

Informing the Debate

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**Case Studies, Public
Opinions, and Evidence-
based Policy
Suggestions**



Authors
Suk-Kyung Kim,
Jaechoon Lee
and
Randy A. Bell



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Institute for Public Policy and Social Research at Michigan State University

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New Urbanism in Michigan: Case Studies, Public Opinions, and Evidence-based Policy Suggestions

Authors

Suk-Kyung Kim, Ph.D.
Assistant Professor
School of Planning, Design, & Construction
Michigan State University

Jaechoon Lee, MUP
Ph.D. candidate, Transportation Specialist
City and Regional Planning
Ohio State University

Randy A. Bell
County Extension Director
Ingham County MSU Extension

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Lauren Meunier
Institute for Public Policy and Social Research
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Executive Summary

New urbanism, though it attracts numerous a lot of proponents and opponents, suggests important design and planning principles for revitalizing cities in Michigan. Core principles of new urbanism this study adopted were walkable environments, public transportation services, downtown revitalization, open space and sports facility design, wildlife and natural environment preservation, energy efficient and affordable housing design, child-friendly residential environment design, mixed-use developments, and pedestrian-friendly building and façade design (Refer to the Glossary for these terms).

The major purpose of this study was to explore how these new urbanism principles can be applied in designing new communities and regenerating old communities in the State of Michigan. To achieve this purpose, the study explored cases of community design and related programs, investigated the opinions of Michigan residents, business owners, and urban planners on the core new urbanism principles, and suggested policy implications for community design and planning.

Important policy directions were pulled from the research findings of the State of the State Survey (SOSS) with involved 1,001 Michigan residents, interviews with ten business owners in the Lansing, East Lansing, and Mason areas, and a survey with seven teen urban planners currently holding a position in one of the jurisdictions in the State of Michigan. Some of the key policy recommendations are as follows:

1. Creating walkable environments is strongly supported by Michigan residents, business owners, and urban planners. Policymakers need to increase their efforts for creating pedestrian friendly walkable environments with road connectivity, safety along streets, and affluent amenities such as providing trees and gardens around pedestrians.
2. Improving public transportation services through improving the bus service system is strongly suggested by residents and urban planners. Providing more frequent bus service, more bus routes, offering appropriate cost for using buses, and improving the quality of bus stop facilities are suggested. Systematic management of transit through arranging the appropriate number and size of buses based on user surveys is also suggested. The ultimate strategy for motivating walkers, bicyclists, transit users will be the prevention of further low-density developments in urbanized areas.
3. Revitalization of old downtown areas could bring more dynamic economic and cultural activities to Michigan cities, but obsolete downtown revitalization should also be planned alongside preserving historic and cultural contexts of the cities. Downtown revitalization cannot be successful without preparing rigorous market research and understanding a target population's social, economic, and cultural characteristics.
4. This study suggests mixed-use building development and mixed-use communities in Michigan. Mixed-use developments will create walkable environments, more open spaces, and more diverse social and economic activities for residents. New mixed-use community developments should not be isolated from existing urban communities. We thus suggest cluster development of new urbanist communities being connected to existing inner cities and providing more diverse types of housing, educational, commercial, and retail facilities.
5. Pedestrian-friendly façades and building design that attract pedestrians to their stores or buildings contribute toward the cities' economic activities. Policymakers need to consider establishing some types of loans or grants for helping small business owners upgrade façades, store interiors, or building exteriors.

6. Preserving wildlife and the natural environment is a more critical issue than having more parks or sports facilities for Michigan residents and urban planners. Collaboration is necessary between policymakers and Departments of Parks and Recreation in townships, cities, and the state, to preserve existing wildlife and natural environment.
7. Policymakers need to learn how energy efficient and affordable housing design is important in Michigan where the winter season is long and cold. Therefore, statewide efforts are expected to encourage builders and developers to achieve the standards of energy efficient and affordable housing design for new homes. For existing old homes, intensified incentives such as loans or tax credits could be endowed for homeowners who renovate their homes with energy efficient guidelines.
8. Child-friendly residential environment design is very important for Michigan residents. It is necessary to provide safe neighborhood spaces for children's outdoor activities. Creating amenities for children such as playgrounds in subsidized housing projects is also important and will provide them with an opportunity for social equity.

1. Overview

The concept of new urbanism was created for rebuilding communities which previously had automobile-oriented environments and residential areas that were disconnected from social and commercial areas. New urbanism is also referred to as neotraditional community design emphasizing a walking-friendly environment. The core design principle of new urbanism is thus to enable community residents to live, work, shop, and play within a walkable distance of their residential areas (Heitmeyer & Kind, 2004).

Since the first new urban community of Seaside was built in Florida during the 1980s, new urbanism has shown its broad range of applications in community design and planning. New urbanism is not only for designing new communities but also for revitalizing obsolete communities.

The Congress for the New Urbanism founded in 1990s more clearly defined the design and planning principles of new urbanism in *The Charter of the New Urbanism* (CNU, 2007). The notable features of those principles include design and planning implications that consider mixed land use, pedestrian friendly design, accessible public spaces, and urban places framed by architectural and landscape designs. In other words, new urbanism is an integrated concept that combines transportation planning considering citizens (such as pedestrian-friendly street design and public transportation), energy saving efforts (such as affordable housing design), preservation of natural environment (such as preserving original plants and trees when developing residential areas), and so on. As smart growth and sustainable development became more crucial planning concepts, new urbanism principles have also been spotlighted by community planners and urban policymakers since then.

However, there has been lack of comprehensive perspectives and related policy implications in the design and planning principles of new urbanism for comprehensive community planning. Most research has focused on the health benefits and economic value of walkable environments (Litman, 2004; Song & Knaap, 2003), and sense of community (Kim & Kaplan, 2004; Plas & Lewis, 1996). In addition, the State of Michigan has been rarely selected as one of the research settings.

With a comprehensive approach, the purpose of this study was to explore how design and planning principles of new urbanism could be applied in designing new communities and regenerating old communities in the State of Michigan. To achieve the research purpose, this study explored cases of new urbanist community design and related programs, investigated the opinions of Michigan residents, business owners, and urban planners on the core new urbanism principles, and suggested policy implications for community design and planning.

2. Scope of the Problem in Michigan

The Charter of the New Urbanism presented by the Congress for the New Urbanism (CNU) states design and planning principles with regard to three standpoints of: 1) region; 2) neighborhood/ district/corridor; and 3) block/street/building. Each standpoint includes nine principles to guide public policy, development practice, urban planning, and community design (CNU, 1993).

From the standpoint of region, new urbanist communities consider the relationships between the community, natural, and economic environments. For example, new urbanist communities respect the existing urban patterns such as physical structures and economic activity, social fabric such as citizens' social and cultural characteristics, and natural landscapes such as indigenous plants and topography. From the neighborhood standpoint, new urbanist communities should be compact, pedestrian-friendly, and have mixed-use developments (CNU, 1993). New urbanist communities are also expected to provide many open spaces such as parks and community gardens that preserve natural environments and consider residents' social interactions in such places. From the block/ street/ building standpoint, new urbanist communities emphasize interconnections between architecture and its surroundings such as streets and public spaces. Streets should be safe and comfortable for people to walk. Civic buildings and public places should be important sites that reinforce community identity.

With the overall economic downturn in Michigan, many cities in Michigan have shown severe planning issues including distressed downtowns, abandoned commercial buildings, obsolete residential neighborhoods, unmanaged old streets that need to be rehabilitated, and so on. To overcome these planning issues, the state has made great strides. The representative examples of those efforts are Master Plan Projects in many Michigan cities, the Michigan Main Street Program, Brownfield Redevelopment, and various incentive programs which encourage economic activities in the cities.

New community design has also been launched in Michigan. Some newly developed communities have followed core design and planning principles of new urbanism. Cherry Hill Village is one of the new urbanist communities in Michigan. Michigan State University also initiated a New Urbanism Bus Tour program to encourage students and faculty members to understand core design and planning principles of new urbanism (Land Policy Institute, 2007). With these various efforts, new urbanism has become a prevalent concept in this state. Associated with these efforts, this study focused on the following contents.

- Current applications of new urbanism in Michigan.
- Michigan residents' opinions on the design and planning principles of new urbanism with a major focus on pedestrian-friendly environments, transit-oriented communities, mixed-use development, downtown revitalization, more open space and sports facility design, preservation of wildlife and natural environment, energy efficient and affordable housing design, and child-friendly residential environment design.
- Business owners' opinions on walkable streets, public transportation services, downtown revitalization, sports and entertainment facility design, and pedestrian-friendly façade and building design.
- Community planners' evaluations on the current conditions and suggestions for future policy implications for walkable environments, downtown revitalization, public transportation, and energy efficient housing, building and community design.
- Suggestions for policy implications based on the research findings and discussions.

3. Research Contents and Methods

This study employed case studies, surveys, and interviews for a rigorous research procedure. Table 1 shows the research methods for this study.

Table 1. Research Contents and Methods

Research Contents	Research Methods	Subjects
Case Studies of New Urbanism in Michigan	Visit a new urbanist community in Michigan	Cherry Hill Village, MI
	Related programs in Michigan	Walk and Bike Lansing Program Michigan Main Street Program Brownfield Redevelopment
Investigating Public Opinions	The State of the State Survey (SOSS)	1,001 Michigan residents and their opinions on the design and planning principles of new urbanism
	Interviews with business owners	Business owners in regenerated urban areas in Lansing, Mason, and East Lansing, MI, and their opinions
Investigating Community Planners' Opinions	Web-based survey of planners	Urban planners working for public and private planning commissions in Michigan

Based on the results and discussions, policy implications were suggested. Policy directions consider new community design and old community regeneration. Detailed implications consider transportation planning including walkability and public transportation services; land use policy including downtown revitalization and mixed-use building and community development; economic development through attractive façade and building design; environmental planning including wild-life and natural environment preservation; and housing and energy saving, including energy efficient and affordable housing, building, and community design; and child friendly residential environment design. Table 2 shows the planning principles from new urbanism that this study will focus on.

Table 2. Focus Principles from New Urbanism

Planning Area	Policy Implications	Focus Principles of New Urbanism for This Study
Transportation Planning	Walkable environment	Pedestrian-friendly environment - General condition (safety, amenity, & facilities) - Connectivity among pedestrian facilities - Suggestions for improving the pedestrian Environments
	Transit-oriented community	Public transportation - General quality of the service - Public transportation functions as an alternative mode of automobile - Suggestions for the promotion of the public transportation market share
Land Use Policy	Zoning	Downtown revitalization Mixed-use developments - Need of mixed-use developments
Environmental Planning	Preservation of natural environment	Preservation of natural environment and diverse open spaces.
Energy Saving	Energy efficient design for buildings, housing, & communities	Affordable housing and building design accommodating energy saving - Consideration of energy efficient design - Regulation for encouraging energy efficient design
Others	Michigan Main Street Program	Revitalization of old streets and commercial buildings - Importance of urban regeneration - Aesthetical consideration and municipal support for improving building façade design

4. Current Applications of New Urbanism in Michigan

The State of Michigan has caught up with the design and planning principles of new urbanism considering new community developments and the regeneration of old downtown areas. There are several important programs and community design examples in Michigan along with fundamental planning concepts of new urbanism: the Walk and Bike Lansing Program, the Michigan Main Street Program, the Brownfield Redevelopment, and walkable community design. Cherry Hill Village in Canton is a representative new urbanist community in Michigan.

1). The Walk and Bike Lansing Program

The Lansing Walking and Bicycling Task Force (2008) reported that there have been serious problems with pedestrians and bike use in the Lansing area. The problems included low rate of walkers and bicycle riders, poor facilities, pedestrian- and bike-user related accidents, and so on. Many roads have also been classified as incomplete streets which have no sidewalk and bikeway. The ratio of trips made by walking and bike was thus very low. Among all trips in Lansing, only 2.45% were walk trips and 0.42% were bike trips.

To solve these problems and promote pedestrian-friendly walking environments, the Lansing Walking & Bicycling Task Force was established and the ‘Walk and Bike Lansing’ program was initiated in 2006. ‘Walk and Bike Lansing’ is ‘a campaign to engage and mobilize Lansing residents, businesses, and others to make Lansing an accessible and walk and bike friendly city’ (Lansing Walking and Bicycling Task Force, 2008).

The ‘Walk and Bike Lansing’ program is not just for improving the city as a walkable and bikable community, but also for reducing pedestrian and bike accidents, reducing traffic demands, and diminishing crime with vigorous streets. There are some goals of the ‘Walk and Bike Lansing’ program, according to walkbike-lansing.com. The goals are to;

- Make streets safe and easy to walk and bike for fun, fitness, and transportation.
- Feature “complete streets” which accommodate all road users.
- Build streets and sidewalks as part of the “public realm”, meant for travel, social interaction, commerce and community activities.
- Redesign urban areas to support local businesses and help the environment.
- Lead to diminish crime and other community benefits.
- Experience reduced traffic demands, improved air quality and greater physical fitness.
- Be seen as places with a high quality of life.
- Experience greater business growth and tourism.

To achieve these goals and objectives, the Task Force team and the City of Lansing made six main strategies for pedestrian and bike environments. These are;

- Establish a non-motorized network
- Make all streets safe and convenient for walking and bicycling
- Increase bicycle parking
- Provide connections between walking, bicycling, and public transportation
- Educate citizens about bicycle and pedestrian safety, and the benefits of walking and bicycling
- Create pedestrian and bike related social marketing and health promotion

‘Walk and Bike Lansing’ also leads ‘the Road Diet program’. Currently the target streets of this program are Saginaw Street and Oakland Street in Lansing. These two streets were widened and turned into one-way streets in 1965, but these roads have shown a number of bicyclist and pedestrian accidents and high vacancy rate in commercial buildings. The Road Diet Program transforms lanes on multiple-lane roads into safe, comfortable spaces for pedestrians, bicyclists, and community activities (Lansing Walking and Bicycling Task Force, 2008). This ‘Walk and Bike Lansing’ program is expected to create more pedestrian-friendly and transit-oriented environments in the city.

2). Michigan Main Street Program

New Urbanism supports the preservation of historic areas of a city and downtown revitalization while respecting local contexts. The primary purpose of the Michigan Main Street Program is to preserve historic commercial buildings and community fabric in Michigan. The program focuses on revitalizing Michigan's downtowns and flourishing historical commercial centers. These program characteristics thus get along with the core principles of new urbanism.

In a comprehensive viewpoint, the Michigan Main Street Program aims to maintain and recruit young people, professionals, and high-tech firms. Thirteen communities including Old Town Lansing and Grand Haven in Michigan have Main Street Programs (Michigan Department of History, Arts, & Libraries, 2008). Other cities in Michigan running the Main Street Program are Boyne City, Calumet, Clare, Howell, Iron Mountain, Manistee, Marshall, Muskegon, Niles, Portland, and Scottville. The Main Street Programs are expected to promote pedestrian-friendly environments, downtown revitalization for bringing diverse economic activities, and historic building and district preservation for the cities.

3). Brownfield Redevelopment

Brownfield redevelopment in Michigan has recently become worthy of notice because of the deterioration of Michigan's industry (i.e. automakers) and efforts in restoring urban functions. According to the Environmental Protection Agency (2008), "Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant". In October 2008, 1,897 sites were nominated or funded by the State of Michigan as cleanup sites and redeveloped with the Baseline Environmental Assessment (BEA) process. A total of \$830 million was invested for 1,674 sites from public sources (Michigan Department of Environmental Quality, 2008). The Brownfield Redevelopment has a strong connection with new urbanism as the sites usually are developed for various usages such as commercial or mixed use.

Table 3. Michigan Counties with Brownfield Redevelopment Projects

County	No	County	No	County	No	County	No
Alcona	9	Dickinson	6	Lake	7	Oceana	16
Alger	11	Eaton	18	Lapeer	9	Ogemaw	16
Allegan	19	Emmet	7	Leelanau	5	Ontonagon	1
Alpena	15	Genesee	40	Lenawee	39	Osceola	20
Antrim	17	Gladwin	10	Livingston	32	Oscoda	4
Arenac	7	Gogebic	4	Luce	5	Otsego	6
Baraga	7	Grand Traverse	23	Mackinac	14	Ottawa	20
Barry	13	Gratiot	21	Macomb	27	Presque Isle	7
Bay	32	Hillsdale	35	Manistee	11	Roscommon	22
Benzie	6	Houghton	15	Marquette	26	Saginaw	52
Berrien	61	Huron	15	Mason	6	St. Clair	13
Branch	18	Ingham	45	Mecosta	9	St. Joseph	20
Calhoun	54	Ionia	13	Menominee	8	Sanilac	4
Cass	18	Iosco	17	Midland	12	Schoolcraft	13
Charlevoix	17	Iron	4	Missaukee	11	Shiawassee	16
Cheboygan	9	Isabella	11	Monroe	43	Tuscola	13
Chippewa	28	Jackson	62	Montcalm	24	Van Buren	24
Clare	18	Kalamazoo	73	Montmorency	12	Washtenaw	51
Clinton	13	Kalkaska	12	Muskegon	51	Wayne	203
Crawford	17	Kent	69	Newaygo	13	Wexford	18
Delta	15	Keweenaw	1	Oakland	89	Total	1897

Note: This table was created based on the source from <http://www.deq.state.mi.us/ustfields>.

4) New Urbanist Community: Cherry Hill Village, Canton

Cherry Hill Village is well known as a new urbanist community that includes residential, commercial, retail facilities, and schools within a community. It is located in Canton in the southwest area of Detroit. The village was developed on 460 acres. The first phase has been finished and phase two is in progress. Visits to this site were conducted twice, first on April 11th, 2009 and then on May 14th, 2009. During site visits the community design characteristics were investigated.

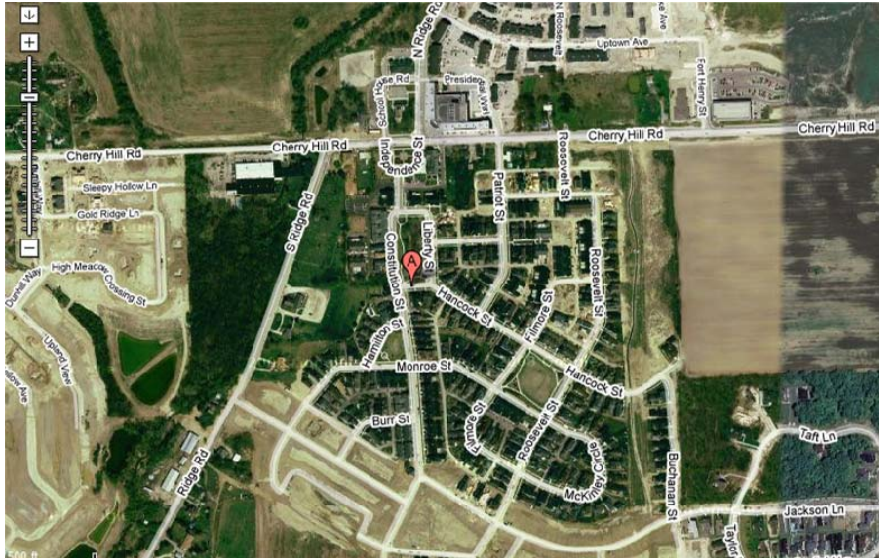


Figure 1. Cherry Hill Village (Source: <http://maps.google.com>)

(1). Community Development Basic Design Concept

Cherry Hill Village has basic community design concepts as follows.

- Mixture of historical town and new development
- Combination of housing, shopping, employment, recreation, and community amenities
- Survey based development
- The central area of the community is designed for community activities and commercial and cultural activities
- Open spaces such as parks were networked
- Mixture of urban and rural characteristics
- Mixture of small and large houses (small homes located in central area and large homes located outside of the community) (Hall and Porterfield, 2001) and mixture of single family homes and multi family homes considering social mix

The size of the community is 460 acres consisting of 931 single family housing lots, 360 townhouse/condo residences, 600 apartments, 216,500 square feet of commercial space, 26,560 square feet of civic space, a 400 seat performing arts center, a firehouse, and schools (Looney Ricks Kiss Architects Inc., 2008). Table 4 shows the community design characteristics of Cherry Hill Village identified by the site visits.

Table 4. Community Design Characteristics of Cherry Hill Village

Characteristics	Contents
Walkability	<ul style="list-style-type: none"> - Excellent sidewalk connections - Sidewalk width of ~ 3.2 feet - Width of roads for vehicles is relatively narrow, thus vehicles' speed is reduced and safer than any other suburban communities - Sidewalk intersections are well connected, but not marked on the roads - A main road separates the upper area (commercial, multifamily and public purpose space) from the lower area (single family housing), however, the pedestrians are protected by pedestrian signals and the eyesight for drivers is good thanks to a straight road design
Design	<ul style="list-style-type: none"> - Higher density than adjacent suburban development communities from minimizing backyard space and locating public parks in the community
Public Transportation	<ul style="list-style-type: none"> - No public transportation in the village and circumferences
Diversity	<ul style="list-style-type: none"> - Mixed-use community development - Single family housing, town homes, condominiums, and apartments are developed in the same village: small and medium scale of houses are mixed in single family housing area - Mixed cultural, retail, and office facilities

The development strategy of the village is the Traditional Neighborhood Development (TND) and the population and housing density are higher than other adjacent suburban communities. There are a few reputations and reviews for this village design because it has recently been developed and the development is still on-going. In terms of design, density, and dynamics, the Cherry Hill Village succeeded the basic concepts of New Urbanism. Table 5 shows the majority of new urbanism characteristics found in the community such as a walkable environment, mixed-use development, open space design, and mixture of single and multifamily homes.

Table 5. New Urbanism Characteristics of Cherry Hill Village (Photos by Authors)

	
<p>Walkability</p>	<p>Connection</p>
	
<p>Theater and Commercial Facilities</p>	<p>Parks</p>
	
<p>Human Service Center (Office)</p>	<p>Apartments and Condos</p>

There are limitations to the village design. Even though the contents of the village could be considered new urbanist, the village is placed beyond the edge of existing suburbs. As a consequence of the location, it makes long-distance work trips. Its location, far from the main commercial areas could also make long-distance shopping trips. The lack of transit around the village and additional destruction of farmland and forests on the outskirts of the suburbs could be negative aspects in the development of this community.

5. State of the State Survey: Michigan Residents' Opinions on Design and Planning Principles of New Urbanism

5.1 Introduction

The State of the State Survey (SOSS) was conducted by Michigan State University's Institute for Public Policy and Social Research in the spring of 2009 to investigate public opinions in Michigan on the major principles of new urbanism. It is a telephone survey with a standardized survey questionnaire. The survey participants were 1,001 residents of Michigan. The survey began on January 28, 2009 and continued through March 25, 2009.

5.2 General Characteristics of Survey Participants

Participants' demographic and socioeconomic characteristics were investigated. Among the 1,001 respondents, 48.6% were male and 51.4% were female. Approximately 20% of the respondents were in their 20s or younger; 40% were in their 30s and 40s; and more than 35% of residents were in their 50s or older. The average age of the respondents was 45.8 years old. Most of the respondents were white (=84.3%), but the remaining respondents included a variety of races including Black/African American, Hispanic, American Indian/Alaska Nation, Asian, Hawaiian/Pacific Islander, and others.

Regarding their marital status, more than half of the respondents identified themselves as married (=59.5%), 26.4% were singles who had never been married, and 12.5% were divorced, separated, or widowed singles. Among the 1,001 respondents, 252 respondents (=25.3%) had more than one child currently living with them and 743 (=74.7%) had no child currently living with them.

Respondents' residential regions were identified. More than 45% of the respondents reside in southeast Michigan and the next two major areas were west central Michigan (=14.2%) and southwest Michigan (=13.8%). Other respondents were from diverse regions such as the Upper Peninsula, northern Michigan, and east central Michigan.

The overall educational attainment level of the respondents was higher than high school graduate (=96.8%). More than 60% of the total respondents had completed between one and four years of college, and 13.2% of the total respondents held master's degrees. This shows their overall educational level was high enough to understand the general contents of the survey for this study.

Their employment status was investigated. Among the 1,001 survey participants, 31 refused to disclose their employment status. Among the 970 respondents, 550 respondents (=54.9%) were employed either as full time (=37.8%), part time (=14.9%), work and study (=1.4%), have a job but not at work last week (=0.1%), or self-employed (=2.5%). Among the 970 respondents, 11.8% were unemployed/laid off/looking for a job, 14.4% were retired, 3.1% were full time students, 11.6% were homemakers, and 2.4% were the disabled. Table 6 shows demographic and socioeconomic characteristics of the survey participants.

Table 6. Demographic and Socioeconomic Characteristics of the Survey Participants

General Characteristics			Frequency	Percentage (%)
Gender	Male		486	48.6
	Female		515	51.4
	Subtotal		1001	100.0
Age	18-24 yrs		124	12.4
	25-29 yrs		83	8.3
	30-39 yrs		202	20.3
	40-49 yrs		211	21.2
	50-59 yrs		155	15.5
	60-64 yrs		52	5.3
	65 or older		169	17.0
	Subtotal		996	100.0
Race	White/Caucasian		788	84.3
	Black/African American		119	12.7
	Other		27	3.0
	Subtotal		934	100.0
Marital status	Married, Remarried	Married, Remarried	591	59.5
	Single, been married	Divorced	63	6.3
		Separated	6	0.6
		Widowed	56	5.6
	Single, never been married	Member of an unmarried couple	15	1.6
		Single, never been married	263	26.4
Subtotal		993	100.0	
Number of children ages 4 and 12 living with	With no child	None	743	74.7
	With (a) child(ren)	1	96	9.6
		2	113	11.4
		More than 3	43	4.3
	Subtotal		995	100.0
Region of residency	Upper Peninsula		34	3.4
	Northern Michigan		57	5.7
	West Central Michigan		142	14.2
	East Central Michigan		87	8.7
	South West Michigan		138	13.8
	Southeast Michigan		456	45.6
	Detroit		87	8.7
	Subtotal		1001	100.0
Educational attainment	Lower than high school		33	3.3
	High school graduate		307	30.8
	Technical/junior college		60	6.0
	College (1-4 year graduate)		435	43.7
	Some post graduate		31	3.1
	Graduate school or higher		131	13.2
	Subtotal		997	100.0
Employment	Employed	Work full time	366	37.8
		Work part time	145	14.9
		Work and go to school	13	1.4
		Self employed either full or part time	25	2.5
		Other (have a job, not work last week)	1	0.1
	Unemployed	Unemployed, laid off, look for work	115	11.8
		Retired	140	14.4
		School full time	30	3.1
		Homemaker	112	11.6
		Disabled	23	2.4
	Subtotal		970	100.0

Non-responses were not included

In addition, survey participants' housing characteristics were identified (see Table 7). Regarding their housing types, 84.4% of the 1,001 respondents were identified as living in single-family homes, 5.6% were in apartments, 5.4% were in modular/mobile home/manufactured homes, 2.8% were in condominiums, and 1.8% were in duplex or townhomes. Regarding homeownership, only 995 participants disclosed their homeownership information. Among them, 854 owned their homes (=85.8%) and 141 currently rented their homes (=14.2%).

Table 7. Housing Characteristics of the Survey Participants

Housing Characteristics		Frequency	Percentage (%)	
Type of Home	Single family home	Single family home	843	84.4
	Non-single family home	2 duplex	12	1.2
		Condominium	28	2.8
		Modular/mobile home/ manufactured home	54	5.4
		Apartment	56	5.6
		Townhouse	6	0.6
	Subtotal		999	100.0
Homeowner-ship	Own		854	85.8
	Rent		141	14.2
	Subtotal		995	100.0

Non-responses were not included

5.3 Transportation Mode of Adults to Work and Children to School

According to *the Charter for New Urbanism* by the Congress of the New Urbanism (1993), new urbanism supports compact and pedestrian-friendly community developments. Many daily activities should occur within walking distance. Therefore, walkability in a community is a very important issue and community design should support healthy walking behaviors among residents.

In order to understand Michigan residents' current walking behaviors in their communities, this study investigated Michigan residents' current transportation mode to work and their children's transportation mode to school. Residents were asked if they went to their workplace every morning by driving, bus or train, riding a bike, or walking. The residents with at least one child of school age were asked if their child or children travelled to school by car, school bus, riding a bike, or walking.

Table 8 shows the transportation mode to work and children's mode to school. Among the 1,001 Michigan residents, those who were unemployed, retired, full time students, homemakers, or disabled were excluded for this question. Thus, a total of 550 residents were asked about their transportation mode to work and 5 refused to respond to this question. The most prevalent mode to work was driving their own cars (=92.7%), and the next prevalent mode was car-pooling or van-pooling (=2.0%). Nine residents walked to work, but none of the respondents used bicycles as their transportation mode to work. Compared with the percentage of commuting by car, other transportation modes were rarely used for commuting.

For the 254 residents with children, their children’s transportation modes to school were investigated. The most prevalent mode was school bus (=57.6%), and the second prevalent mode was car or car-pooling (=30.1%). There were 3 cases that their children go to school by bicycle (=1.3%) and 20 cases where their children walk to school (=7.9%). In addition, even though it was small number, there were 2 cases that their children use public transportation (e.g. city bus) to go to school. These results show that children have more possibilities to walk, ride bikes, or use buses than adults because many of them attend neighborhood schools.

Table 8. Transportation Mode to Work / School

Transportation mode to work/to school		Frequency	Percentage (%)
Transportation mode to work	By driving own car	505	92.7
	Car-pooling, Van-pooling	11	2.0
	Bus/Train	7	1.4
	Bicycle	0	0.1
	Walking	9	1.7
	Miscellaneous	11	2.0
	Subtotal	545	100.0
Transportation mode to school	Car-pooling, Van-pooling	76	30.1
	School bus	146	57.6
	Public transportation-City bus	2	0.7
	Bicycle	3	1.3
	Walking	20	7.9
	Miscellaneous	6	2.4
	Subtotal	254	100.0

5.4 Residents’ Opinions on Key New Urbanism Design Principles

Michigan residents’ opinions on seven new urbanism design principles were investigated. Their responses are presented in Tables 9-10.

1) Importance of Walkable Environment

The importance level of having a walkable environment in a community was investigated by the question, “Community planners are responsible for making communities more livable and sustainable by meeting the needs of residents. On a scale of 0 to 10, where 0 is not at all important and 10 is very important, how important do you think the issue of ‘providing sidewalks and pedestrian friendly walking areas’ should be as community planners plan for changes in your community?” Among the 1,001 Michigan residents, 31.9% of them thought the walkable environment to be ‘very important’ and a total of 78.0% Michigan residents rated the importance level of walkable environment higher than the point 5 (neutral point). The mean value of the importance level of the walkable environment in their communities was 7.55 out of 10.

2) Importance of Public Transportation Services

The importance level of public transportation service in a community was investigated by the question, “On a scale of 0 to 10, where 0 is not at all important and 10 is very important, how important do you think the issue of ‘providing good public transportation services such as more frequent bus services and more bus routes’ should be as community planners plan for changes in your community?” Among the 1,001 Michigan residents, 25.5% of them thought it was ‘very important’ to provide good public transportation services in their communities. A total of 76.0% of Michigan residents rated the importance level of public transportation services higher than 5 (neutral point). The mean value of the importance level of public transportation services was 7.29 out of 10.

3) Importance of Old Downtown Revitalization

The importance level of old downtown revitalization was investigated by the question, “On a scale of 0 to 10, where 0 is not at all important and 10 is very important, how important do you think the issue of ‘revitalizing old downtown areas by either renovating older buildings or constructing new ones’ should be as community planners plan for changes in your community?” Among the 1,001 Michigan residents, 28.8% of them thought it was “very important” to revitalize old downtown areas in their communities. A total of 77.2% of Michigan residents rated the importance level of old downtown revitalization higher than 5 (neutral point). The mean value of the importance level of old downtown revitalization was 7.39 out of 10.

4) Importance of Open Spaces and Sport Facilities

The importance level of providing open spaces and sports facilities was investigated by the question, “On a scale of 0 to 10, where 0 is not at all important and 10 is very important, how important do you think the issue of ‘providing more parks and sports facilities for outdoor activities for all ages’ should be as community planners plan for changes in your community?” Among the 1,001 Michigan residents, 69.3% of them thought it was “not at all important” to provide more parks and sports facilities.

This was the lowest-rated principle among the seven new urbanism principles this study chose to examine. The mean value of the importance level of providing more parks and sport facilities was 0.32 out of 10. It could be inferred from the result that Michigan possesses enough open spaces such as parks and sports facilities for residents to enjoy their outdoor activities.

5) Importance of Wildlife and Natural Environment Preservation

The importance level of preserving wildlife and natural environment in a community was investigated by the question, “On a scale of 0 to 10, where 0 is not at all important and 10 is very important, how important do you think the issue of ‘preserving existing wildlife and natural environments’ should be as community planners plan for changes in your community?” Among the 1,001 Michigan residents, 38.7% of them thought it was “very important” to preserve wildlife and natural environments. A total of 79.5% of Michigan residents rated the importance level of wildlife and natural environment preservation higher than 5 (neutral point). The mean value of the importance level of preserving existing wildlife and natural environments was 7.77 out of 10.

6) Importance of Energy Efficient and Affordable Housing Construction

The importance level of preserving wildlife and natural environment in a community was investigated by the question, “On a scale of 0 to 10, where 0 is not at all important and 10 is very important, how important do you think the issue of ‘building more energy efficient and affordable housing’ should be as community planners plan for changes in your community?” Among the 1,001 Michigan residents, 46.8% of them thought it was “very important” to build more energy efficient and affordable housing in their communities. A total of 86.4% of Michigan residents rated the importance level of energy efficient and affordable housing higher than 5 (neutral point). The mean value of the importance level of providing more energy efficient and affordable housing in their communities was 8.27 out of 10.

This issue was the highest-rated one among the seven principles this study chose from the new urbanism principles. This result showed that energy efficient and affordable housing design should be considered prior to any other issues in Michigan.

7) Importance of Child-Friendly Residential Areas

The importance level of designing child-friendly residential areas was investigated by the question, “On a scale of 0 to 10, where 0 is not at all important and 10 is very important, how important do you think the issue of ‘providing residential areas with playgrounds for children’ should be as community planners plan for changes in your community?” Among the 1,001 Michigan residents, 35.9% of them thought it was “very important” to design residential areas with playgrounds for children. A total of 80.4% of Michigan residents rated the importance level of child-friendly residential community design higher 5 (neutral point).

The mean value of the importance level of child-friendly residential community design was 7.82 out of 10. This issue was the second important one among the seven new urbanism principles this study chose to examine.

Table 9. Opinions on Walkability, Public Transportation, & Downtown Revitalization

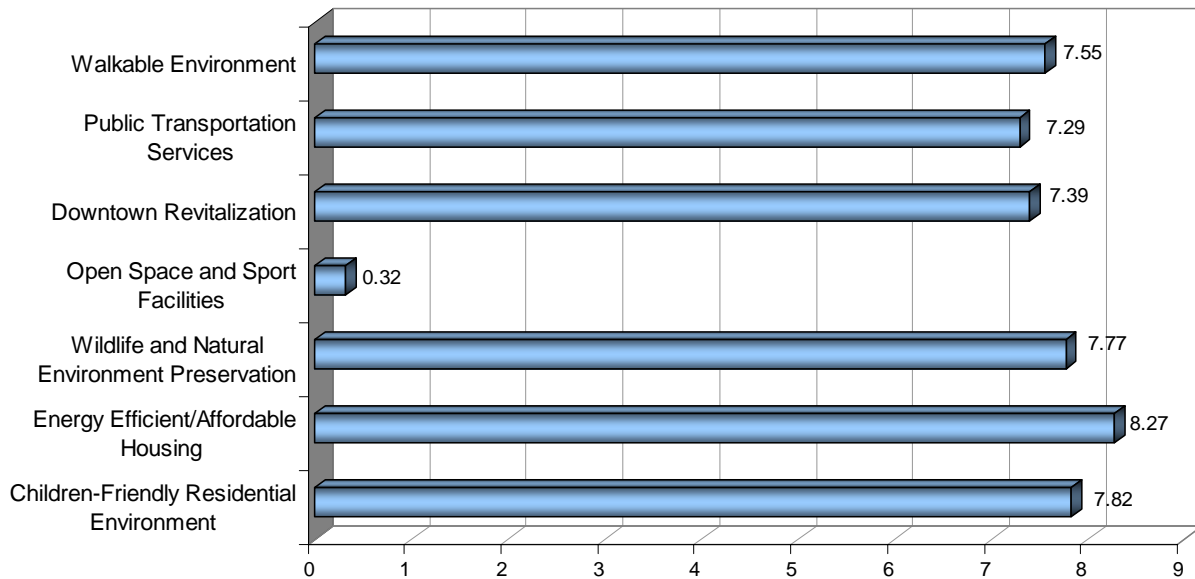
Principle	rank	Not at all	1	2	3	4	5	6	7	8	9	Very Important
Providing sidewalks and pedestrian friendly walking areas.	n	26	7	10	26	38	112	47	124	213	74	317
	%	2.6	0.7	1.0	2.6	3.8	11.3	4.7	12.5	21.5	7.4	31.9
Providing good public transportation services such as more frequent bus services and more bus routes.		Not at all	1	2	3	4	5	6	7	8	9	Very Important
	n	30	11	15	39	16	126	62	137	195	102	251
	%	3.0	1.1	1.6	3.9	1.6	12.8	6.3	14.0	19.8	10.4	25.5
Revitalizing old downtown areas by either renovating older buildings or constructing new ones.		Not at all	1	2	3	4	5	6	7	8	9	Very Important
	n	22	12	12	29	23	127	69	144	212	54	285
	%	2.6	0.7	1.0	2.6	3.8	11.3	4.7	12.5	21.5	7.4	31.9

Table 10. Opinions on Open Space, Natural Environment, Energy Efficiency, & Child-Friendly Residential Community Design

Principle		Not at all	1	2	3	4	5	6	7	8	9	Very Important																							
Providing more parks and open spaces for outdoor activities for all ages.	n	694	305	0	0	0	0	0	0	0	2	0																							
	%	69.3	30.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0																							
	<table border="1"> <caption>Data for Bar Chart: Providing more parks and open spaces for outdoor activities for all ages.</caption> <thead> <tr> <th>Importance Level</th> <th>Percentage</th> </tr> </thead> <tbody> <tr><td>Not at all important</td><td>69.3%</td></tr> <tr><td>1</td><td>30.4%</td></tr> <tr><td>2</td><td>0.0%</td></tr> <tr><td>3</td><td>0.0%</td></tr> <tr><td>4</td><td>0.0%</td></tr> <tr><td>5</td><td>0.0%</td></tr> <tr><td>6</td><td>0.0%</td></tr> <tr><td>7</td><td>0.0%</td></tr> <tr><td>8</td><td>0.0%</td></tr> <tr><td>9</td><td>0.2%</td></tr> <tr><td>Very important</td><td>0.0%</td></tr> </tbody> </table>												Importance Level	Percentage	Not at all important	69.3%	1	30.4%	2	0.0%	3	0.0%	4	0.0%	5	0.0%	6	0.0%	7	0.0%	8	0.0%	9	0.2%	Very important
Importance Level	Percentage																																		
Not at all important	69.3%																																		
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6	0.0%																																		
7	0.0%																																		
8	0.0%																																		
9	0.2%																																		
Very important	0.0%																																		
Preserving and protecting wildlife and natural environments.	n	28	5	13	20	15	125	33	141	166	66	386																							
	%	2.8	0.5	1.3	2.0	1.5	12.6	3.3	14.2	16.7	6.6	38.7																							
	<table border="1"> <caption>Data for Bar Chart: Preserving and protecting wildlife and natural environments.</caption> <thead> <tr> <th>Importance Level</th> <th>Percentage</th> </tr> </thead> <tbody> <tr><td>Not at all important</td><td>2.8%</td></tr> <tr><td>1</td><td>0.5%</td></tr> <tr><td>2</td><td>1.3%</td></tr> <tr><td>3</td><td>2.0%</td></tr> <tr><td>4</td><td>1.5%</td></tr> <tr><td>5</td><td>12.6%</td></tr> <tr><td>6</td><td>3.3%</td></tr> <tr><td>7</td><td>14.2%</td></tr> <tr><td>8</td><td>16.7%</td></tr> <tr><td>9</td><td>6.6%</td></tr> <tr><td>Very important</td><td>38.7%</td></tr> </tbody> </table>												Importance Level	Percentage	Not at all important	2.8%	1	0.5%	2	1.3%	3	2.0%	4	1.5%	5	12.6%	6	3.3%	7	14.2%	8	16.7%	9	6.6%	Very important
Importance Level	Percentage																																		
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8	16.7%																																		
9	6.6%																																		
Very important	38.7%																																		

Building more energy efficient and affordable housing.		Not at all	1	2	3	4	5	6	7	8	9	Very Important																								
	n	18	3	18	14	17	63	46	88	138	124	467																								
	%	1.8	0.3	1.8	1.5	1.7	6.3	4.6	8.8	13.8	12.4	46.8																								
<table border="1"> <caption>Data for Building more energy efficient and affordable housing chart</caption> <thead> <tr> <th>Importance Level</th> <th>Percentage</th> </tr> </thead> <tbody> <tr><td>Not at all important</td><td>1.8%</td></tr> <tr><td>1</td><td>0.3%</td></tr> <tr><td>2</td><td>1.8%</td></tr> <tr><td>3</td><td>1.5%</td></tr> <tr><td>4</td><td>1.7%</td></tr> <tr><td>5</td><td>6.3%</td></tr> <tr><td>6</td><td>4.6%</td></tr> <tr><td>7</td><td>8.8%</td></tr> <tr><td>8</td><td>13.8%</td></tr> <tr><td>9</td><td>12.4%</td></tr> <tr><td>Very important</td><td>46.8%</td></tr> </tbody> </table>													Importance Level	Percentage	Not at all important	1.8%	1	0.3%	2	1.8%	3	1.5%	4	1.7%	5	6.3%	6	4.6%	7	8.8%	8	13.8%	9	12.4%	Very important	46.8%
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8	13.8%																																			
9	12.4%																																			
Very important	46.8%																																			
Providing kid-friendly residential areas or neighborhoods with playgrounds		Not at all	1	2	3	4	5	6	7	8	9	Very Important																								
	n	11	4	9	11	44	115	63	105	190	86	358																								
	%	1.1	0.4	0.9	1.1	4.4	11.5	6.3	10.5	19.1	8.6	35.9																								
<table border="1"> <caption>Data for Providing kid-friendly residential areas or neighborhoods with playgrounds chart</caption> <thead> <tr> <th>Importance Level</th> <th>Percentage</th> </tr> </thead> <tbody> <tr><td>Not at all important</td><td>1.1%</td></tr> <tr><td>1</td><td>0.4%</td></tr> <tr><td>2</td><td>0.9%</td></tr> <tr><td>3</td><td>1.1%</td></tr> <tr><td>4</td><td>4.4%</td></tr> <tr><td>5</td><td>11.5%</td></tr> <tr><td>6</td><td>6.3%</td></tr> <tr><td>7</td><td>10.5%</td></tr> <tr><td>8</td><td>19.1%</td></tr> <tr><td>9</td><td>8.6%</td></tr> <tr><td>Very important</td><td>35.9%</td></tr> </tbody> </table>													Importance Level	Percentage	Not at all important	1.1%	1	0.4%	2	0.9%	3	1.1%	4	4.4%	5	11.5%	6	6.3%	7	10.5%	8	19.1%	9	8.6%	Very important	35.9%
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7	10.5%																																			
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9	8.6%																																			
Very important	35.9%																																			

Figure 2 below shows the mean values of the importance level of each new urbanism principle responded by the 1,001 Michigan residents participating in the survey. The principle with the highest mean value was ‘energy efficient and affordable housing design (=7.97)’, the second highest one was ‘child-friendly residential environment (=7.83)’, and the third highest one was ‘wildlife and natural environment preservation (=7.72)’. The principle with the lowest value was ‘providing more parks and open spaces’ (=0.32).



Legend: 0 Not at all important ----- 10 Very important

Figure 2. Mean Values of the Importance Level of Seven New Urbanism Principles (N= 1001)

8) Residents’ Opinions Depending on Demographic and Socioeconomic Characteristics

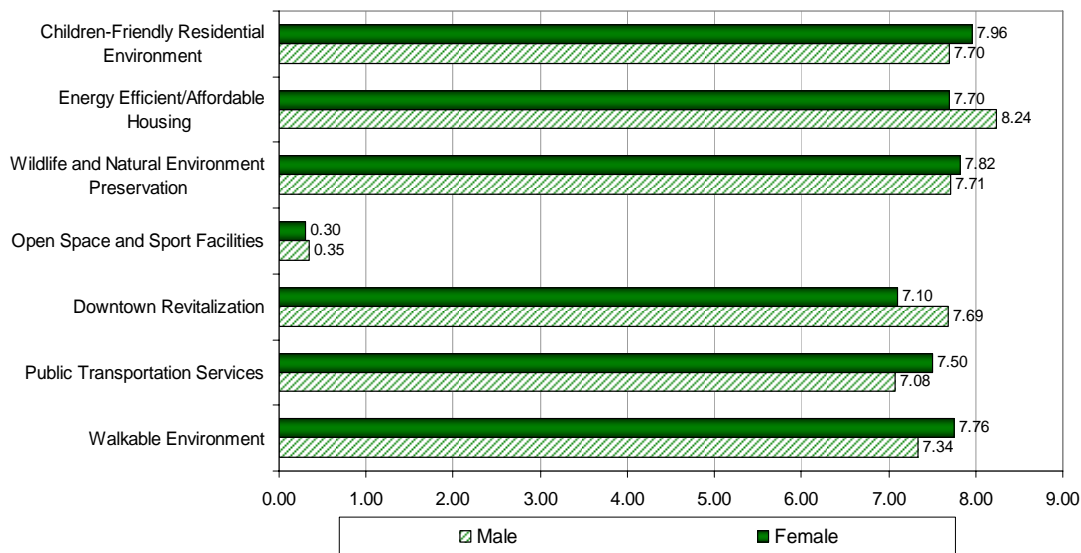
In addition to the overall opinions of Michigan residents, Michigan residents’ opinions on seven new urbanism principles were examined to determine if there were any differences depending on demographic and socioeconomic characteristics. Demographic characteristics used for this analysis were residents’ gender, age, marital status, and number of children age 4 to 12. Socioeconomic characteristics used for this analysis were housing type, homeownership type, and employment status.

For comparing the mean values between groups, for instance between males and female, one-way ANOVA tests that statically verify mean differences between groups were conducted. Table 11 shows mean difference test results. F values represent differences of mean values between the groups, for instance between males and females, or between owners and renters. P-values represent the significant level of the results. Higher F-values and lower p-values show significant differences between compared two groups.

(1) Gender and Resident Opinions

Residents’ opinions on the seven new urbanism design principles were examined based on differences regarding gender. Results showed that female residents indicated higher importance levels on five principles than male residents. Those five principles were walkable environments, public transportation, downtown revitalization, wildlife and natural environment preservation, energy efficient and affordable housing design, and child friendly residential environments. For the other two principles of downtown revitalization and providing more open space and sport facilities, males indicated higher importance levels than females (see Figure 3).

These mean value differences between male residents and female residents were statistically significant for the issues of walkable environments ($F = 7.141, p < .01$), public transportation services ($F = 6.811, p < .01$), and downtown revitalization ($F = 14.776, p < .001$). Females strongly emphasized walkable environments and public transportation services and males strongly emphasized downtown revitalization (see Table 11).



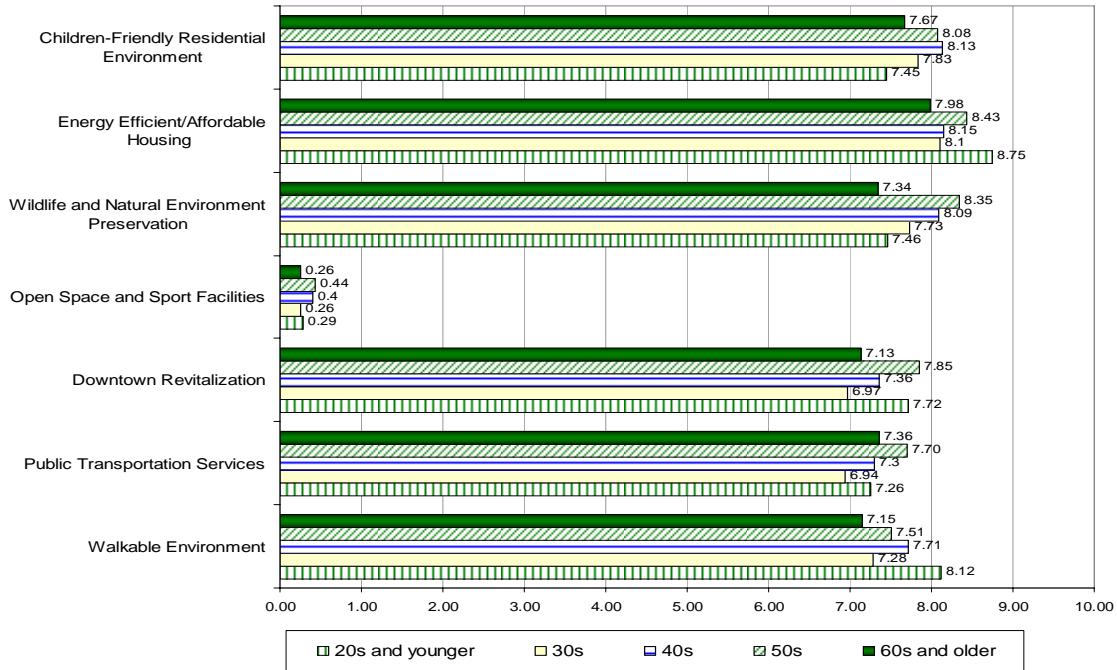
Legend: 0 Not at all important ----- 10 Very important

Figure 3. Mean Difference in Seven Principles Depending on Gender

(2) Age and Resident Opinions

To analyze residents’ opinions according to their age, five age groups were created: 20s or younger, 30s, 40s, 50s and 60s and older, and verified if residents’ opinions on the seven new urbanism principles would differ depending on their age. The results showed that Michigan residents’ opinions were different depending on their age. The residents in their 20s or younger indicated a higher importance level for walkable environments (= 8.12) and energy efficient and affordable housing design (= 8.75) than the other age groups. The residents in their 40s indicated a higher importance level of child-friendly residential environments (=8.13) than any other age groups. The residents in their 50s indicated a higher importance level for four design principles than any other age groups: public transportation services (=7.70), downtown revitalization (=7.85), more open space and sports facilities (=0.44), and wildlife and natural environment preservation (=8.35). The residents in their 30s or 60s and older indicated a higher importance level for energy efficient and affordable housing design than the other principles (see Figure 4).

The analysis result from one-way ANOVA test showed that the mean differences between the age groups were significant in the following six issues: walkable environment ($F = 5.040, p < .005$), downtown revitalization ($F = 4.395, p < .005$), more parks and sports facilities ($F = 3.471, p < .01$), wildlife and natural environment preservation ($F = 5.530, p < .001$), energy efficient and affordable housing design ($F = 3.681, p < .001$), and child-friendly residential environment design ($F = 3.096, p < .05$) (see Table 11).



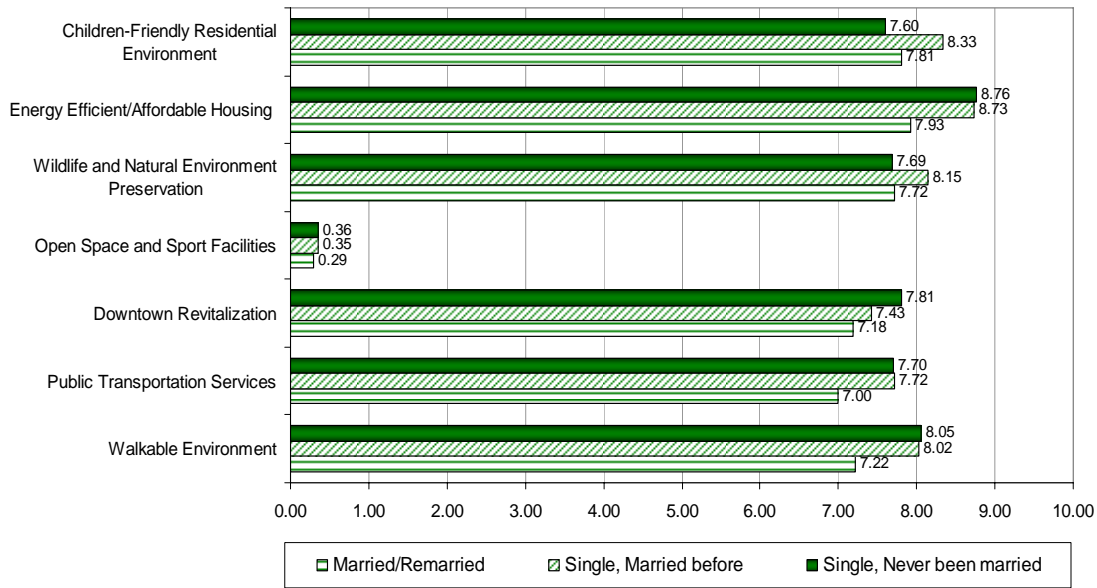
Legend: 0 Not at all important ----- 10 Very important

Figure 4. Mean Difference in Seven Principles Depending on Age

(3) Marital Status and Resident Opinions

Marital status seemed to influence Michigan residents’ opinions on the seven new urbanism principles. Marital status was divided into three types: currently married/remarried, single but having been previously, and single having never been married.

Unmarried singles showed higher mean values in the importance level of four new urbanism principles than respondent who were, or had been, married: walkable environment (=8.05), downtown revitalization (=7.81), more open space and sports facilities (=0.36), and energy efficient and affordable housing design (=8.76) (see Figure 5). For public transportation services, single residents who have been married but divorced, separated, or widowed indicated higher importance level (=7.72) than the other two groups. The mean differences between unmarried singles, previously married singles, and married residents were significant in five issues including walkable environments ($F = 13.158, p < .001$), public transportation services ($F = 9.400, p < .001$), downtown revitalization ($F = 6.408, p < .005$), energy efficient and affordable housing design ($F = 15.288, p < .001$), and child-friendly residential environments ($F = 4.446, p < .05$) (see Table 11).

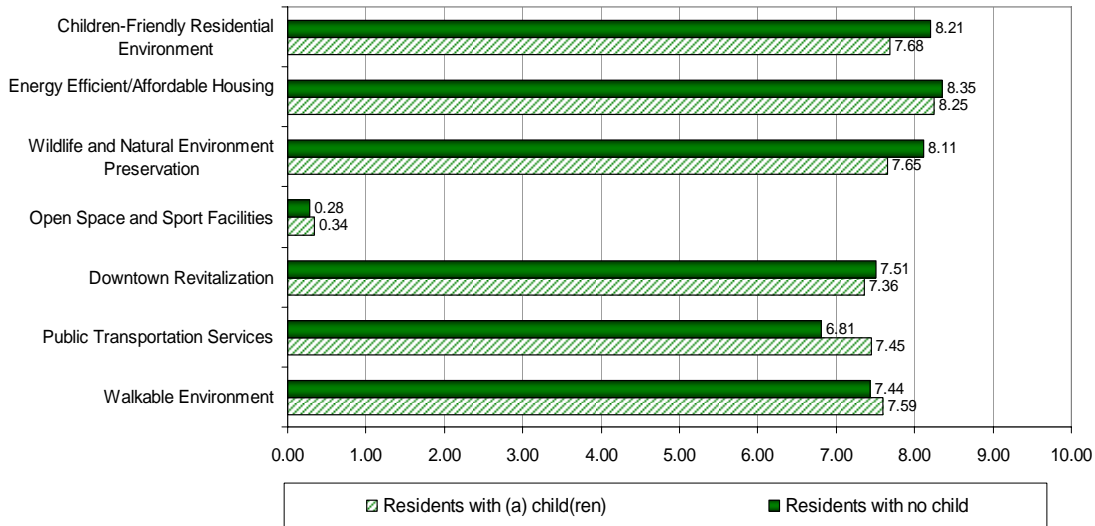


Legend: 0 Not at all important ----- 10 Very important

Figure 5. Mean Difference in Seven Principles Depending on Marital Status

(4) Number of Children and Resident Opinions

This study also verified if having a child age 4 to 12 in a family influenced their opinions on the importance level on the seven design principles in their community planning. The residents with children 4 to 12 years old indicated a higher importance level for five principles than the residents with no child. The five principles were downtown revitalization (=7.51), wildlife and natural environment preservation (=8.11), energy efficient and affordable housing design (=8.35), and child friendly residential environment design (=8.21) (see Figure 6). The mean differences of importance levels between these two groups were significant in the three design principles: public transportation services ($F = 11.833, p < .005$), wildlife and natural environment preservation ($F = 6.684, p < .05$), and child-friendly residential environment design ($F = 10.289, p < .005$) (see Table 11).



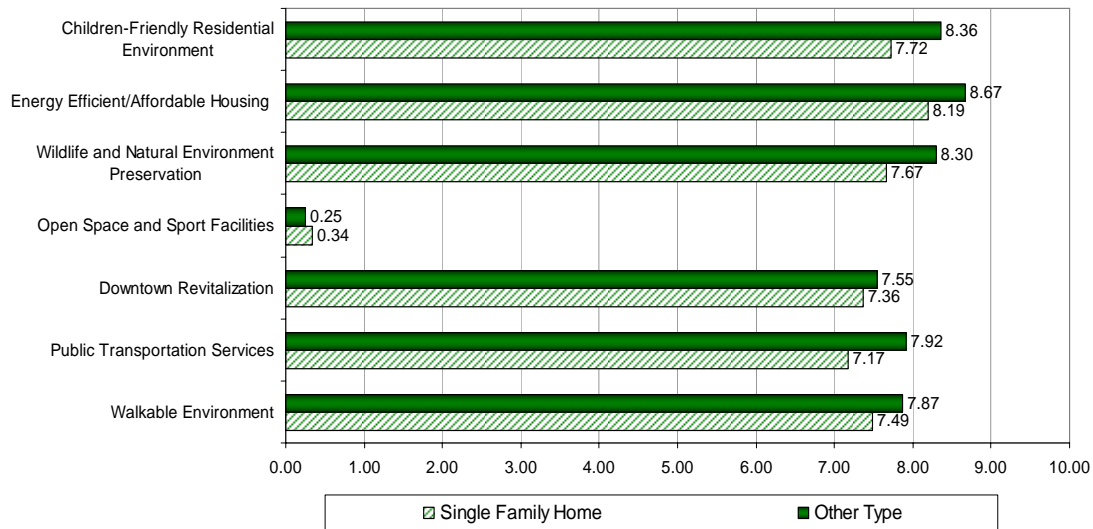
Legend: 0 Not at all important ----- 10 Very important

Figure 6. Mean Difference in Seven Principles Depending on Number of Children

(5) Housing Type and Resident Opinions

To analyze residents' opinions according to their housing type, two housing type groups were created: single family homes and the other types including duplexes, condominiums, modular/mobile/ manufactured homes, apartments, or townhomes. Single family home residents showed overall lower mean values than residents in the other category for the importance level of the new urbanism principles - except more open space and sports facilities (see Figure 7).

One-way ANOVA test results showed that the mean differences between single family home residents and non-single family home residents were significant in the four issues of public transportation services ($F = 11.633, p < .005$), wildlife and natural environment preservation ($F = 8.656, p < .005$), energy efficient and affordable housing design ($F = 5.552, p < .05$) and child-friendly residential environment design ($F = 10.543, p < .005$) (see Table 11). In other words, non-single family home residents indicated higher importance levels for those design principles. This result shows that the residents living in non-single family homes have higher demands for better community design and planning than single family home residents. It might be because their current residential environment conditions are not satisfactory to them.



Legend: 0 Not at all important ----- 10 Very important

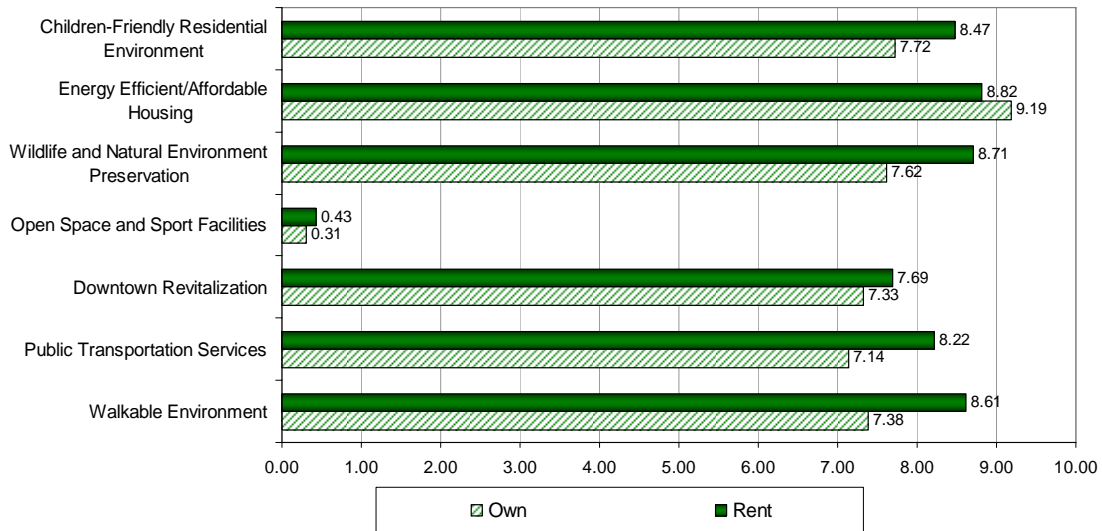
Figure 7. Mean Difference in Seven Principles Depending on Housing Type

(6) Homeownership Type and Resident Opinions

Homeownership types were divided into two categories: homeowners who pay any type of mortgage and renters. Michigan residents’ opinions on the seven new urbanism principles were different depending on their homeownership type. Renters showed overall higher mean values in the importance level of seven principles than homeowners (see Figure 8).

The analysis result from one-way ANOVA test showed that the mean differences between homeowners and renters were significant in all seven issues. Their mean differences between renters and homeowners were especially large in the issues of walkable environments ($F = 30.621, p < .001$), public transportation services ($F = 22.242, p < .001$), wildlife and natural environment preservation ($F = 24.011, p < .001$), energy efficient and affordable housing design ($F = 8.896, p < .005$), and child-friendly residential environment design ($F = 13.387, p < .001$).

In other words, renters indicated much higher importance levels than homeowners for these design principles. Homeownership type is closely related to their housing types. Non-single family home residents showed higher mean values in the importance level of overall design principles. Likewise, renters showed higher mean values than home owners who possibly reside in single family homes (see Table 11).

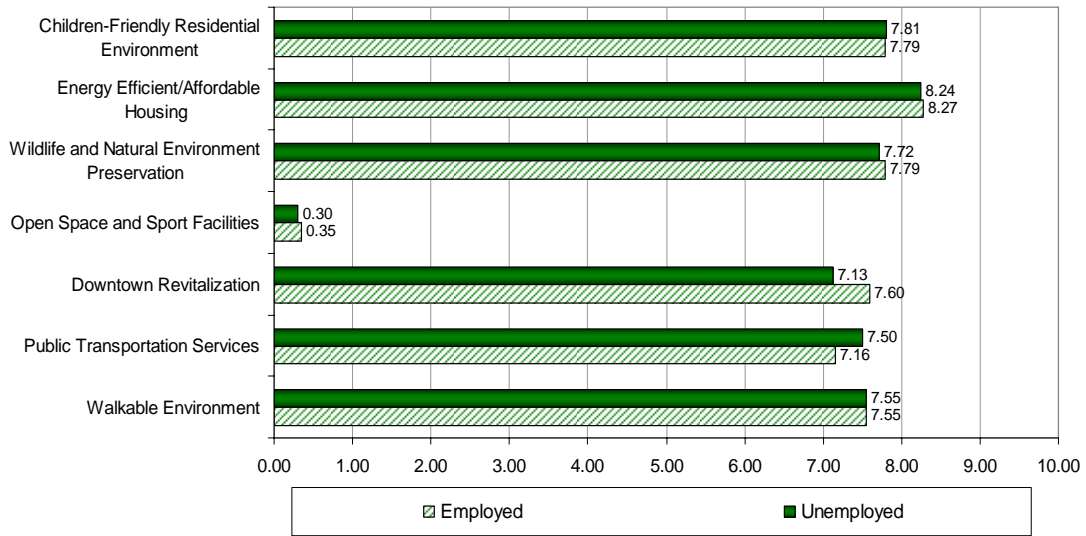


Legend: 0 Not at all important ----- 10 Very important

Figure 8. Mean Difference in Seven Principles Depending on Homeownership Type

(7) Employment Status and Resident Opinions

To analyze residents' opinions according to their employment status, two employment type groups were created: the employed with a full time job, part time job, or self employment, and the unemployed such as full time students, retirees, homemakers, and the disabled. There were slight differences in their mean values, but the differences were not significant based on the mean difference tests (see Table 11). The employed residents showed slightly higher mean values for downtown revitalization (=7.60), more open space and sports facilities (=0.35), wildlife and natural environment preservation (=7.79), and energy efficient and affordable housing design (=8.27). The unemployed residents showed slightly higher mean values for public transportation (=7.50) and child-friendly residential environment design (=7.81). For walkable environment, mean values of these two groups were same (see Figure 9).



Legend: 0 Not at all important ----- 10 Very important
 Figure 9. Mean Difference in Seven Principles Depending on Employment Status

(8) Summary of Resident Opinions Difference According to Their Characteristics

Table 11 shows the mean values of each resident group for the seven new urbanism design principles and the results from one-way ANOVA mean difference tests. As mentioned earlier, F values represent the differences of mean values between the groups, for instance between males and females, or between owners and renters. P-values represent the significant level of the results. Lower p-values have more significant meanings.

Table 11. Mean Value Differences between the Resident Groups for Seven Design Principles

		N	Walkable environment	Public Transportation Services	Downtown Revitalization	More Open Space & Sports Facilities	Wildlife and Natural Environment Preservation	Energy Efficient and Affordable Housing	Child-Friendly Residential Community
Gender	Male	486	7.34	7.08	7.69	0.35	7.71	8.24	7.70
	Female	515	7.76	7.50	7.10	0.30	7.82	8.29	7.94
	F	-	7.141	6.811	14.776	1.133	0.466	0.112	2.782
	p-value	-	.008	.009	.000	.287	.495	.738	.096
Age	20s	206	8.12	7.26	7.72	0.29	7.46	8.75	7.45
	30s	202	7.28	6.94	6.97	0.26	7.73	8.10	7.83
	40s	211	7.71	7.30	7.36	0.40	8.09	8.15	8.13
	50s	155	7.51	7.70	7.85	0.44	8.35	8.43	8.08
	60s and older	222	7.15	7.36	7.13	0.26	7.34	7.98	7.67
	F	-	5.040	1.976	4.395	3.471	5.530	3.681	3.096
	p-value	-	.001	.096	.002	.008	.000	.006	.015
Housing Type	Single Family	843	7.49	7.17	7.36	0.34	7.67	8.19	7.72
	Non-single family	156	7.87	7.92	7.55	0.25	8.30	8.67	8.36
	F	-	3.087	11.633	0.820	2.416	8.656	5.552	10.543
	p-value	-	.079	.001	.365	.120	.003	.019	.001
Homeownership Type	Own	854	7.38	7.14	7.33	0.31	7.62	8.19	7.72
	Rent	141	8.61	8.22	7.69	0.43	8.71	8.82	8.47
	F	-	30.621	22.242	2.648	4.597	24.011	8.896	13.387
	p-value	-	.000	.000	.104	.033	.000	.003	.000
Marital Status	Married	591	7.22	7.00	7.18	0.29	7.72	7.93	7.81
	Single, married before	124	8.02	7.72	7.43	0.35	8.15	8.73	8.33
	Single, never married	278	8.05	7.70	7.81	0.36	7.69	8.76	7.60
	F	-	13.158	9.400	6.408	1.437	1.659	15.288	4.446
	p-value	-	.000	.000	.002	.238	.191	.000	.012
Number of Children	With no child	743	7.59	7.45	7.36	0.34	7.65	8.25	7.68
	With (a) child(ren)	252	7.44	6.81	7.51	0.28	8.11	8.35	8.21
	F	-	0.753	11.833	0.727	1.253	6.684	.385	10.289
	p-value	-	.386	.001	.394	.263	.010	.535	.001
Employment Status	Employed	550	7.55	7.16	7.60	0.35	7.79	8.27	7.79
	Unemployed	420	7.55	7.50	7.13	0.30	7.72	8.24	7.81
	F	-	0.002	4.238	8.826	1.638	0.177	0.061	0.017
	p-value	-	.979	.040	.003	.201	.674	.804	.897

Non-responses were not included.

The highlighted cells are statistically significant.

6. Business Owners' Opinions

Core design considerations for new urbanism are pedestrian friendly design, public transportation, downtown revitalization through renovating old buildings or mixed-use developments, energy efficient building and community design, more open space design and sports facilities for encouraging social activities of residents, and so on. Downtown areas in Lansing and adjacent cities have recently been regenerated through replacing obsolete buildings with new mixed-use developments.

Ten business owners located in these areas were interviewed to investigate their opinions on pedestrian-friendly environment, public transportation services, downtown revitalization, more sports and entertainment facilities design, and building and façade design for attracting more people. The target areas for the interviews were a mixed-use development in the Stadium District in Lansing (see Figure 10), the downtown area in Mason (see Figure 11), and mixed-use developments in East Lansing.



Figure 10. A Mixed-Use Development in the Stadium District, Lansing
(Photos by Authors)



Figure 11. Retail Businesses in Downtown in Mason (Photos by Authors)

Interviews were conducted from January 26, 2009 to April 15, 2009. Approximately 25 business owners were contacted by walk-in visits. Once given the overall explanation regarding the interview purpose and contents, business owners were asked if they would participate in the interviews. Finally ten business owners agreed to be interviewed. They were interviewed in their stores with a standardized questionnaire.

6.1 Demographic Characteristics of Business Owners

The ten business owners interviewed consisted of five males and five females. The majority of participants were in their 20s (=40.0%), but others all fall in a diverse range of ages including 30s (=20.0%), 40s (=20.0%), 50s (=10.0%) and 60s or older (=10.0%). Of the disclosed information seven of the participants identified themselves as white.

Five business owners have their stores in East Lansing, three owners in Mason, and two owners in Lansing. Their business types were various; five retail business owners, two coffee shop owners, one salon owner, one art gallery owner, and one event planning business owner. With the given information the business owners' monthly taxable income was various from under 999 dollars to more than \$5,000. Among the ten business owners, two of them resided in Mason, two in Lansing, and two in Okemos. The others resided in Eaton Rapids, Holt, Bath, and Dewitt respectively.

Table 12. General Characteristics of Business Owners Interviewed

General Characteristics		Frequency	Percentage (%)
Gender	Male	5	50.0
	Female	5	50.0
	Subtotal	10	100.0
Age	20s	4	40.0
	30s	2	20.0
	40s	2	20.0
	50s	1	10.0
	60s and older	1	10.0
	Subtotal	10	100.0
Race	White/Caucasian	7	70.0
	Non-white	0	0
	Not disclosed	3	30.0
	Subtotal	10	100.0
Business Location	Mason	3	30.0
	Lansing	2	20.0
	East Lansing	5	50.0
	Subtotal	10	100.0
Business Type	Retail	5	50.0
	Salon	1	10.0
	Coffee Shop	2	20.0
	Event Planner	1	10.0
	Art Gallery	1	10.0
	Subtotal	10	100.0
Monthly Income	\$5000 & above	1	10.0
	\$3000 - \$4999	1	10.0
	\$1000 - \$2999	1	10.0
	\$999 & below	2	20.0
	Not Disclosed	5	50.0
	Subtotal	10	100.0
Residency	Mason	2	20.0
	Eaton Rapids	1	10.0
	Holt	1	10.0
	Bath	1	10.0
	Lansing	2	20.0
	Okemos	2	20.0
	Dewitt	1	10.0
	Subtotal	10	100.0

6.2 Business Owners' Opinions on New Urbanism Principles

It was investigated if the new urbanism design principles would be helpful for business operation in their cities. Business owners were asked to rank the importance level of a pedestrian friendly environment, public transportation services, downtown revitalization, sports and entertainment facilities, and building and façade design, for the purpose of operating their businesses and increasing visitors around their business areas. Among these issues, all business owners strongly agreed with the importance of a pedestrian friendly environment for improving their businesses (Mean=10.0). They indicated that pedestrian friendly environments around their business location would increase the number of visitors and customers. The majority of business owners (=50.0%) believed that dynamic economic activities in the city and pedestrian friendly environments such as having more sidewalks in the downtown were directly related.

The next most important issue for their businesses was building more attractive façades for inviting more customers (Mean=9.8). Nine of them strongly agreed that the building where their business is located should be designed with pedestrian-welcoming façade. Building façade design could also provide pedestrian friendly environments, thus these two issues are associated with each other. From the disclosed information, some of them have renovated their store façade since they opened. They strongly agreed with the positive influence of building façade renovation on attracting more customers. However, even those who have not upgraded their store façade strongly agreed with the positive relationships between increased economic activity in the city and attractive building and façade design.

The third most important issue for their businesses was building more sports and entertainment facilities around their business location. The majority of business owners believed that the density of entertainment or sports facilities was directly related to increased economic activity: i.e. they expect that more sports and entertainment facilities will increase the number of visitors and customers around their businesses.

For the issue of public transportation, the business owners suggested providing convenient public parking lots around their businesses rather than providing more frequent bus services. Only four of them strongly agreed with the relationship between dynamic economic activities in the city and providing good public transportation. The majority of them did not expect public transportation service improvement to be helpful for their businesses.

For the issue of downtown revitalization, there was a critical difference in business owners' opinions depending on their business locations. The business owners in Lansing and Mason showed very strong support for downtown revitalization while the business owners in East Lansing did not strongly agree with this issue. The business owners in Lansing and Mason, however, also emphasized the importance of preserving historic districts and buildings in their cities while under downtown revitalization. Even though the city needs to keep revitalizing the downtown area, they indicated that the buildings and streets with historic value should be preserved. The business owners in East Lansing, a small campus city for Michigan State University, emphasized the consideration of preserving current pedestrian-friendly environment rather than revitalizing downtown in the city.

In addition, the interview questions investigated how the business owners thought about the city’s involvement in each issue. Many of them leaned towards the city investing in creating pedestrian-friendly environments (=6.70), revitalizing old downtown (=7.30), building more sports and entertainment facilities (=6.10), and supporting building and façade upgrade (=5.70). They did not strongly lean towards the city investing in providing better public transportation services (=4.40). This result did not go with the results from the resident survey.

The last question of the interview was to investigate if the business owners are willing to pay more taxes for improving the pedestrian-friendly environments, downtown revitalization, more sports and entertainment facilities, and building and façade design. It seemed to be a critical issue for them. Four of them did not want to pay, two of them were willing to pay more taxes, but the others showed mixed feelings about it. The overall opinions on paying more taxes were very negative.

Business owners’ opinions on the importance level of the five new urbanism principles are presented in Table 13. Their opinions on paying more taxes are presented in Table 14.

Table 13. Business Owners’ Opinions on the Five New Urbanism Principles

Principles	Mean	Graphs with Mean Values
Pedestrian friendly environment		
Providing pedestrian friendly environments will help their business	10.0	
The City needs to invest in creating pedestrian friendly environments for business owners around this area	6.7	
Public Transportation		
Providing good public transportation services would help their business have more customers	6.6	
The City needs to invest in providing good transportation for business owners	4.4	
Downtown Revitalization		
Revitalizing old downtown areas could help their business have more customers	4.2	
The City needs to invest in revitalizing old downtown areas for business owners	7.3	
Sports and Entertainment Facilities		
Providing more entertainment facilities or sports facilities around their business location would help their business have more customers	8.1	
The City needs to invest in revitalizing old downtown areas for sports or entertainment facilities	6.1	
Building and Façade Design		
The building where their business is located should be designed with pedestrian-welcoming façade	9.8	
The city needs to invest in designing more attractive buildings for business owners	5.7	

Legend: 0 Not at all important ----- 10 Very important

Table 14. Willingness to Pay More Taxes for the Above Environment in Their Cities

Question	Item	Frequency	Percent (%)
If you need to pay more taxes to the city for pedestrian-friendly environments, mixed-use developments, public transportation services in the downtown area, are you willing to pay more taxes having those environments?	No Answer	1	10.0
	Yes	2	20.0
	No	4	40.0
	Varies	3	30.0
Comments	<ul style="list-style-type: none"> - Chamber needs to work together and remove the private agenda. Economic developers should work between chamber and business owners. - Depends on the taxes and how it is implemented. Government wastes tax payers' money. If they create a tax specifically for that implementation, then I can support it. - Depends on effective the plans are, but probably yes. - If it is for the revitalizing of old buildings, I would. 		

7. Urban Planners' Input

A survey of planners was conducted through surveymonkey.com, a web-based survey tool, to explore their opinions on major new urbanism principles. A total of 77 urban planners identified by the Tri-county Regional Planning Commission of Michigan were asked to participate in the survey. Email messages including survey link and general information were sent in late April, 2009, to those 77 planners working for state and municipal governments in Michigan. Email messages were sent three times. Finally 17 planners responded to the survey by May 25th, 2009.

7.1 Demographic Characteristics of Planner Participants

Among the 17 planner respondents, nine of them were females and eight were males. Eight of them were in their 30s. The average work experience at their current positions was 5.85 years and 14 respondents had other planning experiences than their current positions. Their specialty in planning was diverse including land use, housing, economic development, environmental planning, transportation planning, and urban design (see Table 15).

Table 15. General Characteristics of Urban Planner Participants

General Characteristics		Frequency	Percentage (%)
Gender	Male	8	47.1
	Female	9	52.9
	Subtotal	17	100.0
Age	20s	4	23.5
	30s	8	47.1
	40s	3	17.6
	50s	1	5.9
	Subtotal	17	100.0
Race	Land use	8	47.1
	Housing	2	11.8
	Economic Development	2	11.8
	Environmental Planning	2	11.8
	Transportation Planning	1	5.9
	Urban Design	1	5.9
	Utility Management	1	5.9
	Subtotal	17	100.0

7.2 Urban Planners’ Opinions on New Urbanism Principles

(1) Pedestrian Friendly Environment

Urban planners were asked to evaluate four aspects of pedestrian friendly environments in their jurisdiction: general condition of pedestrian environments, connectivity among pedestrian facilities, safety, and condition of amenities. The results of planners’ opinions on the pedestrian facilities in their jurisdictions were closer to satisfaction. Most of the planners showed positive evaluations for the condition of connectivity among pedestrian facilities. There were also many respondents who were dissatisfied with the pedestrian facilities in their jurisdiction.

Their suggestions for improving connectivity among pedestrian facilities included requiring sidewalks in new developments and adding sidewalks to the neighborhoods or communities without sidewalks. Urban planners also emphasized the importance of safe pedestrian network connectivity.

Their opinions for pedestrian safety included increasing connectivity, providing more pedestrian and bicycle facilities such as lighting, pavement, and separating pedestrian facilities from vehicles. One of the suggestions for improving the amenities for pedestrians and cyclists was avoidance of old-fashioned and standardized design of pedestrian facilities. Some planners also suggested a unified landscape code for creating safe and convenient pedestrian-friendly environments.

(2) Public Transportation

The planners' satisfaction level with the overall public transportation service in their jurisdiction was similar to that of the pedestrian environments. They did not agree that frequency of bus services is sufficient.

Regarding the major issue of public transportation in their jurisdictions, they indicated the high fare of public transportation. They argued that the cost of operating private vehicle is too expensive, thus the fare of public transportation cannot compete with the cost of driving a car. Therefore, passengers choose to drive instead of using public transportation. Other planners suggested small buses instead of current mega-buses, more frequent bus service, and quality improvement in bus stop facilities.

(3) Downtown Revitalization

The planners had strong confidence that downtown revitalization could solve sprawl problems and revitalize depressed downtowns. Only one respondent gave a negative answer to this question. Most planners also said that many local and municipal governments reflected the revitalization and redevelopment programs in master plans and policies. If not, they plan to consider the revitalization and redevelopment in near future.

(4) Energy Efficiency

According to the urban planners participating in the survey, a few recent buildings began to consider the LEED (Leadership in Energy and Environmental Design) certification. Most buildings in the jurisdictions have not seriously considered energy efficiency. However, many governments are currently strongly encouraging the buildings in their jurisdiction to be certified by LEED or by LID (Low Impact Development) construction.

Planners emphasized that there were no specific energy related regulations or codes for community development. Even though a number of developers have built residential communities or commercial facilities based on the smart growth principles and new urbanism concepts, those were not enough and their effects were easily reduced or canceled due to the financial status of the builders. Initial trials could not be successful in the absence of more systematic governmental support at federal or local government level. Planners, therefore, suggested state and local government-based regulations and incentives to increase smart growth and new urbanist developments.

Public transportation usage as an energy saving effort for their communities was also investigated. Planners were asked to indicate the level of agreement with the question, "How much do you agree that the citizens living in your jurisdiction use public transportation more often than in surrounding jurisdictions, if you jurisdiction has public transportation system?" Planners opinions were clearly divided into two parts: strongly disagree or strongly agree. Some areas having many college students agreed that their jurisdiction 'used public transportation more often than in surrounding jurisdictions', but, other respondents disagreed with this statement. Table 16 shows urban planners' opinions on each new urbanism principle and related issues.

For the last question, planners were asked to indicate the prioritized strategies among five new urbanism planning principles to improve their jurisdiction. The five principles included

pedestrian friendly environments; good public transportation; revitalizing old downtown areas; energy efficient building design, community design, and transportation planning; and mixed-use development and diversity. The most important principle indicated by the planners was mixed-use development and diversity (Mean order= 2.38 out of 5 principles), the second important principle was downtown revitalization (Mean order=2.56 out of 5 principles), and the third important principle was pedestrian friendly environments (Mean order=2.94 out of 5 principles). The principles of good public transportation and energy efficiency were least important among the five principles. For the application of new urbanism in Michigan, this order should be considered. The investment and share of public funds should also be considered alongside these results.

Table 16. Planners' Evaluations on Their Jurisdictions

Principles	Mean	Graph
Pedestrian friendly environment		
General condition of pedestrian environments	6.41	
Condition of connectivity among pedestrian facilities	6.35	
Safety of the pedestrian facilities	6.29	
Condition of amenities along the pedestrian facilities	6.47	
Public Transportation		
General quality of public transportation service	6.24	
Numbers and length of bus routes	6.60	
Frequency of bus services	5.93	
Downtown Revitalization		
Proactive towards downtown revitalization	7.47	
Downtown revitalization and urban redevelopment could prevent urban sprawl and improve downtown condition	9.18	
Jurisdiction needs to change zoning ordinance to improve/promote mixed used development	6.18	
Energy Efficiency		
Considers energy efficient design for buildings, communities, and transportation	6.71	
Buildings in the jurisdiction are designed energy-efficiently	5.35	
Residential communities are designed to be energy-efficient	4.59	
Use public transportation more often than in surrounding jurisdictions	5.63	

Legend: 0 Very Bad or Strongly Disagree ----- 10 Very Good or Strongly Agree

Table 17. Most Important New Urbanism Principle for Making Their Jurisdiction Better

New urbanism principles	Mean Value of Indicated Order
Mixed-use development and diversity	2.38
Revitalizing old downtown areas	2.56
Pedestrian-friendly environments	2.94
Energy efficient building design, community design, and transportation planning	3.31
Good public transportation	4.19

Legend: 1. Most Important ----- 5. Least Important

8. Policy Recommendations

This study explored how the design and planning principles of new urbanism could be applied in designing new communities and regenerating old communities in the State of Michigan. This study focused on the following new urbanism principles: walkable environment, public transportation services, downtown revitalization, open space and sports facilities, wildlife and natural environment preservation, energy efficient and affordable housing design, child-friendly residential environments, mixed-use developments, and pedestrian-friendly building design. This study explored cases of community design and related programs in Michigan, investigated the opinions of Michigan residents and business owners, and investigated planners’ opinions on the new urbanism principles.

Based on the findings and discussions from these diverse cases and survey perspectives, it was determined that the design and planning principles of new urbanism are associated with a wide range of policies. Those include important categories such as transportation planning, land use policy, environmental planning, housing, energy saving, and many other planning issues.

1. Transportation Planning: Walkable Environments & Public Transportation Services

One of the core design principles from new urbanism is providing walkable environments. Creating walkable environments in downtowns, neighborhoods, from home to school, and from home to workplace has been strongly supported by Michigan residents, business owners, and urban planners. Policy makers need to improve their efforts in creating pedestrian friendly walkable environments with sufficient connectivity, safety, and affluent amenities.

From the State of the State Survey, it was found that the percentage of children using buses or walking to school is higher than the adults using buses or walking to work. This characteristic should be considered in developing policies for elementary education. For instance, some cities in Michigan have decided to close some number of neighborhood schools due to financial problems: but, this series of decisions could increase the number of children who use parents’ cars to get to school; instead of walking to school.

Improving public transportation services is strongly suggested by residents and urban planners. Providing more frequent bus service, more bus routes, offering appropriate costs for using buses, and improving the quality of bus stop facilities were all suggested. The systematic management of transit through arranging an appropriate number and size of buses based on user surveys is also suggested. The cities having more passengers need a higher number of buses and bigger buses. Otherwise, smaller buses could be replaced for saving management costs, fuel costs, and reducing air pollution. Reduced costs could make for more frequent services and increase the number of users. The ultimate strategy for motivating walkers, bicyclists, transit users is to prevent low-density developments in urbanized areas. In the low-density areas, citizens cannot go to work or shop by walking or bike, and transit operation will be different.

2. Land Use Policy: Old Downtown Revitalization & Mixed-Use Development

Old downtown revitalization could bring more dynamic economic and cultural activities to the Michigan cities. Residents expect more diverse activities in downtown through renovating old buildings or constructing new commercial or retail spaces. Business owners believe that downtown revitalization could bring more visitors and customers to their businesses. Planners also support old downtown revitalization for preventing suburban sprawl. However, policymakers need to remember that obsolete downtown revitalization should be planned alongside the preservation of historic heritages and cultural characteristics of the cities, as emphasized by business owners and planners.

Policymakers also need to learn that there have been critical risks associated with downtown revitalization. Without preparing rigorous market research that assesses post-revitalization effects and understanding target population's social, economic, and cultural characteristics, downtown revitalization could not be successful. Downtown revitalization needs clear and practical direction to attract the citizens who have left the city center over the decades. Downtown revitalization could also attract more visitors from adjacent cities, thus this should be planned holistically considering adjacent urban and suburban contexts.

Mixed-use development consisting of various types of facilities could bring diverse citizens to reside, entertain, or work in the inner city areas. To encourage mixed-use development and to provide higher density developments, planners need to consider revising zoning ordinances.

This includes not only mixed-use development buildings but also mixed-use communities as another policy direction this study suggests. New urbanism has been strongly supportive of mixed-use developments. Mixed-use developments consisting of residential, commercial, educational, and retail areas could also create walkable environments, more open spaces, more diverse social and economic activities for residents. However, as seen in Cherry Hill Village, the new urbanist community has been developed as an isolated community from existing urban communities, even though it is a combination itself of residential, educational, commercial, and retail areas. Thus this study suggests the cluster development of new urbanist communities that include more than one new urbanist community and connect with each other. Cluster development with more than one community could also be connected with existing inner cities, and provide more diverse types of housing, educational, commercial, and retail facilities. Cluster development of this type of new urbanist communities will improve walkability through creating regional networks of walking trails or bike lanes, reduce driving miles for shopping, working, or school, and eventually improve residential satisfaction.

3. Economic Development: Pedestrian-friendly Façade and Building Design

For business owners, attracting more customers to their businesses is closely related to their profit. Especially for small business owners who cannot afford to upgrade any physical conditions for their businesses, supportive programs from cities or local governments could be great incentives. The City of Mason, Michigan, has supported façade upgrades for many retail owners. It is suggested to establish some amount of loans or grants for helping small business owners upgrade façade, store interior, or building exterior.

4. Environmental Planning: Wildlife and Natural Environment Preservation

Wildlife and natural environment preservation was also strongly supported by Michigan residents and urban planners. Instead of providing more parks or sports facilities that could demolish the current wildlife and natural environment, Michigan residents and urban planners suggested preserving them. Policymakers need to collaborate with the Departments of Parks and Recreation in townships, cities, and the state, to efficiently handle this issue.

5. Housing and Energy Savings: Energy Efficient and Affordable Housing, Building, Community Design, Child-Friendly Residential Environment

In Michigan where the winter season is very long and cold, energy efficient and affordable housing design seems to be the most critical issue for individual residents. Urban planners also strongly support energy efficient building, housing, and community design in Michigan. The federal government has been paying attention to energy efficient housing design since 1990s. Based on that, there have been important actions made by non-profit organizations such as U.S. Green Building Council (USGBC). Though it is never easy to apply the standards suggested by USGBC for individual homes, the statewide efforts should be made to encourage builders and developers to achieve the standards of USGBC for new homes. For existing old homes, incentives such as loans or tax credits should be endowed for homeowners who renovate their homes by using energy efficient construction techniques, building materials, lighting equipment, heating and cooling systems such as solar panels and geothermal technique. Even though the federal government currently supports energy efficient equipment for homeowners who add this equipment to their current homes, this governmental support is still not insufficient and it should be intensified to create a more discernable effect.

Policymakers also need to pay attention to residents' desire for child-friendly residential environments. Whether they are young or not, whether they are married or not, Michigan residents emphasized the importance of child friendly residential environments that provide safe outdoor activities for children. Traditionally residential environments have been designed for adult homeowners. Housing values bringing more profit to them have been highlighted over designing neighborhood amenities such as playgrounds or parks for children or teens. It would be difficult to require at least one playground for every neighborhood, but policymakers could encourage builders and developers to consider children's safety in the neighborhood by providing even small amount of outdoor space for their safe activities. Policymakers also need to encourage subsidized housing projects to provide amenities for children's safe outdoor activities such as outdoor playgrounds. This could provide an opportunity of social equity for children living in low-income neighborhoods.

References

- Arnold, L.A. (2006) *Preservation Shore to Shore: Making Michigan competitive through historic preservation*, Michigan Department of History, Arts and Libraries, Lansing MI.
- Bassett, E.M, & Reardon, M. (2007). Land use and health: What role for extension? *Journal of Extension*, 45(5). Retrieved October 20, 2008 from <http://www.joe.org/joe/2007october/iw3.shtml>.
- Cherry Hill Village (2008). Cherry Hill Village. Retrieved October 25th, 2008, from <http://maps.google.com>.
- City of Lansing (2008). Master Plan Project. Retrieved June 20, 2008 from http://www.cityoflansingmi.com/pnd/planning/master_plan_project.jsp.
- Environmental Protection Agency (2008). *Brownfields and Land Revitalization*. Retrieved October 26th, 2008, from <http://epa.gov/brownfields/>.
- Google.map (2008). *Cherry Hill Village*. Retrieved July 30th, 2008, from <http://maps.google.com>.
- Kim, J., & Kaplan, R. (2004). Physical and psychological factors in sense of community: New urbanist Kentlands and nearby Orchard Village. *Environment and Behavior*, 36 (3), 313-340.
- Land Policy Institute of Michigan State University (2007). *Michigan mayor honored for promoting regionalism at annual MSU citizen planner academy*. Retrieved July 31st, 2008 from <http://www.landpolicy.msu.edu>
- Lansing Walking & Bicycling Task Force (2008). Walk and bike Lansing. Retrieved July 20th, 2008 from <http://www.walkbikelansing.com/index.html>.
- Litman, T. (2004). Economic value of walkability. *Transportation Research Record*, 1828, 3-11.
- Looney Ricks Kiss Architects Inc (2008). *Cherry Hill Village*. Retrieved August 30th, 2008, from <http://www.walkbikelansing.com/index.html>.
- Michigan Department of Environmental Quality (2008). *Brownfields - USTfields Database*, Retrieved October 25th, 2008, from <http://www.deq.state.mi.us/ustfields/default.asp>.

Michigan Department of History, Arts and Libraries (2008). *Michigan Main Street Program*. Retrieved October 25th, 2008, from http://www.michigan.gov/hal/0,1607,7-160-17449_18638_34474---,00.html

Michigan State Housing Development Authority (2008). *Main Street Program*. Retrieved June 20, 2008, from http://www.michigan.gov/mshda/0,1607,7-141-45746_47326---,00.html

Plas, J. M., & Lewis, S. E. (1996). Environmental factors and sense of community in a planned town.

American Journal of Community Psychology, 24, 109-143.

Song, Y. & Knaap, G. (2003). New urbanism and housing values: A disaggregate assessment.

Journal of Urban Economics, 54, 218–238.

The Congress for the New Urbanism (1993). Charter of the New Urbanism. Retrieved January 31, 2007 from <http://www.cnu.org>.

Appendix 1.: Glossary

Walkable environments:

Walkable environments are neighborhood, community, or city environments that support residents' recreational and non-recreational walking behaviors. Streets and roads in cities, towns, and neighborhoods should be comfortably wide, safe for walking, reasonably distanced from traffic, and connected. Sometimes, bike lanes are designed alongside walking paths.

Public transportation services:

The major public transportation service in this study indicates bus services. New urbanism emphasizes the need of public transit between communities, between a local community and the civic center, and the like. This study explores the needs of residents, business owners, and planners for better bus services.

Downtown revitalization:

Many communities have made revitalization efforts to renew downtown areas and restore them to expand business, employment, and shopping opportunities. This study focuses on the efforts to regenerate obsolete buildings, districts, or blocks to provide more business, shops, and housing.

Open space and sports facilities:

Open space includes playgrounds, preserved landscape, natural lake, parks in communities. Sports facilities include baseball stadiums, tennis courts, or any outdoor spaces for diverse sports activities.

Wildlife and natural environment preservation:

New urbanism supports higher population density and discourages suburban sprawl. This can reduce the destruction of wildlife and natural environment. In addition, minimizing suburban sprawl shortens commuting distance and helps to reduce traffic-induced air pollution.

Energy efficient and affordable housing design

Housing design with low-energy consumption and low-maintenance costs should be considered. Houses having appropriate insulations, facing south for more daylight, and using energy saving techniques are examples. One of the purposes of new urbanism is to minimize unnecessary use of resources and energy. New urbanist communities are designed to save energy for both site design and building design. The size of housing is usually smaller than in conventional neighborhoods.

Child-friendly residential environment design

Child-friendly residential environment design considers outdoor spaces for children's physical activities. The examples are playgrounds, neighborhood parks, or fitness spaces. Children should also be protected by accidents or crime while they are playing in their neighborhoods.

Mixed-Use development

Mixed-use development means mixed-use buildings or mixed-use land development. Mixed-use buildings will include different types of facilities in a building project. For instance, a mixed-use building can have retail stores on the first floor and residential or office spaces on the second and third floors. Mixed-use land development will have various zonings in a land development project. A mixed-use community can include residential, commercial, and educational facilities in a community. Mixed-use development can prevent standardization of the conventional zoning system and provide diverse environments in a community.

Pedestrian-friendly building and façade design

Buildings facing to pedestrian roads and providing interesting façades are visually appealing and attract more people to stop and visit. Pedestrian-friendly building and façade design typically provides a warm and welcoming exterior color scheme, more windows and doors, and architectural interests. This appeal has been known to help business owners attract foot traffic and customers in and around their place of business.

Appendix 2:
SOSS in Spring 2009

This survey aims to explore Michigan residents' opinions on key design and planning principles of new urbanism.

Demographic Information

Gender, Age, Racial Group, Employment, Annual Income, & Residency (the Area they live in)

Questionnaire: Survey starts from here.

How are you today?
In this survey, we will ask about your opinions on several design and planning issues of your community. The purpose of this survey is to suggest better planning policy directions for your community design. Please consider your community including neighborhoods and city and respond to each question.

1. Do you live in a

- a. Town house
- b. Single-family house
- c. Condominium
- d. Apartment
- e. Other (explain) _____

2. Do you have children age 12 or under living with you?

- a. Yes
- b. No (skip # 3 and # 4)

3. If yes, how many children are living with you? _____

4. Is your children going to school by your car? By school bus? By riding a bike? By walking?

- _____
- a. Driving by the parent(s)
 - b. School bus
 - c. Bicycle
 - d. Walking
 - d. Others_____

5. Are you getting to your work place every morning by driving? By bus? By riding a bike?

By walking? _____

- a. Driving
- b. Bus
- c. Bicycle
- d. Walking
- d. Others_____

* Nowadays our community planners adapted various benefits from seven planning issues.

Those are 1) walkable environments, 2) convenient public transportation services, 3) revitalizing old downtown areas having new condominiums and stores, 4) providing residential areas having houses and playgrounds for children, 5) providing more open spaces such as parks or sports facilities for outdoor activities, 6) preserving wild life and natural environment, and 7) providing more affordable housing considering energy saving.

To make your current community more livable and sustainable, how important the following issues should be considered by community planners? Please rank each issue from 0 to 10.

6. Providing sidewalks to have walking friendly environments

(0) Not at all important ----- (10) Very important

7. Providing good public transportation services

(0) Not at all important ----- (10) Very important

8. Revitalizing old downtown areas having new condominiums and stores

(0) Not at all important ----- (10) Very important

9. Providing residential areas having houses and playgrounds for children

(0) Not at all important ----- (10) Very important

10. Providing more parks and sports facilities for outdoor activities

(0) Not at all important ----- (10) Very important

11. Preserving wildlife and natural environment

(0) Not at all important ----- (10) Very important

12. Supplying more affordable housing having less utility payment

(0) Not at all important ----- (10) Very important

Thank you so much for your participation.

**Appendix 3:
Interview Questionnaire for Business Owners**

**Interview: New Urbanism in Michigan:
Case Studies, Public Opinions, and Evidence-base Policy Suggestions**

PI: Suk-Kyung Kim, Ph.D. Assistant Professor, School of Planning, Design, & Construction
Co-PIs: Randy A. Bell, County Extension Director, Ingham County MSU Extension &
Jaechoon Lee, MUP, Transportation Specialist, Ohio State University

Purpose of the Interview

The proposed study aims to explore how design and planning principles of new urbanism could be applied in designing new communities and regenerating old communities in the State of Michigan. The purpose of this interview is to explore business owners' opinions on walkable streets, the transit-oriented community, downtown revitalization, and pedestrian-friendly commercial building design, and to suggest policy directions for making the community environment better for business owners.

I. Demographic Information

1. Gender,
2. Age: 20s 30s 40s 50s 60s and older
3. Racial Group,
4. Business Type:
5. Business Location: Address
6. Monthly Income
7. Residency: Which city are you living in? _____

II. New Urbanism and Managing your Business in Lansing

Please indicate the level of agreement from 0 (strongly disagree) to 10 (strongly agree).

1. Pedestrian Friendly Environment

1) How much do you agree that **providing pedestrian friendly environments around your business location would help your business have more customers?**

(0) Strongly disagree ----- (10) Strongly agree

2) How do you think about the relationships between more dynamic economic activities in the city and providing pedestrian friendly environments such as having more sidewalks in the downtown area?

3) How much does the City need to invest in creating pedestrian friendly environments for business owners around this area?

(0) Never needs ----- (10) Extremely needs

2. Public Transportation

- 1) How much do you agree that **providing good public transportation** services such as more frequent bus services and more bus routes around your business location would help your business have more customers?
(0) Strongly disagree ----- (10) Strongly agree
- 2) How do you think about the relationships between more dynamic economic activities in the city and providing good public transportation services in the downtown area?
- 3) How much does the City need to invest in providing good public transportation for business owners in the city?
(0) Never needs ----- (10) Extremely needs

3. Downtown Revitalization

- 1) How much do you agree that **revitalizing old downtown areas by either renovating older buildings or constructing new condominiums and stores could help your business have more customers?**
(0) Strongly disagree ----- (10) Strongly agree
- 2) How do you think about the relationships between more dynamic economic activities in the city and revitalizing old downtown area by renovating older buildings or constructing new condominiums and stores?
- 3) How much does the City need to invest in revitalizing the downtown area for business owners in the city?
(0) Never needs ----- (10) Extremely needs

4. Sports and Entertainment Facilities

- 1) How much do you agree that **providing more entertainment facilities or sports facilities around your business location would help you have more customers?**
(0) Strongly disagree ----- (10) Strongly agree
- 2) How do you think about the relationships between more dynamic economic activities in the city and providing more entertainment facilities or sports facilities?
- 3) How much does the City need to invest in revitalizing the downtown area for sports or entertainment facilities in the city?
(0) Never needs ----- (10) Extremely needs

5. Building and Façade Design

- 1) How much do you agree that **the building where your business is located should be designed with pedestrian welcoming façade?**
(0) Strongly disagree ----- (10) Strongly agree

- 2) How many times have you upgraded your store façade since you started your business in the current location?
- 3) Do you think changing the building façade attract more customers to your store?
- 4) How do you think about the relationships between more dynamic economic activities in the city and attractive building and façade design?
- 5) How much does the City need to invest in designing more attractive buildings for business owners in the city?
 (0) Never needs ----- (10) Extremely needs

6. Which one is the most important to bring more economic activities in the city and more customers to your business? Please indicate the order of the importance. ___ ___ ___

- ___ ___
- a. Pedestrian friendly environments
- b. Good public transportation
- c. Revitalizing old downtown areas
- d. More entertainment facilities or sports
- e. Attractive Building and Façade Design

7. If you need to pay more taxes to the city for pedestrian-friendly environments, mixed-use developments, public transportation services in the downtown area, are you willing to pay more taxes having those environments?

Thank you so much for your participation.

Appendix 4:
Web-based Survey Questionnaire for Urban Planners

Interview: New Urbanism in Michigan:
Case Studies, Public Opinions, and Evidence-base Policy Suggestions

PI: Suk-Kyung Kim, Ph.D. Assistant Professor, School of Planning, Design, & Construction
Co-PIs: Randy A. Bell, County Extension Director, Ingham County MSU Extension &
Jaechoon Lee, MUP, Transportation Specialist, Ohio State University

Purpose of the Interview

The proposed study aims to explore how design and planning principles of new urbanism could be applied in designing new communities and regenerating old communities in the State of Michigan. The purpose of this interview is to explore planners' opinions on walkable streets, the transit-oriented community, downtown revitalization, and pedestrian-friendly commercial building design, and to suggest policy directions for making the community environment better for citizens.

I. Demographic Information (Please mark on the blank)

1. Gender: Male _____ Female _____
2. Your Age: 20s _____ 30s _____ 40s _____ 50s _____ 60s and older _____
3. Please write the name of the city or metropolitan area you are working for: _____
4. How many years have you been working in the current city: since _____ (month) _____ (year)
5. How many years have you been working as a planner (if different from the above period)
Since _____ (month) _____ (year)
6. What is your specialized area? If you have more than one, please number in the order of priority.
 - a. Housing _____
 - b. Transportation Planning _____
 - c. Land Use _____
 - d. Financing _____
 - e. Economic Development _____
 - f. Urban Design _____
 - g. Environmental Planning _____
 - h. other (please specify) _____

II. New Urbanism in Michigan

Please indicate the level of agreement from 0 (strongly disagree) to 10 (strongly agree). You need to consider the city for which you are working.

1. Pedestrian Friendly Environment

- 1) Please indicate the general condition of pedestrian environments (such as connectivity, safety, amenity etc) in the city for which you are working (We will call this as 'your city' from this point on). _____
(0) Very Bad ----- (10) Very Good

2) Please indicate the condition of connectivity among pedestrian facilities (ex, sidewalk, trails) in your city. _____

(0) Very Bad ----- (10) Very Good

3) Please indicate the safety of the pedestrian facilities in your city. _____

(0) Very Unsafe ----- (10) Very Safe

4) Please indicate the condition of amenities (ex: good landscape, pleasant to walk, or good view) along the pedestrian facilities in your city. _____

(0) Very Bad ----- (10) Very Good

5) As an urban planner, do you have any suggestions for improving the pedestrian environments in your city? If so, please explain below.

a) Connectivity:

b) Safety:

c) Amenity:

2. Public Transportation

1) Please indicate the general quality of public transportation service in your city and adjacent areas. _____

(0) Very Bad ----- (10) Very Good

2) Do you think that the numbers and length of bus routes is enough to be an alternative mode of automobile in your city and adjacent areas? (If your city has (a) bus service(s)) _____

(0) Not at all enough ----- (10) Enough

3) Do you think that the frequency of bus service(s) is enough to be an alternative mode of automobile in your city? _____

(0) Not at all enough ----- (10) Enough

4) As an urban planner, do you have any suggestions for raising the public transportation market share and improving the service quality? If so, please explain below.

3. Downtown Revitalization and Urban Redevelopment

1) How much do you agree that your city area is proactive for downtown revitalization? _____

(0) Very negative ----- (10) Very proactive

2) How much do you agree that revitalizing old downtown areas and urban redevelopment could

3) How much do you agree that your city needs to change zoning ordinance to improve mixed used development? _____
(0) Strongly disagree ----- (10) Strongly agree

4) Do you have any suggestions for improving and strengthening the downtown revitalization and urban redevelopment in your city and adjacent areas? If so, please explain below.

4. Energy Efficiency

1) How much do you agree that your city generally considers energy efficient design for buildings, communities, and transportation compared with other cities or metropolitan areas?

(0) Not at all consider ----- (10) Very much consider

2) In terms of building design, how much do you agree that the buildings in your city are designed energy-efficiently? _____
(0) Strongly disagree ----- (10) Strongly agree

3) Why do you think that? Please explain if your city has special regulation for energy efficient building design.

Reason:

4) In terms of community design, how much do you agree that the residential communities (including single and multi family homes) in your city are designed to be energy-efficient?

(0) Not at all consider energy efficiency -----(10) Strongly consider energy efficiency
for residential communities for residential communities

5) Why do you think that? Please explain if your city has special regulation for energy-efficiency.

Reason:

6) How much do you agree that the citizens living in your city use public transportation more often than in any other cities if your city has public transportation system? _____
(0) Strongly disagree ----- (10) Strongly agree

7) Why do you think that? Please explain if your city has collected any evidence to support your opinion.

Reason:

8) As an urban planner, do you have any suggestions for improving the energy efficiency for building design, community design, and transportation planning in your city? If so, please explain below.

5. Opinions

1) Which one should be considered most important for making your city better? Please indicate the order of the importance. ____ ____ ____ ____ ____ ____

- a. Pedestrian friendly environments
- b. Good public transportation
- c. Revitalizing old downtown areas
- d. Energy efficient building design, community design, and transportation planning
- e. Mixed-use development and diversity
- f. Other: please specify _____

2) If you have additional opinions regarding the above issues, please describe below.

Thank you so much for your participation.

MICHIGAN STATE
UNIVERSITY

Institute for Public Policy
and Social Research

College of Social Science
Michigan State University
321 Berkey Hall
East Lansing, MI 48824-1111
Phone:517-355-6672 Fax:517-432-1544
Web: www.ippsr.msu.edu
Email: ippsr-action@ssc.msu.edu

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