). Still other questions are present to merely to get a sense of the site.

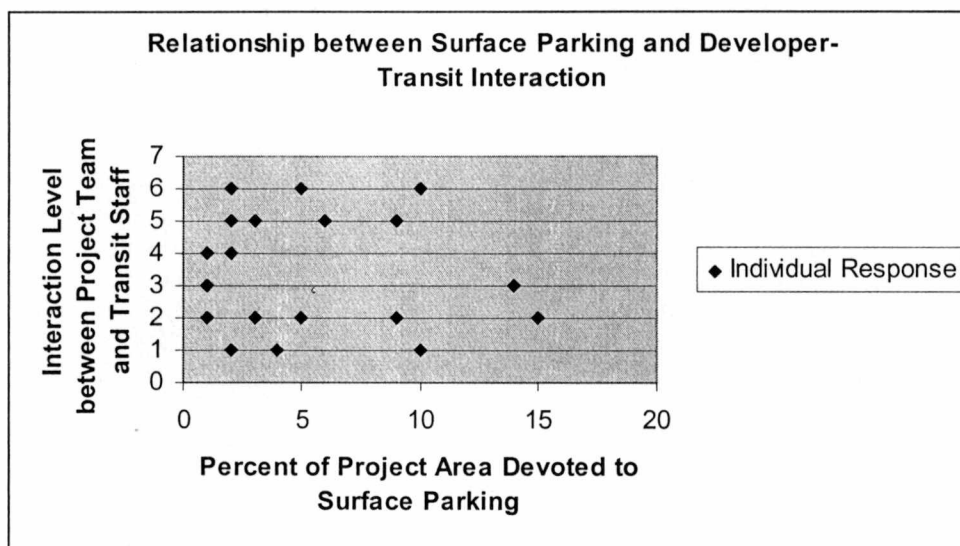
Hypothesis A. Proportion of surface parking to area (question 9) is inversely related to interaction level between project team and transit staff (question 19). Table 3-2 is designed using the nineteen (19) respondents who answered *both* question 9 and question 19. Surface parking percentage is graphed on the y-axis from 0% to 20%. Interaction level is graphed on the x-axis by the six (6) listed levels of interaction.

The results of plotting the two variables show no apparent relationship between project land area percentage devoted to surface parking and the interaction between the development team and the local transit staff.

Hypothesis B. Observed transit utilization level (question 21) is proportional to the relative proximity of public transit to the development site (question 13). Table 3-3 is designed using the sixteen (16) responses that answered *both* questions 13 and 21 and did not answer "don't know" or "too soon to tell" for question 21. Relative proximity of public transit to the development site is graphed on the x-axis with levels 1 through 7, and observed transit utilization levels 1 through 3 is graphed on the y-axis.

The results of plotting the two variables show an apparent positive relationship between proximity of transit service to the development and the observed transit usage within the development.

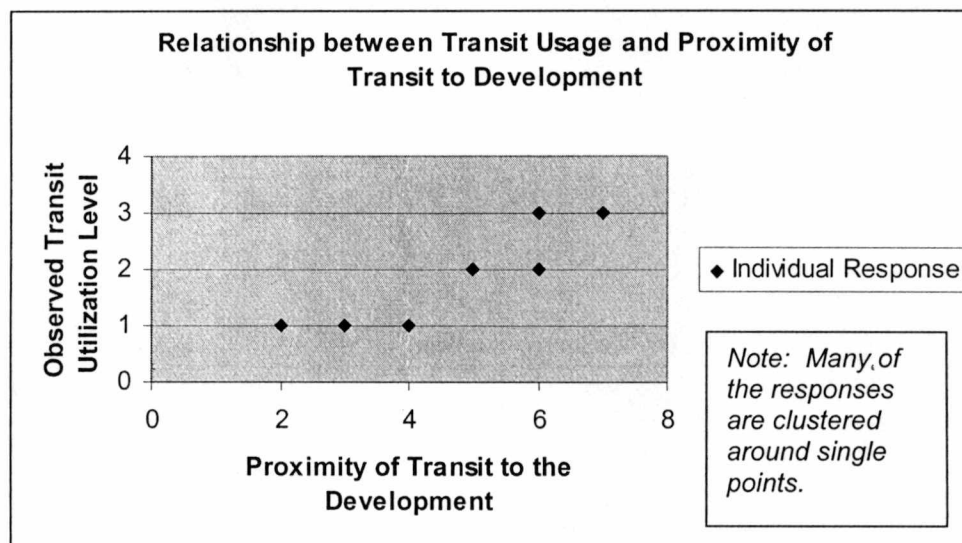
Table 3-2. Relationship between Surface Parking and Developer-Transit Interaction



Levels of Interaction between Project Team and Transit Staff

- 1 Neither staff nor developers contacted one another and meetings never occurred.
- 2 Transit staff contacted developers, but meetings never occurred.
- 3 Developer contacted transit staff, but meetings never occurred.
- 4 Developers and staff met after the project completion to discuss transit options.
- 5 Developers and staff met during the construction stage to discuss transit options.
- 6 Developers and staff met during the planning stage to discuss transit options.

Table 3-3. Relationship between Observed Transit Usage and Proximity of Transit to Development



Levels of Proximity of Transit to the Development

- 1 Public transit does not exist within three miles of the development.
- 2 Public transit travels within one to three miles of the development.
- 3 Public transit travels within six blocks to one mile of the development.
- 4 Public transit travels within three to five blocks of the development.
- 5 Public transit travels within two blocks of the development.
- 6 Public transit meets the edge or boundary of the development.
- 7 Public transit travels *through* the development.

Levels of Observed Transit Utilization

- 1 Ridership is below projection.
- 2 Ridership meets projection.
- 3 Ridership exceeds projection.

Hypothesis C. Level of interaction between the development team and the transit staff (question 19) is proportional to level of impact of the transit system on the design and development of the new urbanist project (question 20). Table 3-4 is designed using the twenty-five (25) responses that answered *both* questions 19 and 20. Level of interaction between developers and transit staff is graphed with levels 1 through 6 on the x-axis, and level of impact of transit on the development's design is graphed on the y-axis with levels 1 through 4.

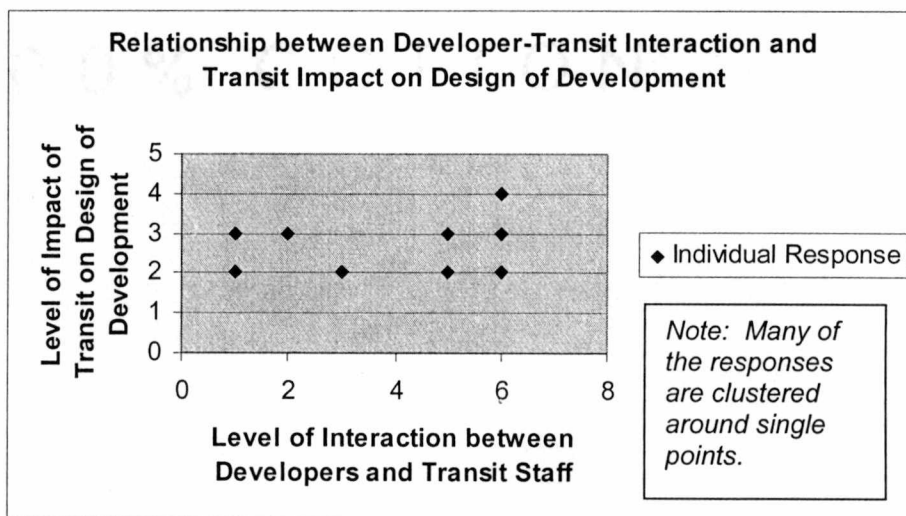
The results of plotting the two variables show no decisive relationship between level of interaction between developer and transit staff and level of impact of public transit on the design of the new urbanist development.

Hypothesis D. Observed transit utilization level (question 21) is proportional to level of mode of transit available in the vicinity (question 14). Table 3-5 is designed using the sixteen (16) responses that answered *both* questions 14 and 21. Level of observed transit utilization is graphed with levels 1 through 3 on the x-axis, and level of mode of transit available is graphed on the y-axis with levels 1 through 3.

The results of plotting the two variables show an apparent positive relationship between observed transit ridership and level of mode of transit available in the vicinity.

Hypothesis E. Level of proximity of public transit to the new urbanist development (question 13) is proportional to the level of impact of transit on the design and the development of the project (question 20). Table 3-6 is designed

Table 3-4. Relationship between Developer-Transit Interaction and Transit Impact on the Design of the Development



Level of Interaction between Developers and Transit Staff

- 1 Neither staff nor developers contacted one another, and meetings never occurred.
- 2 Transit staff contacted developers, but meetings never occurred.
- 3 Developers contacted staff, but meetings never occurred.
- 4 Developers and staff met *after* the project completion to discuss transit options.
- 5 Developers and staff met *during* the construction stage to discuss transit options.
- 6 Developers and staff met during the *planning* stage to discuss transit options.

Level of Impact of Transit on Design of Development

- 1 Public transit service was viewed as a detriment to a good development. It was intended to build the project in a location that was *not* accessible by public transit.
- 2 Public transit service was viewed as a good service to have nearby, but construction of the development was essentially *not* based on whether or not public transit was present.
- 3 Public transit service was viewed as an important part of the development. The development would have been built in its current location, regardless, but the best transit options were sought in order to make the development a better success.
- 4 Public transit service was viewed as an operational component of the development. Without public transit service in the vicinity, the development would not have been built, or would have been built in another location that had better transit service.

Table 3-5. Relationship between Observed Transit Usage and Mode of Transit Available

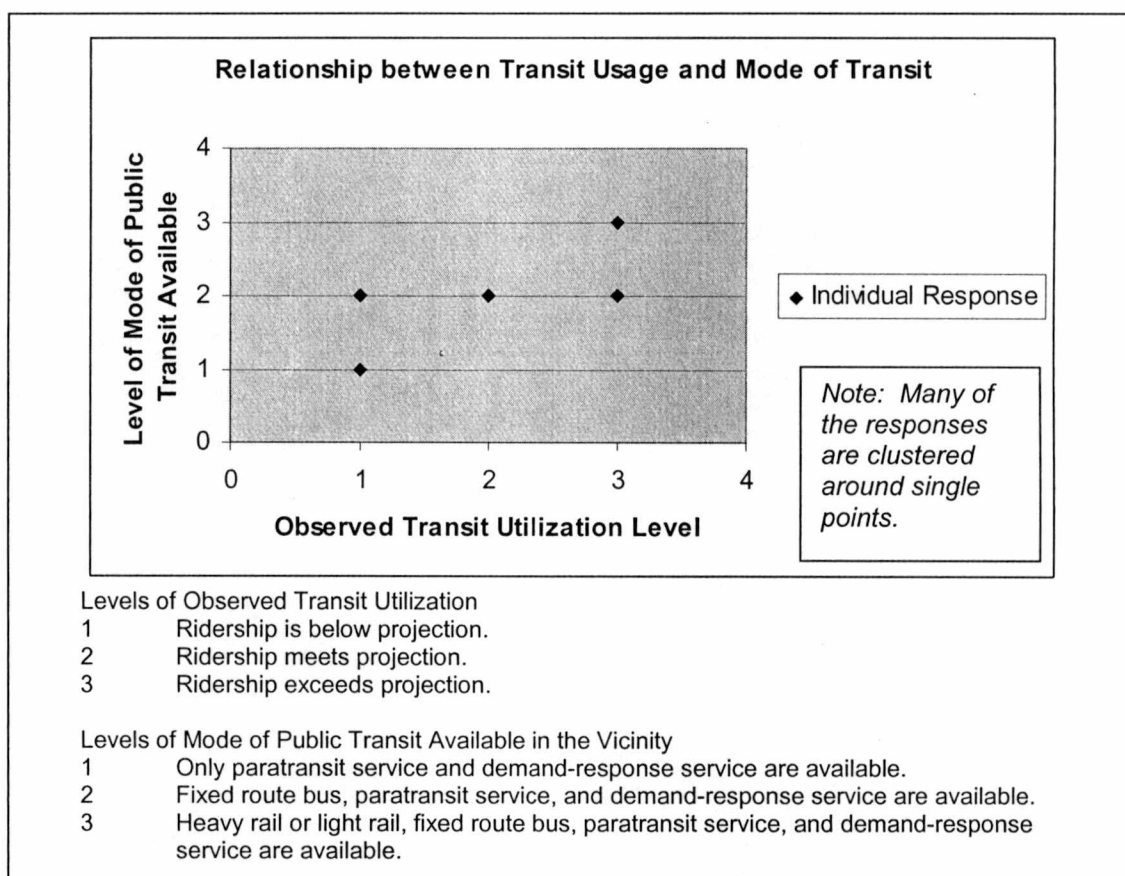
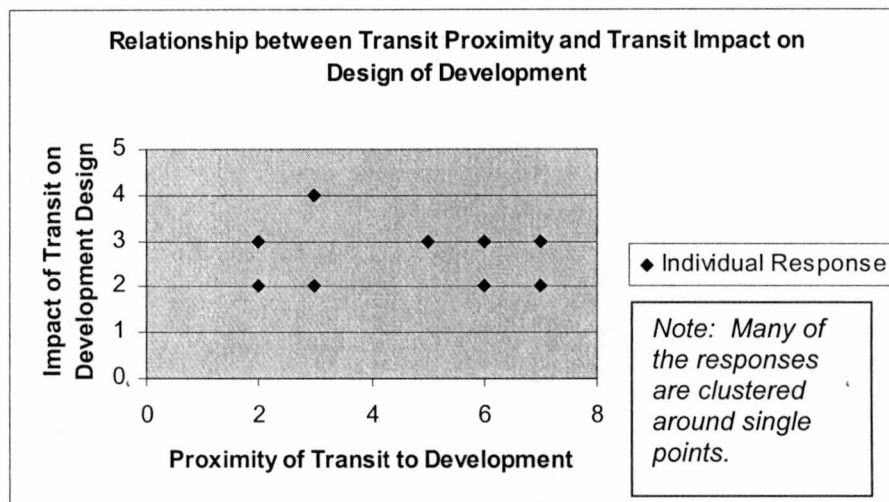


Table 3-6. Relationship between Proximity of Transit to the Development and Transit Impact on the Design of the Development



Levels of Proximity of Transit to the Development

- 1 Public transit does not exist within three miles of the development.
- 2 Public transit travels within one to three miles of the development.
- 3 Public transit travels within six blocks to one mile of the development.
- 4 Public transit travels within three to five blocks of the development.
- 5 Public transit travels within two blocks of the development.
- 6 Public transit meets the edge or boundary of the development.
- 7 Public transit travels *through* the development.

Level of Impact of Transit on Design of Development

- 1 Public transit service was viewed as a detriment to a good development. It was intended to build the project in a location that was *not* accessible by public transit.
- 2 Public transit service was viewed as a good service to have nearby, but construction of the development was essentially *not* based on whether or not public transit was present.
- 3 Public transit service was viewed as an important part of the development. The project would have been built in its current location, regardless, but the best transit options were sought in order to make the development a better success.
- 4 Public transit service was viewed as an operational component of the development. Without public transit service in the vicinity, the development would not have been built, or would have been built in another location that had better transit service.

using the twenty-seven (27) responses that answered *both* questions 13 and 20. Level of proximity of transit to the development is graphed with levels 1 through 7 on the x-axis, and level of impact of transit on the design of the development is graphed on the y-axis with levels 1 through 4.

The results of plotting the two variables show no apparent relationship between proximity of public transit to the development site and level of impact of transit on the design and development of the site.

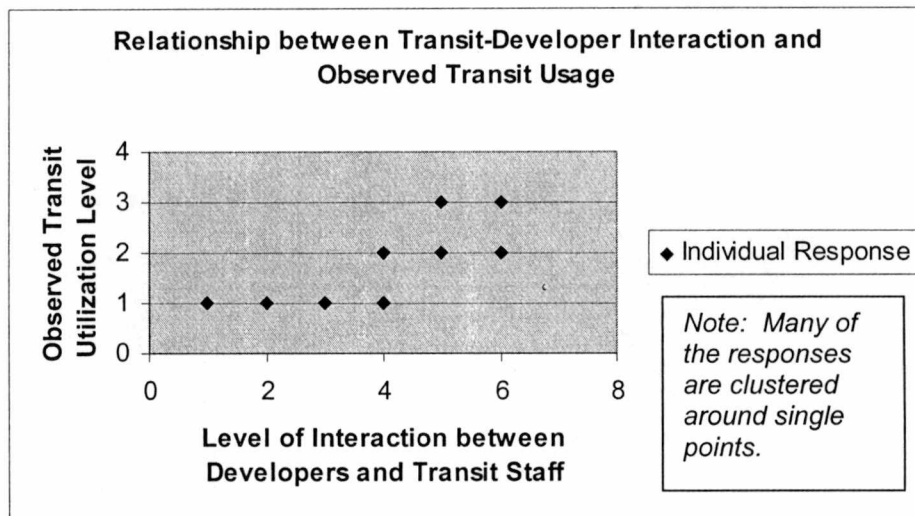
Hypothesis F. Level of interaction between development team and local transit staff (question 19) is proportional to observed transit utilization (question 21). Table 3-7 is designed using the sixteen (16) responses that answered *both* questions 19 and 21. Level of interaction between developers and transit staff is graphed with levels 1 through 6 on the x-axis, and level of observed transit utilization is graphed with levels 1 through 3 on the y-axis.

The results of plotting the two variables show an apparent positive relationship between observed transit ridership and level interaction between transit staff and project developers.

Data Analysis Findings

As with any analysis, data could be more clearly displayed and evaluated if each and every questionnaire submitted was *fully* completed. In the case of this data analysis, there were no two hypothesis sets of responses that bore the exact same sheets of paper. For example, the sixteen responses used in hypothesis D were not the same sixteen responses that were used in hypothesis

Table 3-7. Relationship between Transit-Developer Interaction and Observed Transit Usage



Level of Interaction between Developers and Transit Staff

- 1 Neither staff nor developers contacted one another, and meetings never occurred.
- 2 Transit staff contacted developers, but meetings never occurred.
- 3 Developers contacted staff, but meetings never occurred.
- 4 Developers and staff met *after* the project completion to discuss transit options.
- 5 Developers and staff met *during* the construction stage to discuss transit options.
- 6 Developers and staff met during the *planning* stage to discuss transit options.

Levels of Observed Transit Utilization

- 1 Ridership is below projection.
- 2 Ridership meets projection.
- 3 Ridership exceeds projection.

B, despite the fact that one particular variable, "observed transit utilization level," was used in both hypotheses. However, findings per hypothesis test can still hold important value.

Of the forty-four (44) total questionnaire responses in the data set, major points of significance include the following:

- Four (4) developments describing themselves as "new urbanist" consist of residential-only uses (no mixed use), in direct opposition to new urbanist ideals.
- One particular new urbanist development built four parking spaces per two-bedroom, three-bedroom, and four-bedroom unit, in direct competition with new urbanist values
- Four (4) of the six (6) developments *not* located in a city or town with public transit service describe their development as "new urbanist," in contrast to tenets of new urbanism.
- Only 31.6% of developments experienced interaction between project team and local transit staff before construction on the site began.
- 55% of the new urbanist project developers stated that construction of their project was not based on whether or not transit was present in the vicinity.

Of the six (6) critical tests in the questionnaire data set, three hypotheses tested positive, and three tested negative. Noteworthy relationships were found to exist between the following sets of variables:

- Relationship between Observed Transit Usage and Proximity of Transit to Development
- Relationship between Observed Transit Usage and Mode of Transit Available
- Relationship between Transit-Developer Interaction and Observed Transit Usage

Relationships were found to *not* exist between the following sets of variables:

- Relationship between Surface Parking and Developer-Transit Interaction
- Relationship between Developer-Transit Interaction and Transit Impact on the Design of the Development
- Relationship between Proximity of Transit to the Development and Transit Impact on the Design of the Development

The following chapter will continue the research with a breakdown of the case study methodology and findings.

CHAPTER 4

CASE STUDY METHODOLOGY AND FINDINGS

The methodology for this chapter is case study research in the form of interviews and site observations. This format is intended to gather information from an appropriate contact person at the new urbanist development site, such as a master plan designer, and an appropriate individual at the office of the local public transit provider, such as a fixed route service planner.

Role of the Case Study

As part of case study methodology, site visits are for the purpose of shooting photographs, making observations about the physical layout of the project area, and making observations about connections with and ridership on the local transit service. Interviews are intended to gather background data and current statistics on a level much deeper than the survey questionnaires are able to provide.

For the purposes of this study, each of the four cases will be examined in light of the same set of qualifiers – the selection process, the existing conditions, the project site interviews, the transit agency interviews, and the data evaluation. In the closing section of this chapter, information gathered from the case studies will be compared and contrasted with data analysis findings from the survey questionnaire.

Selection of Participants

Participants for the case studies are selected from the seventy-two (72) mailed survey questionnaires that serve as the initial sampling frame. The criteria used to select the sample include six points.

Criterion 1

Sampling unit must have professed an interest to participate in the study. Questionnaires must be completed and returned to the researcher. With this criteria point, sampling frame is narrowed to forty-four (44) units.

Criterion 2

Sampling unit must have public transit service available in their city or region. Questionnaire respondent must answer "yes" to question 12. With this criteria point, sampling frame is narrowed to forty (40) units.

Criterion 3

Sampling unit must profess that public transit is key to the development and design of the project. Questionnaire respondent must claim one of the first two possible answers on question 20, stating that public transit is *at least* viewed as important enough to the development that the best transit options were sought to make the site as connected to transit as possible. With this criteria point, sampling frame is narrowed to eighteen (18) units.

Criterion 4

Sampling unit must be within a reasonable traveling distance from the researcher's home in Knoxville, Tennessee. Five hundred miles is considered by the researcher to be "reasonable." Sampling frame is narrowed to eight (8) units.

Criterion 5

Sampling unit must be described as new urbanist. Questionnaire respondent must answer "New Urbanism" on question 23. With this criteria point, sampling frame is narrowed to seven (7) units.

Criterion 6

Sampling unit must be a development that is either complete in its construction or has enough of the project completed that proper observations may be made. Proper observations could be made in developments that were at least 33% complete and occupied in both residential and commercial space. In some cases, follow-up contacts in the form of telephone calls were required to assess this point. As a result the sampling frame is narrowed to four (4) units.

Fortunately, four case studies are the minimum number initially proposed for this thesis. The case studies include the following new urbanist projects:

1. I'On community in Mount Pleasant, South Carolina
2. Vermillion community in Huntersville, North Carolina
3. South Bluffs community in Memphis, Tennessee
4. King Farm community in Rockville, Maryland

Analysis of Case Studies

The case study analysis examines each site in terms of existing conditions, project site interviews, transit agency interviews, and data analysis. The interviews were conducted only after presenting the interviewee with a copy of the "Informed Consent Statement," as required by the Human Subjects in Research criteria, Research Compliance Services division, University of Tennessee Office of Research. As with the survey questionnaire, this compliance is intended to protect the subject who completes the questionnaire from any harm or improper use of the data they submit in the interview process. Figure 4-1 illustrates this form, which specifically states that all data collected will be used for research purposes as related to this thesis report. It goes on to say that all pertinent interview materials will be stored for three years at the Department of Urban and Regional Planning, 108 Hoskins Library, The University of Tennessee, Knoxville, under the supervision of the departmental secretary.

Included in the interview process was a script of potential questions used for each interview meeting. Meetings were arranged in advance, and individual participants were *willing* to meet with the researcher. Some questions were amended according to whether the interviewee represented the project development team or the staff of the local transit provider. Figure 4-2 shows this script of questions.

Informed Consent Statement

Your participation in this study is voluntary; you may decline to participate without penalty. If you decide to participate, you may withdraw from the study at anytime without penalty. If you withdraw from the study before data collection is completed, your data collected up to that point would not be used. This interview should last an estimated duration of ten (10) to twenty (20) minutes. Data collected in this interview will be used for research purposes in compiling a master's thesis on the topic of "public transit in new-urbanist communities". All material submitted in this interview will remain in the possession of the Department of Urban and Regional Planning, 108 Hoskins Library, University of Tennessee, Knoxville, Tennessee 37996, under locked file cabinet and under the supervision of Nancy Loftis, Program Resource Specialist, for three (3) years, after which the material will be destroyed.

CONSENT

I have read the above information. I have received a copy of this form. I agree to participate in this study.

Participant's signature _____ Date _____

Investigator's signature _____ Date _____

Figure 4-1. Informed Consent Statement

Script of Questions for Case Study Interviews

(Have interviewee sign informed consent form)

1. (for developer only) What are the special features that make this development a "New Urbanist" community?
2. Please describe the interaction between the development planning team and the local transit provider at the earliest point of conversation regarding this development.
3. Did the other party appear to be interested in cooperating for the good of transit service to this new development? If not, why not?
4. (for transit provider only) What ridership figures can you provide for boardings and de-boardings in the vicinity of the development?
5. (for transit provider only) Describe how the development has changed ridership statistics and transit routes when compared to the time before the development was built.
6. (for developer only) What do you perceive to be the impact of transit service upon the people who live and/or work in your development?
7. (for developer only) What do you perceive to be the impact of people who live and/or work in your development upon the local transit service?
8. What negative impacts, if any, became apparent between the development and the transit service *after* the development opened?
 - a. Site design impacts
 - b. Transit personnel impacts
 - c. Transit user impacts
 - d. Resident or property management impacts
 - e. Other impacts
9. What *positive* impacts, if any, became apparent between the development and the transit service after the development opened?
 - a. Site design impacts
 - b. Transit personnel impacts
 - c. Transit user impacts
 - d. Resident or property management impacts
 - e. Other impacts
10. (for transit provider only) What would your team do differently in the planning phase for the *next* New Urbanist project that builds locally?

(Thank the interviewee for their time, and offer to mail an abstract-copy of the thesis findings in fall, 2001)

Figure 4-2. Script of Case Study Interview Questions

Case Study 1 – l'On Community, Mount Pleasant, South Carolina

The l'On community is located in the Charleston, South Carolina, suburb of Mount Pleasant, located three miles directly east across the Cooper River from the historic Charleston peninsula that contains its central business district. Mount Pleasant is surrounded by water on three sides – the Wando River on the north, Charleston Harbor on the west, and the inter-coastal waterway on the south that separates it from the coastal municipalities of Sullivan's Island and Isle of Palms. l'On is located along the northern edge of the town, with the back edge of the development abutting Hobcaw Creek, a tributary of the Wando River and the front edge against Mathis Ferry Road, one quarter mile north of U.S. Highway 17 which links the area directly to downtown Charleston to the west.

Existing Conditions. The 243-acre development is named for Jacob l'On (1782-1859), planter, U.S. Army and militia officer, and South Carolina state legislator, and it is physically located between two single-family neighborhoods built in the early 1970s. The site is planned for four distinct sub-communities – l'Onsborough, Eastlake, Ponsbury, and Shelmore – each with its distinct set of development guidelines, architectural priorities, and mix of densities. The sub-community of l'Onsborough contains the development's entryway town center node, eventually containing the clear majority of the project's commercial space. Figure 4-3 is a map of the l'On community, Figure 4-4 displays two of the buildings in the town center, and Figure 4-5 shows a typical streetscape in l'Onsborough, one block from the town center.

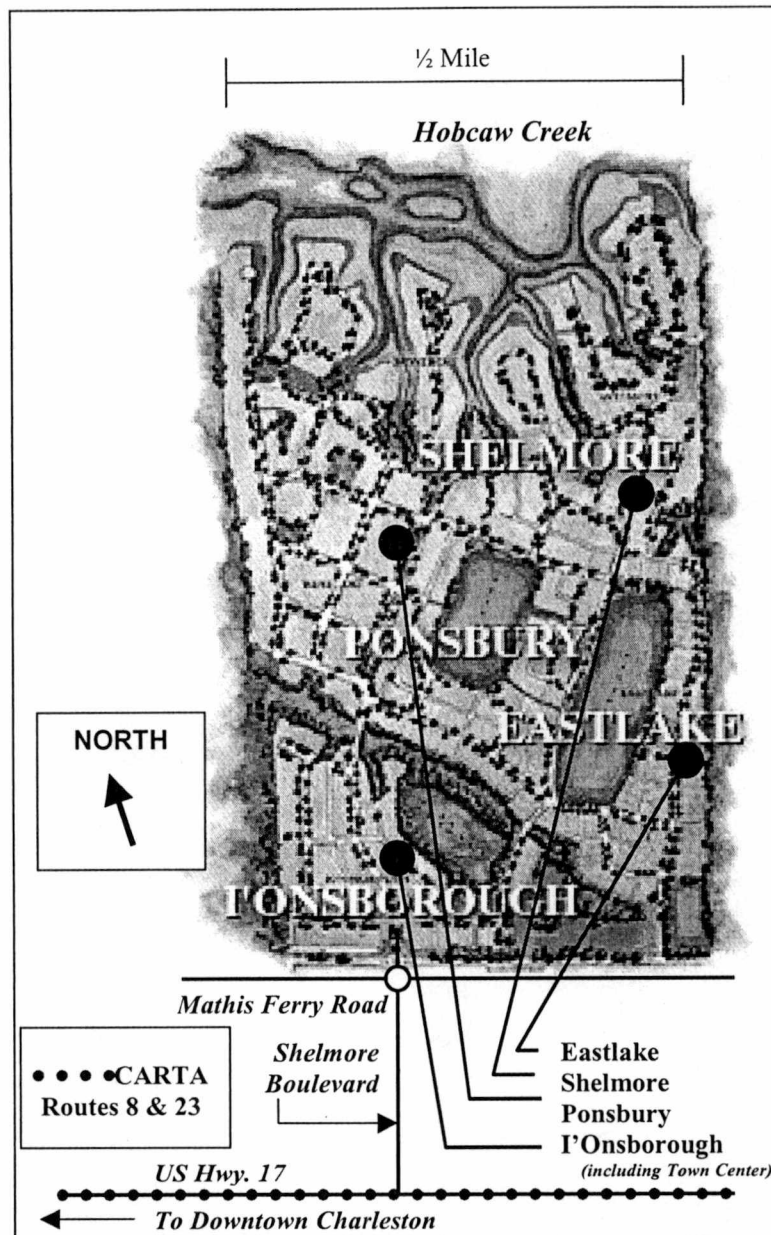


Figure 4-3. Map of I'On

Source: I'On Trust, The. Internet: <http://www.ionvillage.com/>.
Mount Pleasant, SC: The I'On Trust, 2001.



Figure 4-4. Town Center, I'On



Figure 4-5. I'Onsborough Residential Street, I'On

Surrounding the town center are multiple blocks of single-family dwelling units of vernacular architectural styles and urban setback and density. Within five blocks to the north of the town center, the building densities are less, housing units are larger, and architectural styles are more varied. In the sub-community of Eastlake, houses are no more than a one-block walk to one of two small lakes accenting the l'On development. This area is six to ten blocks from the project's entryway at Mathis Ferry Road and thus six to ten blocks from the presence of public transit service. By normal standards of public transit operations, the typical transit passenger will walk no more than six blocks to connect with a transit stop. The remaining eight to ten blocks of the development *beyond* the Eastlake sub-community is not anticipated by transit standards as applicable to the transit-riding zone. Figure 4-6 shows houses in the Eastlake sub-community.

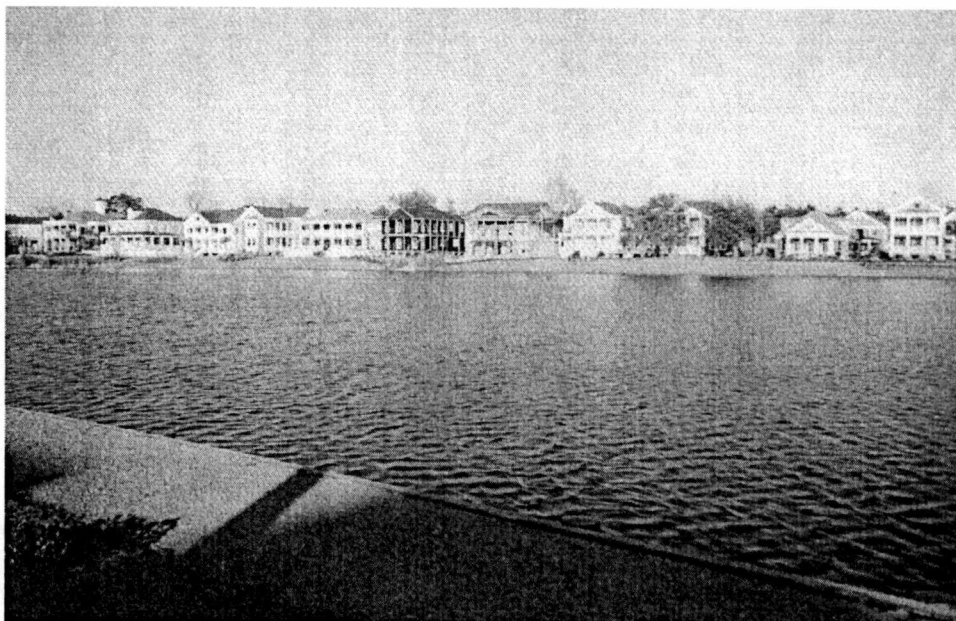


Figure 4-6. Eastlake Houses Surrounding Lake, l'On

As of the researcher's visit to the community on Monday, February 26, 2001, 45% of the entire development had been built out. The areas not yet constructed included the Ponsbury sub-community in the northwestern quadrant of the site, half of the Shelmore community on the northern edge of the site, and half of the town center on the southern boundary of the site. It was noted that all dwelling units had either enclosed garages or spaces for future automobile parking facilities on their individual parcels. While street parking appeared to be encouraged by the design, it was clearly not the only place for a resident to park his car. Figure 4-7 shows residential parking adjoining the alley in the l'Onsborough sub-community, while Figure 4-8 illustrates the setting for the l'On bus stop, located just outside the main entrance to the development on Mathis Ferry Road at Shelmore Boulevard.



Figure 4-7. l'Onsborough Residential Parking, l'On



Figure 4-8. CARTA Bus Stop at l'On Entrance on Mathis Ferry Road

Public transit service for the area is provided by Charleston Area Regional Transportation Authority ("CARTA"). CARTA's bus stop was located on the far side of the street shown, accessible through the designated walkway that crosses two lanes of traffic. Information behind the reasoning to remove the bus service will be covered later in l'On section. There is no hard surface pad nor is there evidence of any other substantial bus stop amenity, such as a bench or shelter. The walkway is connected with the sidewalk system that permeates the entire l'On community.

CARTA's Route 22 (Mount Pleasant Local) served this area from early 2000 until February 17, 2001. It ran along the front edge of the development, but did not enter the l'On community. The routes currently closest to l'On are

located one-quarter mile to the south on U.S. Highway 17; they include Route 8 (Isle of Palms) and Route 23 (US 17 N / Town Centre) and connect directly to both central Mount Pleasant and central Charleston.

Project Site Interview. The researcher met with Mr. Geoffrey Graham, senior partner and project manager for The I'On Company. Mr. Graham reviewed some of the facts he submitted on the survey questionnaire, including the following points:

- 45% of the site is developed, including the town center.
- Mixed uses on the site include 55% residential, 10% retail, 15% open space, 15% public amenities (including streets, sidewalks, and other facilities), and 5% civic/institutional/religious uses.
- Less than 1% of off-street parking is devoted to surface parking.
- Public transit (fixed route bus) meets the edge of the development.
- Local transit service was added by CARTA, in accordance with City of Mount Pleasant funding, and without the offered direction from the I'On development team.
- Public transit was viewed as important to the "new urbanist" development, although the project would have still been built in its current location even without transit service.

Mr. Graham proceeded to answer the researcher's questions. Regarding the special features that make the development "new urbanist," he stated that I'On was an infill site that connected its interior roadways with the existing residential neighborhoods on both sides. It was a mixed-use development, although the mix of uses did not include multi-family dwellings; all units were single-family house structures. Building setbacks were shallow, sidewalks were

present throughout the development, and lots were small. Furthermore, parks and other open space were scattered and plentiful, and architecture was vernacular, in keeping with styles common to historic Charleston.

The I'On Company offered to meet with CARTA to design transit service to the development, but decisions were made without actual meetings. The I'On Company was pleased with the establishment of Route 22 but was unaware until the date of the meeting with this researcher that the route had been discontinued nine days earlier.

Mr. Graham perceived there to be no real impact of the former transit service on the people who live and/or work in the community. He was aware of one regular, sight-impaired resident who daily depended upon the bus, but no other residents or employees in the town center were ever observed walking down the sidewalk to Mathis Ferry Road for that or any other purpose. The people who reside in I'On are socio-economically well-to-do, and every household and each employee appear to have their own mode of transportation.

There were no observed impacts, negative or positive, with regard to the presence of the transit service, other than answering the call for transportation for the one resident mentioned earlier.

The interview concluded with a quick tour of the development site and an observation of the large amount of traffic on Mathis Ferry Road at the evening rush hour. The intersection of Mathis Ferry Road and Shelmore Boulevard at the entrance to I'On is a traffic circle, or "turnabout," so the vehicles were rarely at a complete stop, even at the evening peak traffic time.

Transit Agency Interview. The researcher met with Mr. Russell Byrd, transportation planner for CARTA, and discussed the conditions revolving around transit service to the I'On community.

Mr. Byrd answered the researcher's questions and explained the reasons behind establishing, and then removing, transit service to that area. He agreed that the interaction between CARTA and The I'On Company never developed before the I'On community went online, but he asserted that meetings were held between CARTA and the City of Mount Pleasant to discuss an increase in monies to fund a transit line to run along Mathis Ferry Road and other areas of the city. Mr. Byrd also took into consideration the recommendations made from a study by The Weslin Group, a transportation consulting firm in Bellevue, Washington, which also called for a shuttle to connect persons from their homes to the closest local transit stop. While this shuttle plan was not to be funded until a future date, the Route 22 plan went online in early 2000.

Over the course of the year, ridership on Route 22 fell far below minimum expectations, and the board of trustees for CARTA mandated that the route be discontinued, even in opposition to the staff recommendation to keep the route for a few more months. The minimum farebox recovery ratio for CARTA was established at 20%; Route 22 had an average 4.5% recovery ratio for the second half of 2000. Mr. Byrd said that passenger counts on the route were not conducted at the I'On bus stop, but he knew of only one passenger who would be without transportation once the bus was discontinued – a sight-impaired

resident of l'On. Other than that one case, the l'On development had no real impact on the ridership of Route 22 or the system as a whole.

Mr. Byrd went on to state that there were no major impacts, either negative or positive, with the presence of the l'On community. He said that the neighborhood was rather affluent to have much interaction with a transit system that tended to serve traditionally modest-income, elderly, and disabled citizens of the area. Mr. Byrd closed by stating that new urbanism is still somewhat foreign to developers in the area. He hopes that other communities will be built, but with more socio-economic diversity envisioned so that transit *will* be a part of the mix. Next time, CARTA would meet with the developers before ground is broken.

Case Study 2 – South Bluffs Community, Memphis, Tennessee

The South Bluffs Community is located at the south end of the Memphis central business district in a transition area between distributing, manufacturing, retail, office, and residential land uses. The development rests in a former, abandoned manufacturing site and overlooks Riverside Drive and the Mississippi River on its western boundary and fronts Tennessee Street at Calhoun Avenue on its eastern boundary, just two blocks west of the newly-refurbished Central Station (Amtrak/MATA). Its southern edge abuts Georgia Avenue.

Existing Conditions. This 150-acre new urbanist development is nearing completion as all apartments have been constructed, and all single-family residential lots have been built-out. Figure 4-9 is a map of the South Bluffs community.

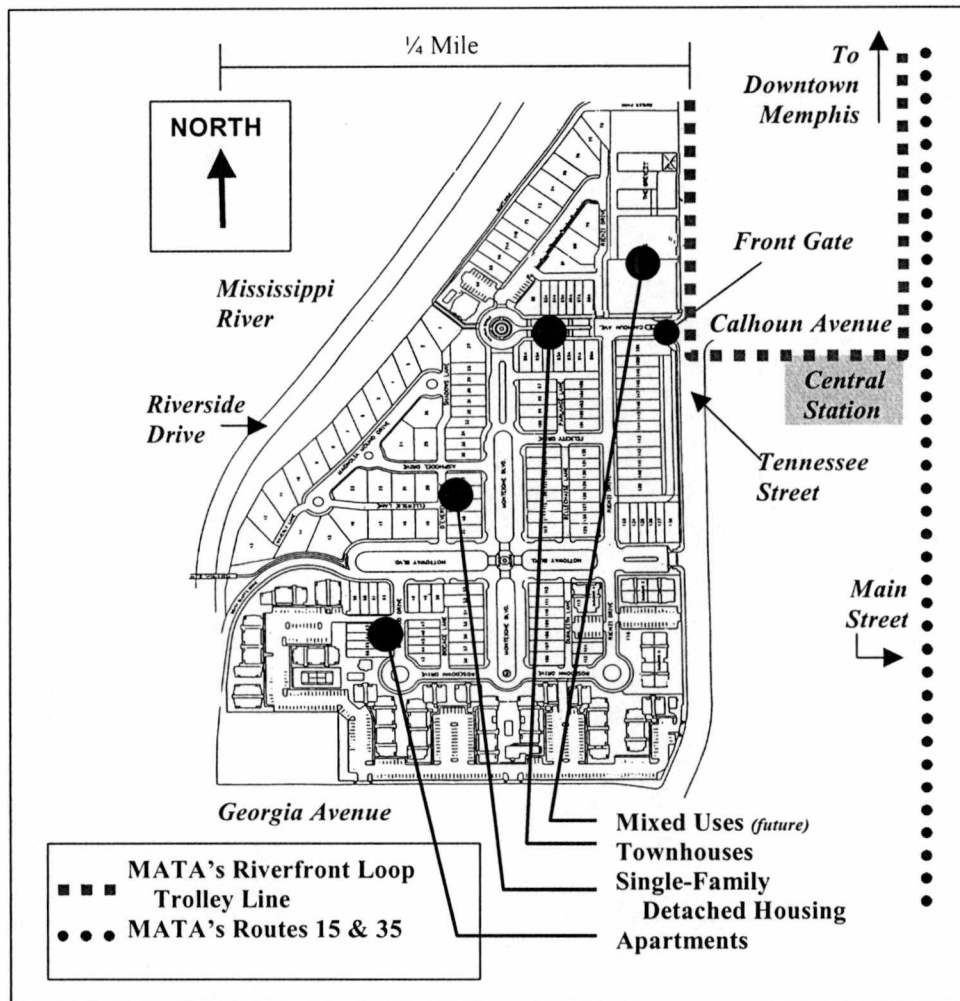


Figure 4-9. Map of South Bluffs

Source: Turley Realtors, Henry. *Map of South Bluffs*. Memphis: Henry Turley Realtors, 2001.

Four distinct sub-communities appear to exist – apartments at the south end of the site, mixed uses outside the entrance gate to the site, townhouses inside the entrance gate to the site, and detached single-family dwellings in the along the central spine and western edge of the site. The retail/office/residential loft space encircling the intersection of Tennessee Street and Calhoun Avenue is largely vacant, although realtor signs have recently been installed to advertise the space. Single-family dwellings with urban densities and setbacks flank the central north-south spine of the interior portion of the development. Some streets are textured with cobblestones, while most use concrete or asphalt. Figure 4-10 shows the entrance gate with the building set for mixed uses in the foreground and the townhouses in the far background to the left, and Figure 4-11 illustrates a typical boulevard right-of-way for South Bluffs. In spite of the fact that mixed-use



Figure 4-10. Entrance Gate, Near Mixed Uses and Townhouses, South Bluffs



Figure 4-11. Houses along Boulevard, South Bluffs

buildings are *outside* the gate to the development, they *are* considered to be a part of the South Bluffs project. Apartment residents at the southern end of the site have no more than a seven-block walk to reach the public transit system that meets South Bluffs at its front gate. Unlike the l'On community, South Bluffs appears to be planned for full gating to regulate automobile access at some future date, although sidewalk access to all portions of the development appear to remain open.

The mode of public transit that meets the front gate is the Riverfront Loop Trolley, the newest addition to the Main Street Trolley line that began service as a fully-integrated electric streetcar in the early 1990's. The Riverfront Loop connects with the Main Street Trolley and many of the fixed route buses at the

Memphis Area Transit Authority ("MATA") North End Transfer/Parking Facility in the northern portion of the central business district. It also connects with the Main Street Trolley at the site of the future Central Station (Amtrak/MATA). Once that station is operational within the 2001-2002 fiscal year, South Bluffs will be accessible to the most "intermodal" of facilities in the state of Tennessee, with inter-city rail, local fixed route transit, local light-rail transit, paratransit services, bicycle, and private automobile modes being accommodated. Figure 4-12 displays a view of the back portion of Central Station as it would be encountered by a resident from South Bluffs who might walk to connect with a chosen mode of transportation.

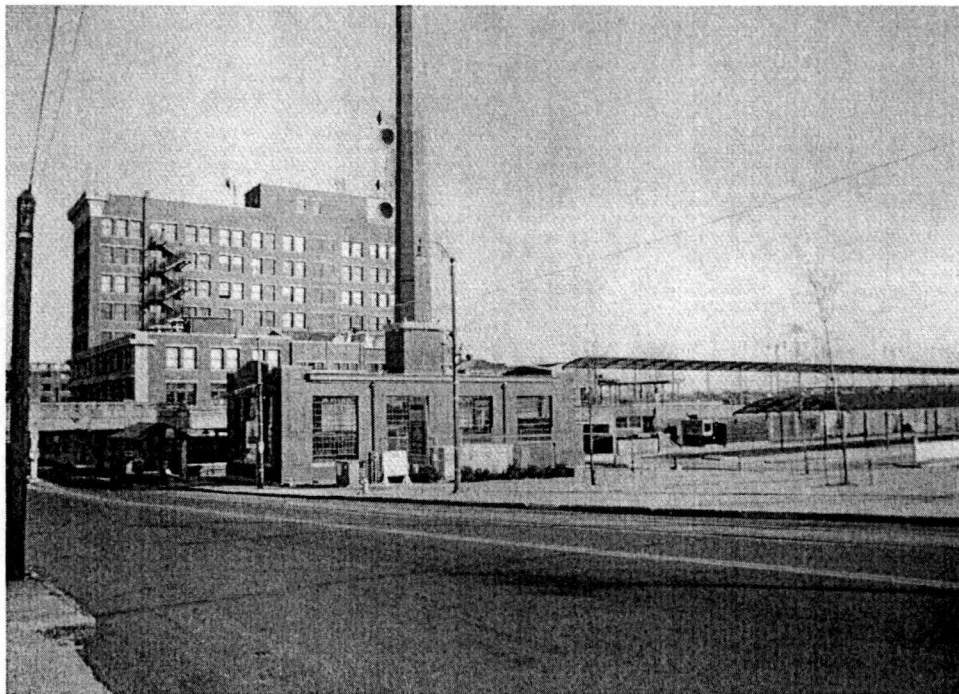


Figure 4-12. Central Station Facility, Two Blocks East of South Bluffs

Alongside the Riverfront Loop Trolley, MATA's Route 15 (Presidents Island) and Route 35 (Southgate/S Parkway) provide regular fixed route service to the intersection of Front Street and Calhoun Avenue, one block east of the front gate of South Bluffs. In the case of this development, normal transit standards are met with the majority of the site accessible to public transit by no more than a six block walk. Transit stops are clearly marked, and sidewalks are present in all expected locations of this urban setting.

The neighborhoods surrounding South Bluffs are truly transitional, not only in their land use makeup, but also in their condition. Memphis has seen a renaissance of sorts in its central business district, and recent developments have pushed that renewal further and further south on Main Street. With the rehabilitation of Central Station, the development is expected to continue. However, directly south of Central Station is the beginning of block after block of low-income, sub-standard housing. This could be observed as a detriment to continued development, unless extreme measures, such as urban renewal, are taken.

Upon the researcher's visit to the community on Tuesday, March 6, 2001, it was noted that street parking was encouraged by the design, but it was clearly not the only place for a resident to park his car. Garages were common for all single-family dwellings, and apartments were fitted with abundant surface parking.

Project Site Interview. The researcher met with Ms. Annette Sharp, sales manager for Henry Turley Realtors. Ms. Sharp had been involved in the site development of both South Bluffs and Harbor Town neo-traditional development sites. While both projects incorporate new urbanist ideals, Harbor Town was built out of the range of a reasonable connecting distance to the public transit system. Ms. Sharp reviewed and amended some of the facts submitted on the survey questionnaire on South Bluffs, including the following points:

- 95% of the site is developed, however the mixed-use buildings remain largely vacant.
- Uses on the site include 85% residential, 5% retail, 5% open space, and 5% office.
- 2% of off-street parking is devoted to surface parking, entirely in the apartment area of the site.
- Public transit (fixed route bus and electric trolley) meets the edge of the development.
- Transit service existed before the site was developed, and transit did not need to change their routing as a result of site development.
- Neither transit staff nor developers contacted one another during the planning stage for the site to discuss transit options.
- Public transit was viewed as important to the "new urbanist" development, although the project would have still been built in its current location even without transit service.
- Transit ridership from the development is below projection.

Ms. Sharp proceeded to answer the researcher's questions. Regarding the special features that make the development "new urbanist," she stated that South Bluffs was an urban infill site that was mostly self-contained within its walls, with the exception of the mixed-use buildings outside the gate. It was a

mixed-use development, allowing for not only single-family market-rate detached houses, townhouses, and loft-style condominiums, but also market-rate one-bedroom and two-bedroom apartment units. Building setbacks were shallow, sidewalks were present throughout the development, and lots were generally small throughout the main spines of the site. Furthermore, open space consisted mainly of wide boulevard street medians. Architecture was Southern vernacular, with no particular style being dominant.

No meetings with MATA were sought by the developers, Henry Turley Realtors, but visual observations and research were made to determine that the infrastructure of public transit would be present for many years with the trolley lines and the Central Station intermodal center.

Ms. Sharp stated that there was no substantial impact of the transit service on the people who live and/or work in the community on a daily basis, other than a downtown office worker who might take the trolley on a rare occasion. She went on to note that festivals and other special events would cause an occasional handful of residents to use the Riverfront Loop and Main Street Trolleys to Beale Street, Peabody Place, AutoZone Park, the riverfront, and the general central business district in lieu of driving or walking the distance. She believed that the majority of the residents in South Bluffs probably used their own automobile to commute to their jobs outside the downtown area, therefore not adding very many numbers to the local ridership.

The interview concluded with a quick tour of the development site and an observation of the small amount of traffic in the immediate vicinity of the

development, even at the evening rush hour. The intersection of Tennessee Street and Calhoun Avenue are two blocks removed from Main Street, where 5:00pm traffic was moderate at best.

Transit Agency Interview. The researcher met with fixed route planning staff members for MATA, and discussed the transit service in the vicinity of the South Bluffs community.

Planning staff stated that no interaction occurred between the South Bluffs developer and MATA before or during construction of the project, but in recent months the developer appeared to be interested in occasional dialog about transit service in the area, particularly with regard to Central Station operations.

Staff went on to say that ridership from the South Bluffs community was very low. Weekday peak hour boardings at the intersection of Tennessee and Calhoun appeared to be from residents living south and southeast of South Bluffs and not from South Bluffs itself. These were largely on the fixed route buses and not the trolley lines. Weekend boardings were very small from South Bluffs – usually less than five on non-special event weekends and sometimes higher during peak festival times downtown. These readings were entirely on the trolley lines and not the fixed-route buses. Ridership statistics were minimally impacted due to the presence of South Bluffs; they had not yet been a determining factor in determining service levels for transit for the area.

The only impacts that became apparent for the area, either positive or negative, was that MATA may consider establishing a trolley shelter somewhere

along Tennessee Street, north of Calhoun Avenue, for future transit usage. This positive site impact would likely be brought about by a redevelopment of the old manufacturing buildings that line that area, including the buildings that are being developed as a part of South Bluffs.

MATA staff continued by stating that any future new urbanist developments in the area would be met by great interest by MATA in discussing transit options.

Case Study 3 – Vermillion, Huntersville, North Carolina

The Vermillion community is located in the Charlotte bedroom community of Huntersville, North Carolina. Located twelve miles north of the Charlotte central business district, Huntersville is a quaint town with a population of 30,000 and is directly adjacent to I-77. The community of Vermillion is located on the east side of Huntersville, bordering the historic town site on one side and sparsely-developed land and farms on the other.

Existing Conditions. The 400-acre development contains three distinct sub-communities – a town center with future transit-oriented development sites, a main spine of urban-density townhomes and commercial space, and detached, single-family home sites surrounding the core. Also included in the development plan is a linear park linking the back portion of the development to the central portions of the project and on to the Huntersville central business district. Figure 4-13 is a map of the Vermillion community, and Figure 4-14 shows the mix of residential and commercial space around the town center.

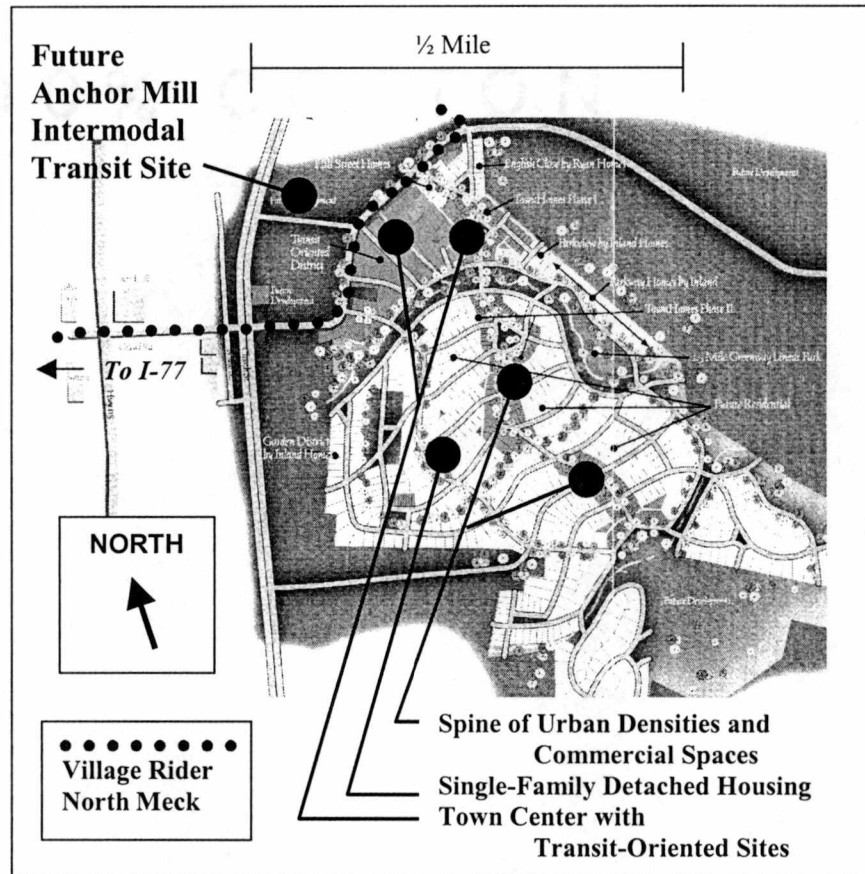


Figure 4-13. Map of Vermillion

Source: Bowman Development Group. "Vermillion." *Internet*: <http://www.vermillion-tnd.com/>. Huntersville, NC: Bowman Development Group, 2001.

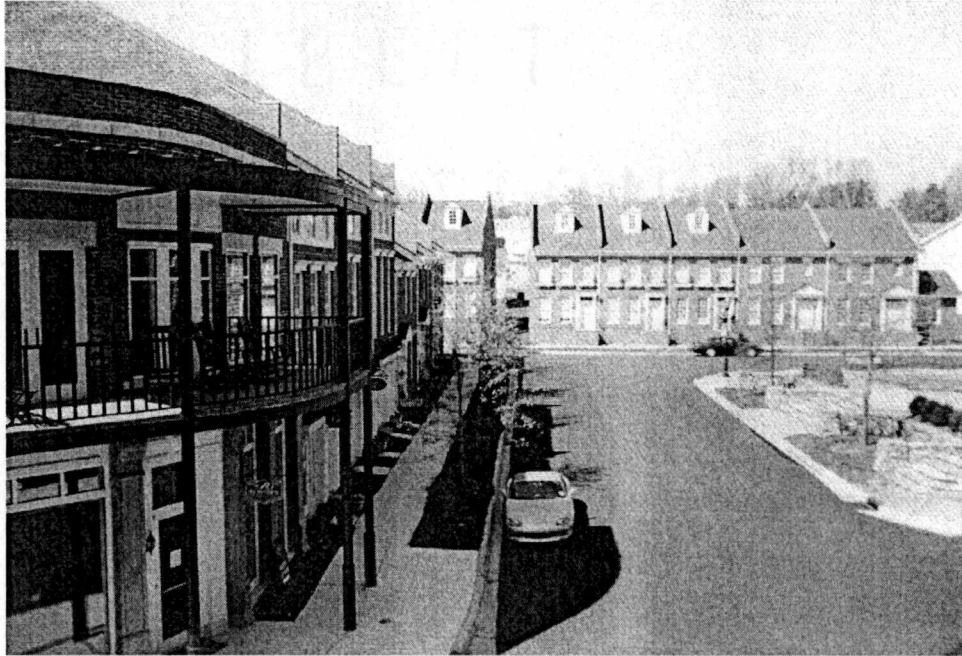


Figure 4-14. Town Center, Vermillion

Architecture is East Coast vernacular, and setbacks are typically shallow. Garages are almost never visible to the street, and alleys are present throughout the central half of the development. The mix of uses include 80% residential, 5% retail, 3% office, 2% library, 1% post office, and 9% parks/open space. The residential breakdown by units is 35% high density, 30% medium density, and 35% low density, with a building height of three stories throughout. The density of development around the town center is quite urban but begins to diminish within two blocks of the center to a density similar to an historic rail suburb. Further out, the densities diminish further to that similar to the original adjacent town site of Huntersville. Figure 4-15 displays this transition between lot densities near the Vermillion town center.



Figure 4-15. Density Transition, Vermillion

As mentioned, the town center is adjacent to a future transit-oriented development. The project's developer, Bowman Development Group, has plans for converting the 16-acre abandoned Anchor Mill site into an intermodal transit facility, complete with elements of new urbanism. The mill site is two blocks from the current entrance to the Vermillion community, and is poised to house the Huntersville commuter rail station once that mode goes online with the City of Charlotte sometime in the 2005-2006 fiscal year. With no more than a four-block walk from the Vermillion town center to the redeveloped Anchor Mill site, Vermillion is set to be a possible textbook Southern example of true new urbanism. Figure 4-16 demonstrates the setting of the abandoned Anchor Mill alongside the future commuter rail tracks.



Figure 4-16. Anchor Mill Site, near Vermillion

As of the researcher's visit to the community on Friday, March 9, 2001, 50% of the entire development had been built out. The areas not yet constructed included some the transit-oriented development, some of the medium-density residential areas, and some of the low-density residential areas at the back of the site.

Current public transit service for the area is provided by Charlotte Area Transit System ("CATS"). Two daily fixed routes, Route 33 (North Mecklenburg Connector) and Route 77X (North Mecklenburg Express), serve the western part of Huntersville and connect into central Charlotte. A third route, the Village Rider – North Meck, serves the Huntersville area exclusively, including Vermillion on the east side of town, and connecting with Routes 33 and 77X on the west side.

The long-range plan for transit within the Vermillion community is the establishment of a shuttle that would serve not only the town center, but also the back portions of the site, moving people to the future intermodal transit center and other points within Huntersville. That plan is not expected to formalize until the 2002-2003 fiscal year.

In compliance with general public transit standards, 50% of residential units and 75% of commercial units within the Vermillion community are within a six-block walk to the future intermodal development at Anchor Mill. Evening peak-hour observations in the vicinity showed six passengers using the local Village Rider – North Meck line to connect with Vermillion.

Project Site Interview. The researcher interviewed Mr. Nate Bowman, senior partner with Bowman Development Group. Mr. Bowman reviewed some of the facts he submitted on the survey questionnaire, including the following points:

- 50% of the site is developed, including the town center.
- Mixed uses on the site include 80% residential, 5% retail, 3% office, 2% library, 1% post office, and 9% parks/open space.
- 5% of off-street parking is devoted to surface parking.
- Public transit (fixed route bus) meets the edge of the development.
- Local transit service, provided by CATS, includes the Village Rider – North Meck line that shuttles commuters around Huntersville and to other routes connecting into Charlotte.
- Developers and transit staff met during the planning stage to discuss transit options.

- Public transit service was viewed as an operational component of the development. Without public transit service in the vicinity, the development would not have been built, or would have been built at another location that had better transit service.
- Transit ridership exceeds projections.
- The project is described as "new urbanism."

Mr. Bowman proceeded to answer the researcher's questions. Regarding the special features that make the development "new urbanist," he stated that the architectural/planning/design firm hired to design Vermillion was a big proponent of new urbanism. Duany Plater – Zyberk and Company ("DPZ") of Miami, Florida, advocated not only that Vermillion follow the general guidelines of new urbanism, but also that they adhere to the Thirteen Points of Traditional Neighborhood Development as defined by DPZ (Vermillion, 2000). They are as follows:

1. The neighborhood has a discernible center. This is often a square or green, and sometimes a busy or memorable street intersection. A transit stop would be located at this center.
2. Most of the dwellings are within a five-minute walk of the center. This distance averages one-quarter of a mile (1320 feet).
3. There are a variety of dwelling types in the neighborhood. These usually take the form of houses, row houses, and apartments, such that younger and older people, singles and families, and those of various means may find places to live.
4. There are shops and offices at the edge of the neighborhood. The shops should be sufficiently varied to supply the weekly needs of a household. A convenience store is the most important among them.
5. A small ancillary building is permitted within the backyard of each house. It may be used as one rental unit or as a place to work.

6. There is an elementary school close enough so that most children can walk from their dwelling. This distance should not be more than one mile.
7. There are small playgrounds quite near every dwelling. This distance should not be more than one-eighth of a mile.
8. The streets within the neighborhood are a connected network. This provides a variety of itineraries and disperses traffic congestion.
9. The streets are relatively narrow and shaded by rows of trees. This slows down the traffic, creating an environment safe for the pedestrian and the bicyclist.
10. Buildings at the neighborhood center are placed close to the street. This creates a strong sense of place.
11. Parking lots and garage doors rarely front the streets. Parking is relegated to the rear of buildings, usually accessed by alleys.
12. Certain prominent sites are reserved for civic buildings. Placed for meeting, education, religion, or culture are ideally located at the termination of street vistas or at the neighborhood center.
13. The neighborhood is organized to be self-governing. A formal association debates and decides on matters of maintenance, security, and physical change.

Mr. Bowman went on to say that DPZ established a design office at Vermillion that will continue to be there throughout the project development. He also stated that interaction between the Vermillion project team and CATS staff occurred well before the final development plans were drawn. There was interest on the part of both entities to make the development transit-friendly. He perceived the impact of transit service upon the people at Vermillion to be important, especially when the intermodal station is developed at Anchor Mill. There had been much discussion among Huntersville town leaders that the commuter rail service would be greatly embraced by the citizens of Huntersville,

including Vermillion, who work in Charlotte. Furthermore, Mr. Bowman expected development adjacent to Anchor Mill to continue.

He stated that the impact of Vermillion upon the transit service could also be noteworthy. The density of population in Vermillion could only help ridership statistics in the area, particularly when the transit service is upgraded.

Mr. Bowman perceived no negative impacts between the development and the transit service, and he perceived several *positive* impacts, including the following:

- Future site amenities and better pedestrian connections,
- More frequent interaction between residents of Vermillion and transit personnel,
- Better transit service for people who live and work in Vermillion, and
- Increased land values.

He further speculated that other area new urbanist developments would follow the lead set by Vermillion.

Transit Agency Interview. The researcher spoke with CATS planning staff members who agreed with Mr. Bowman that interaction between the development team and CATS transit staff occurred during the planning stage of the project. Both parties were very interested in providing some level of transit service to the new community, whether immediately or in the future.

CATS planning staff proceeded to state that ridership figures on the Village Rider – North Meck had not been calculated for the Vermillion community,

but they were aware that a handful of residents from the development *did* use the service on a daily basis. Staff also speculated that the future commuter rail service would draw more transit users from the community.

The CATS planners said that the only transit-related impacts with regard to Vermillion were *positive* considerations for future planning efforts. These could include permanent transit amenities, such as shelters and benches, or they could include a manned CATS office at the future intermodal facility at Anchor Mill.

Staff concluded the interview by stating that new urbanism had definitely caught the attention of CATS, and future developments would be pursued early in the planning stage by CATS staff.

Case Study 4 – King Farm, Rockville, Maryland

The King Farm community is located in Rockville, Maryland, eight miles north of the I-495 beltway encircling the Washington, D.C., metropolitan area. It is bordered by I-270 on the southwest, Shady Grove Road on the northwest, and state highway (Frederick Road) on the northeast, and Gude Drive West and Redland Boulevard on the southeast.

Existing Conditions. The 430-acre development is named for the family that once owned the land, and it is situated between an existing office park on the southeast and highway strip commercial land uses on the northern edges of the site. Figure 4-17 is a map of the King Farm community.

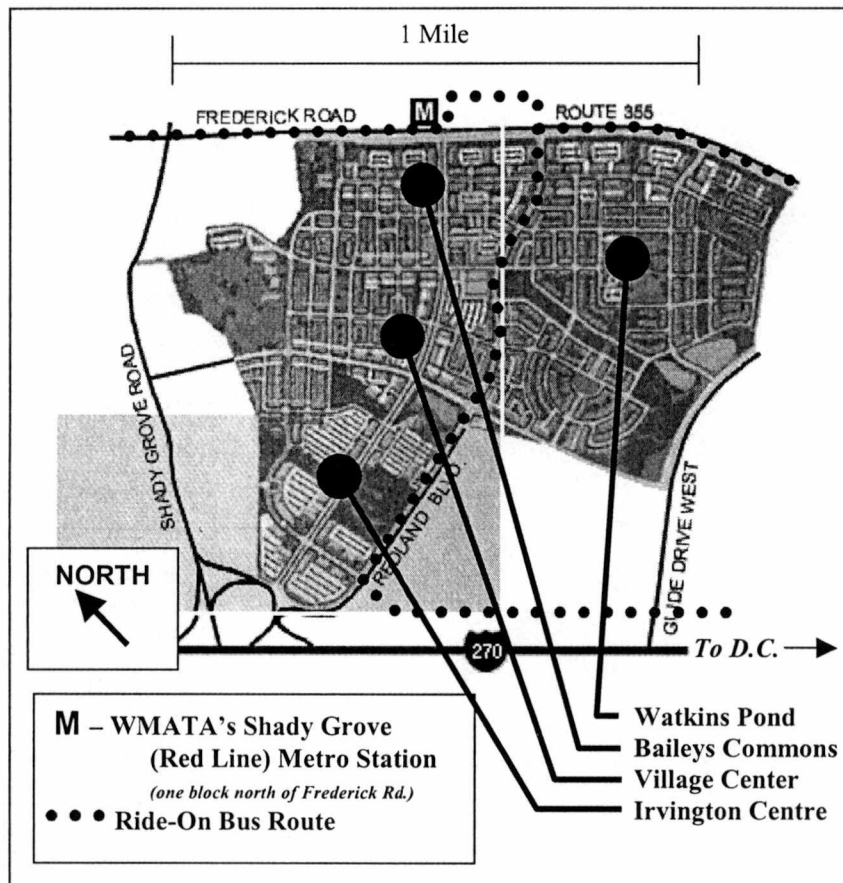


Figure 4-17. Map of King Farm

Source: King Farm Associates, LLC. Internet: <http://www.kingfarm.com/>. Tysons Corner, VA: King Farm Associates, LLC, 2001.

The immediate Rockville area is quite urban. The project is planned for four distinct sub-communities – Village Center, Irvington Centre, Watkins Pond, and Bailey's Commons – each with its distinct set of development guidelines, architectural priorities, and mix of densities. The sub-community of Village Center contains various shopping conveniences, retail and commercial spaces, and high-density residential units. The sub-community of Irvington Centre includes a major office and employment center. The sub-community of Watkins Pond contains single-family townhouses and detached homes, also includes multi-family units of various configurations. The sub-community of Bailey's Commons is comprised of multi-family apartments and condominiums with a scattering of senior living facilities. Figure 4-18 displays a row of commercial/residential buildings in the Village Center.



Figure 4-18. Village Center, King Farm

Surrounding the town center are multiple blocks of high-density and medium-density dwelling units of traditional architectural styles and urban setback and density. Figure 4-19 shows a typical streetscape along Redland Boulevard, the main arterial spine of the development.

Within three blocks to the northwest and southeast of the Village Center, the development's building densities are less, housing units are larger, and architectural styles are more varied. In the sub-community of Watkins Pond, residential units are no more than a two-block walk to an open space feature, such as a pond, an interior greenway, or a community park. In the sub-community of Baileys Commons, densities are greater across the area, and distance is within a three-block walk to the Shady Grove Red Line rail station for the Washington Metropolitan Area Transit Authority ("WMATA").



Figure 4-19. Residential Units along Redland Boulevard, King Farm

As of the researcher's visit to the community on Monday, Monday, March 12, 2001, 50% of the entire development had been built out. The areas not yet constructed included about half of each of the three residential sub-communities and most of the office park. It was noted that all single-family dwelling units had enclosed, and most of the multi-family units were accessible to either common, multi-level parking facilities or abundant street parking, the latter of which also encouraged visitor use.



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A clear majority of the multi-family units within the project site are located along the northeastern edge, within Baileys Commons and Watkins Pond, and all are within a one- to five-block walk of heavy-rail and local fixed route transit service provided by WMATA and Montgomery County's "Ride-On" services. Figure 4-21 displays a Ride-On transit stop on Redland Boulevard, one block southwest of Frederick Road.

All areas of King Farm are interconnected by sidewalks and greenway paths, making accessibility throughout the development somewhat easy. The presence of Redland Boulevard creates a major barrier, in that a great deal of traffic exiting the interstate highway can easily use Redland to connect with other employment areas of Rockville. Once the Irvington Centre office park is completed and once the Village Center is at full capacity, traffic volumes will most

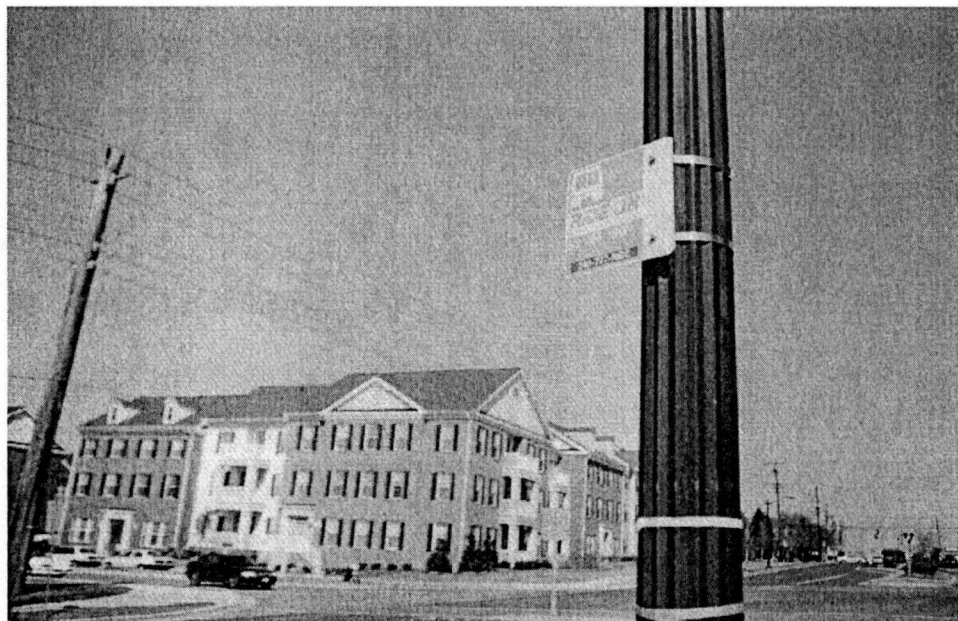


Figure 4-21. Ride-On Bus Stop, King Farm

likely increase, creating hazards for residents wishing to cross that four-lane, divided roadway.

Figure 4-22 shows WMATA's Shady Grove Red Line rail station, one block northeast of King Farm, connecting into the District of Columbia. Figure 4-23 displays the main intersection used to cross Frederick Road in gaining access to Shady Grove Station. With rapid transit nearby, this researcher was somewhat surprised by the lack of pedestrian traffic connecting between the station and the project site. Even at the evening rush hour, no more than seven individuals were observed making a trek from the station to the general vicinity of King Farm.

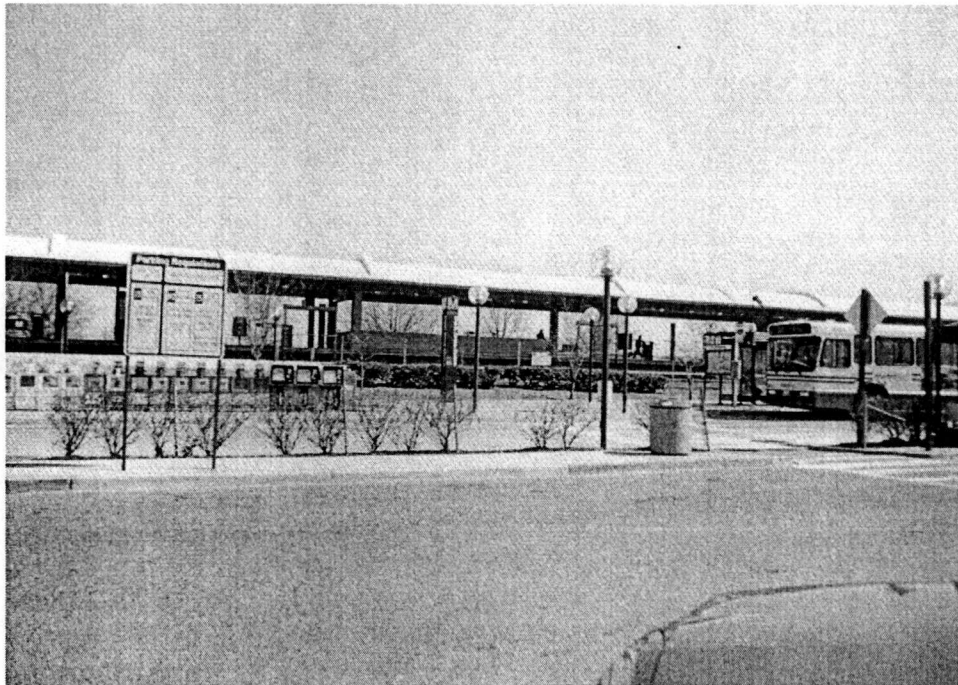


Figure 4-22. Shady Grove Station, near King Farm

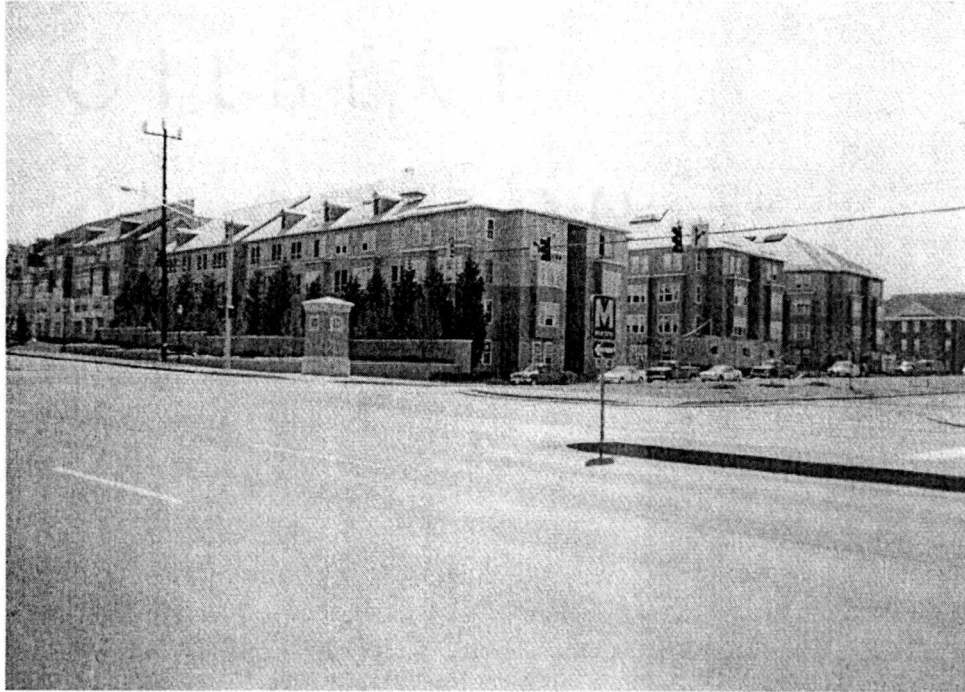


Figure 4-23. Frederick Road Crossing to Shady Grove Station, King Farm

Project Site Interview. The researcher interviewed Mr. Tim McDonald, director of commercial development for The Penrose Group, developers of the King Farm community. Mr. McDonald reviewed some of the facts he submitted on the survey questionnaire, including the following points:

- 50% of the project site is developed.
- Mixed uses on the site include 55% residential, 30% office, 10% retail, and 5% open space.
- 2% of off-street parking is devoted to surface parking, and 2% of the overall area is devoted to multi-level parking facilities.
- Fixed route bus service travels through the development, and heavy rail rapid transit is located within one block of the site.

- Local transit service routing was extended to better serve the project area, and developers met with transit officials during the project construction to discuss transit matters.
- Public transit was viewed as important to the development, although the project would have still been built in its current location even without transit service.
- Transit ridership exceeds projections.
- This project is described as "new urbanism."

Mr. McDonald proceeded to answer the researcher's questions. Regarding the special features that make the development "new urbanist," he stated that it was mixed-use in its utility, traditional in its architecture, and urban in its scale. He went on to note that King Farm was modeled somewhat on the success of the Kentlands development in Gaithersburg, Maryland.

There was apparently no real contact between the development team and the local transit authorities before ground was broken. Transit considerations were discussed among the project team, but not formalized until construction was about 25% complete. Mr. McDonald perceived the impact of transit on the community to be good for providing alternative modes of transportation, especially when the remainder of residential and office spaces are made available. The impact of the development on the transit service was not thought to be very important to the WMATA rail line, but it would likely be noticeable to the Ride-On service running through the site.

The only additional physical impact Mr. McDonald mentioned were the positive impacts of future site amenities, such as benches and shelters, and increased interaction with the local transit authorities.

Transit Agency Interview. The researcher spoke with personnel at Montgomery County's Ride-On office. Staff involved in planning efforts gave information to help with the study, including the agreement that no communication between the development team and the transit staff occurred until *after* construction was well under way. Personnel stated that no major ridership statistics had been observed along the portions of the route that bisected the King Farm site. They assumed the population residing there all had their own automobiles. Even with the apartment population, the residents were fairly young and independent with little or no need for public transportation. The fact that WMATA's Shady Grove line was so close probably aided any serious transportation needs for the vicinity.

The Ride-On personnel observed no impacts, positive or negative, with regard to the interaction between the development site and the local transit service.

The researcher also spoke with WMATA planning staff that indicated no communication had ever been made between WMATA and the King Farm development. Staff asserted that any ridership increases at the Shady Grove Station could be attributed to the fact that Shady Grove is the last station on the Red Line, and observed increases are credited to the fact of *general* population growth in that suburban area and not to any one development, such as King Farm.

Data Evaluation

The four case studies can be compared in their relationships to new urbanism; they can be contrasted in their relative project size, their "urban" location, and priorities of their development organization.

New urbanism seemed to pervade the ideals of each of the four development teams, but the aspect of transit connections appeared to be an operational consideration in the development stage of only the Vermillion community and, to a lesser extent, the l'On community. King Farm and South Bluffs showed very little attempt at communications with their local transit agencies. In fact, interaction between the two entities did not occur until each of the two communities were well into the construction phase of their development. This is not to say that transit was not an original consideration for King Farm and South Bluffs; the visual observations of transit services would have been quite obvious. However, l'On attempted communication with their transit provider, and Vermillion was very active in interacting with their appropriate transit office.

With regard to project size, the four sites vary from the relatively small 150 acres of South Bluffs in Memphis to the somewhat large 430-acre King Farm development in Rockville. The relative "urban" nature of each development ranges from the small suburban area of l'On to the central-city infill of South Bluffs and the large suburban area of King Farm. Ironically, it is the small, bedroom community of a large city that exhibits the most comprehensive understanding of new urbanism, as we see in Vermillion.

While urban settings and development size may seem somewhat arbitrary, one important aspect of these four case studies that comes to light is the priorities aspect of the development organization for each project team. The organization of these teams is as follows:

- I'On, led by The I'On Company (real estate developer) and designed by Dover – Kohl and Partners (town planners) with assistance from Duany Plater – Zyberk and Company (architects, designers and town planners).
- South Bluffs, led by Henry Turley (realtors) and designed by various local architectural firms
- Vermillion, led by Bowman Development Group (real estate developer) and designed by Duany Plater – Zyberk and Company (architects, designers, and town planners)
- King Farm, led by The Penrose Group (real estate developer) and designed by various local architectural firms.

Clearly, a common denominator of the transit-successful Vermillion community and the transit-hopeful I'On community is the Duany Plater – Zyberk and Company firm. As mentioned in the Thirteen Points of Traditional Neighborhood Development, DPZ has a commitment to public transit considerations. Dover – Kohl and Partners, senior design firm for I'On, has a vast history in traditional town planning, but transit considerations are not a fundamental part of every new urbanist project that Dover – Kohl plans, according to research. As junior design partner in the I'On community, DPZ was not able to include its Thirteen Points of Traditional Neighborhood Development as comprehensively as with the Vermillion community.

In research of projects designed solely by DPZ or with DPZ as the senior design firm, most were sites located in regions that have access to public transit service. All sites accessible to public transit are connected substantially to the local transit system (Duany – Plater Zyberk and Company, 2001).

Other notable aspects of comparison and contrast between the four case studies include relationships to data analysis with the other forty (40) survey questionnaire responses. These aspects include the following:

- Among all questionnaire responses, four (4) developments describing themselves as “new urbanist” consist of residential-only uses (no mixed use), in direct opposition to new urbanist ideals. All of the four case studies both describe themselves as new urbanist and do include a mix of uses.
- Among all questionnaire responses, four (4) of the six (6) developments *not* located in a city or town with public transit service describe their development as “new urbanist,” in contrast to tenets of new urbanism. All of the four case studies are located in cities or towns that have public transit service.
- Among all questionnaire responses giving data on new urbanist project sites accessible to transit, only 31.6% of developments experienced interaction between project team and local transit staff *before* construction on the site began. Among the four case studies, only 25% of developments – the Vermillion site – experienced that same type of interaction.
- Among all questionnaire responses giving data on new urbanist project sites accessible to transit, 55% of the new urbanist project developers stated that construction of their project was not based on whether or not transit was present in the vicinity, and only 15.8% of respondents stated that public transit was an operational component of the planning process. Among the four case studies, only 25% - the Vermillion site – stated that public transit was an operational component of the planning process.

In relating the case studies to the six hypothesis tests of the previous chapter, the following relationships can be observed:

- Among all questionnaire responses giving data on new urbanist project sites accessible to transit, a relationship between observed transit usage and proximity of transit to the development was apparent. Among the four case studies, this relationship was not observed.
- Among all questionnaire responses giving data on new urbanist project sites accessible to transit, a relationship between observed transit usage and the mode of transit available was apparent. Among the four case studies, this relationship was not necessarily observed.
- Among all questionnaire responses giving data on new urbanist project sites accessible to transit, a relationship between transit and developer interaction and observed transit usage was apparent. Among the four case studies, this relationship remained intact.
- Among all questionnaire responses giving data on new urbanist project sites accessible to transit, an observed relationship between surface parking availability and transit-developer interaction was observed to *not* exist. Among the four case studies, this lack of relationship remained intact.
- Among all questionnaire responses giving data on new urbanist project sites accessible to transit, a relationship between transit-developer interaction and transit's impact on the design of the development was observed to *not* exist. However, among the case studies, this relationship *did* exist.
- Among all questionnaire responses giving data on new urbanist project sites accessible to transit, a relationship between proximity of transit to the development and transit's impact on the design of the development was observed to *not* exist. However, among the case studies, this relationship *did* exist.

The following chapter will conclude the research with a summary of conclusions and a statement on implications for future new urbanist growth.

CHAPTER 5

CONCLUSION

New urbanism could be considered the greatest innovation in the fields of urban planning, architecture, and design in the last generation. Attractive to many is the concept of adapting a new environment to any type of developable or re-developable piece of land, while using traditional styles, human scales, and multi-modal transportation systems to define the look and function of the site. This study now concludes with a summarization of findings and their implications on future new urbanist development.

Summary of Conclusions

For the purpose of this research, the attempt is to address the primary research question, "Is public transit an operational part of new urbanist development in the United States?" Upon commencement of the study, the view of this researcher held that public transit is *not* an operational component of new urbanism. Conclusions drawn from survey questionnaire and case study data analyses shed light on that primary research question.

Data Analysis Conclusions

Data analysis made it evident that most developers were fairly educated on what new urbanism entails. Leaving public transit out of the mix, case studies and questionnaires gave indication that such things as mixed uses, human

scales, and traditional/vernacular architectural forms should be prominent themes. In perusal of internet sites of design firms involved in new urbanism, these themes were typically clear and concise. This researcher has no need to question the fact that, over the past ten years, the concepts of new urbanism have invaded the planning/design/architectural realms with intensity and increasing clarity.

The four questionnaire responses that reveal residential-only land uses in "new urbanist" communities are a mere 9% of the total applicable sampling frame. Likewise, the four other responses that not only describe their community as new urbanist, but also claim no public transit service within their region account for 9.5% of the total applicable sampling frame. The significance of these factors is low, and their impact on the study appears to be negligible.

The fact that sampling reveals that only 31.6% of applicable questionnaire responses and only 25% of case study participants exhibited any form of communication with their local transit provider *before* construction began on the development is somewhat disturbing. The new urbanist industry's organizational leader, The Congress for the New Urbanism, heralds public transit incorporation as one of the leading tools for a fully-integrated neighborhood, mentioning it twice in its four major principles of new urbanism (CNU, 1999). Yet, such a small percentage of new urbanist developers apparently take the time to form a point of contact with public transit providers that the component appears to take a back seat to many other factors in the planning stage.

This researcher realizes that many project team observations can be made regarding the presence of transit near a project site, but little compares to *meeting* with transit planners to understand present and future considerations for transit service provision in a planning region.

A prime indicator in the study of the importance of public transit in new urbanism resides with the fact that 55% of developers admit that the presence of public transit played no role in the location analysis of their new urbanist site. Furthermore, only 15.8% of applicable questionnaire respondents and only one of the four case study participants claim the antithesis of this study – that public transit was an operational component of the planning process. This appears to be a decisive point in supporting the primary research question of the study.

A positive relationship is observed within both case studies and questionnaire responses between the variables of pre-construction transit-developer interaction and the levels of transit utilization observed by the developer. In other words, there seems to be a relationship stating that a high level of interaction between the developer and the transit staff *before* the project construction commences is met with a higher level of transit usage *after* the project is completed. This was the only hypothesis tested with results holding true between questionnaire responses and case study research.

Other relationships may be important as well. Despite the fact that the majority of case study observations did not necessarily support questionnaire data, one hypothesis test finds that levels of transit utilization by developer observation is positively related with level of proximity of the transit amenity. This

means that the closer a public transit service is to a new urbanist community, the higher the ridership from that community will be. This is observed to be not true in the communities of South Bluffs and King Farm, where transit rail lines exist one mere block from each development, but daily ridership is trivial. However, this observation *is* true in Vermillion where transit meets the edge of the development, and ridership is somewhat large for the level of service provided.

Comparative to that is the hypothesis test that revealed a relationship between level of mode of transit and observed transit usage. Questionnaire responses show that higher levels of modes of transit, such as heavy rail or light rail, are met with higher levels of ridership. Once again, this is observed to not be necessarily true for the case studies. King Farm and South Bluffs are located near high levels of modes of transit – heavy rail and trolley line, respectively. Neither community boasts high ridership by comparison. Yet, the mere Village Rider – North Meck line, a general-public demand-response service provides a noticeable number of trips for a community the size of Vermillion.

Not to be undermined by sheer lack of numbers when compared to the questionnaire responses, the case studies could provide *some* understanding of the public transit – new urbanist relationship. While questionnaire responses do not support the hypothesis that pre-construction developer-transit interaction is related to the impact of transit on the site selection process for the development, the case studies reveal just that. The likelihood of developers and transit officials discussing transit options during the planning stage of the new urbanist project is

met with the likelihood that public transit has a noticeable impact on the site analysis of the project.

Furthermore, despite the fact that questionnaire responses do not support the hypothesis that availability of surface parking within the development is related to the level of transit-developer interaction, the case studies do show just that. Upon further consideration, this researcher rescinds his earlier assertion that these variables are inherently related. With such small percentages of total land areas represented within the case studies (0% to 5%), the amounts of surface parking appear to be irrelevant to the thesis.

Research Questions Conclusion

To return this study to its original posture of thesis question and supporting inquiry, this section addresses the research questions found in the first chapter.

Secondary Question 1. Does the presence of any level of public transit service impact the location analysis state of new urbanist development planning? To address this question, we refer to the questionnaire submission stating that 55% of the new urbanist project developers stated that construction of their project was not based on whether or not transit was present in the vicinity, and only 15.8% of respondents stated that public transit was an operational component of the planning process.

Secondary Question 2. If the presence of public transit service is key to the location analysis state of new urbanist development planning, does (1) level

of transit service, (2) amount or type of transit amenities (shelters, benches, bike racks, etc.), or (3) physical site integration between the development and the transit line play a decisive factor in that analysis? To answer this question, we refer to the case study analyses to observe that (1) level of transit service is *not* a decisive factor in location analysis, as shown in the cases of l'On, King Farm, and South Bluffs; (2) type of transit amenities appears to play *no* role, since amenities were largely absent from the landscape upon initial site selection and even to the present; and (3) physical site integration between the development and the transit line *does* tend to be accommodated and promoted within each of the four sites, whether or not those sites sought the best transit options during the planning stage for the development.

Secondary Question 3. Is public transit viewed as the best alternate mode of transportation to the private automobile in new urbanist development in the United States? To address this consideration, we refer to question 8 on the survey questionnaire. By the sheer abundance of reserved parking available at a clear majority of the new urbanist communities responding to that question, the private automobile is definitely the first transportation priority for developers. Public transportation would have to be the second transportation priority, due to the observation that 77% of these developments are within six blocks of public transportation service, and 97% of applicable responses indicated that public transit was at least a beneficial service to have adjacent to the development as a transportation alternative.

Secondary Question 4. Is public transit availability viewed as a factor in helping to promote land values in new urbanist development? Upon retrospect, the researcher rescinds his earlier assertion that land value promotion is inherently related to public transit availability. While research materials indicate this to be true in certain large markets with substantial transit infrastructures, the relationship could not be studied across the board of all size of markets, all types of transit, and among all political systems related to public transit without compiling enough material to warrant a separate thesis study.

Secondary Question 5. Are particular methods of public transit service (fixed route bus, paratransit bus, heavy rail, light rail, commuter rail, trolley, or other alternative neighborhood shuttle) viewed as either favorable or unfavorable to new urbanist development in the U.S.? To answer this question, we refer to the case studies, where the greatest attention to transit considerations was given at Vermillion, complete with a general-public demand-response transit system. The least amount of consideration for transit was given at South Bluffs, where a electric trolley system is in place. King Farm's minor consideration for transit is met with heavy rail in the vicinity, and the hopefulness of l'On to have transit in their community sees disappointment with the removal of a regular fixed route line. Favorable vs. unfavorable considerations for transit among new urbanist communities are met with an assortment of transit modes, all with no clear direction that one variable has any bearing on the other variable.

Secondary Question 6. How is the location analysis of "transit villages", in particular, developed around the factors of (1) level of transit service, (2) amount

or type of transit amenities (shelters, benches, bike racks, etc.), and (3) physical site integration between the development and the transit line? Unfortunately, among the half-dozen questionnaires sent to new urbanist communities that also describe themselves as "transit villages," none were returned to the researcher. Public transit appears to be inherent within the parameters of a transit village, and research shows that high levels of transit service, large amounts of transit amenities, and good physical site integration between the development and the transit line are all key considerations for transit village developers.

Secondary Question 7. If public transit is not a key element in the development of new urbanist developments in the United States, then what are the key factors that are common and necessary in site analysis and development of such projects? Market forces appear to be one of the two key elements that play a role in the development of new urbanist communities *ahead* of the element of public transit. Developers desire to make money through their project, as investors want to make a profit. The other key element is innovative urban design. New urbanism is different than the conventional subdivision. It uses traditional and sometimes historic architectural styles alongside urban densities and mixed uses to make a community that is otherwise unfamiliar to many suburban Americans. Integration to the overall urban fabric, which includes public transit, is secondary. This can be seen by the gated and walled nature of many new urbanist communities and by the fact that more than half (63.6%) of questionnaire responses indicated that, despite the number of units that are sold in the development, it is still a developer's project whereby common facilities,

leased units, alleys, and many streets (41.5%) will remain under the control of the developer at the completion of the project. This, many would say, is also a distinguishing characteristic of new urbanism, as opposed to “real” urbanism.

Additional considerations. An observation was detailed in the previous chapter regarding design firms. This researcher maintains that the priorities of the planning/design/architectural firm on a new urbanist project are asserted on the practices of the developer. It is no surprise that the transit-friendly planning practices observed at Vermillion are in sync with the data collected from other new urbanist projects designed by Duany Plater – Zyberk and Company. This is opposed to the practice of a real estate development firm giving design privileges over solely to local architectural firms that have little experience in integrated new urbanist projects across the country, as is the case at South Bluffs. It is clear that the design firm is influential in the new urbanist project’s relationship with the public transit service.

Implications for Future New Urbanist Development

Is public transit an operational part of new urbanist development in the United States? This researcher must contend that the answer to this primary research question is a *conditional* “no.” The assertion can no longer be made for new urbanism across the board. The research has shown that new urbanism is planned and developed both with and without operational considerations for public transit.

The researcher's conclusion now states that public transit is an operational component of new urbanist design primarily when the design firm responsible for the master plan considers public transit to be an operational part of the design and further asserts its influence to include it as such in development projects.

As new urbanism continues to innovatively design new communities for the American landscape, more integrated systems will likely develop. As the United States becomes increasingly "urban" in its demographic makeup, the need and push for better public transit alternatives will likely ensue. As these two structures move into the future, they will eventually meet and interact without the needed influence of the design firm.

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