Greenways:

Improving The Quality of Life In Oakland County, Michigan

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Greenways: Improving The Quality Of Life In Oakland County, Michigan

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Abstract

This report provides a comprehensive literature review on greenways and how these type of linear spaces enhance the quality of life for communities in which they are located. The Paint Creek Trail in Oakland County, Michigan is used as a case study to demonstrate how the quality of life is improved for residents near greenways. The perceptual based survey results from 64 households is presented as evidence supporting this premise.

The report discusses and defines the modern-day greenway concept and its historical roots. Greenways are generally referred to as linear open spaces consisting of natural vegetation. They come in a variety of shapes and sizes, and usually connect natural areas and parks to each other. The State of Michigan is regarded as a major participant in the greenway movement. Overall, greenways are becoming very popular and recognized around the nation and world. Greenways are recognized as playing an important role in bringing nature and personal well-being back into cities, thereby increasing the quality of life for communities across the nation.

By enhancing the quality of life, greenways bring various types of benefits to communities in which they are located. These include recreational, cultural and educational, transportation, environmental and economic benefits.

Recreational benefits from greenways include increased opportunities for walking, biking, jogging and hiking. From a cultural and educational standpoint, greenways provide benefits by helping to develop a sense of place for communities by preserving historic districts, parks, and by providing wonderful places for learning about the earth's ecological processes. Greenways provide transportation benefits by creating alternative modes of travel, which helps curb pollution

from automobiles and eliminates the risks of biking or walking along dangerous roadways. Greenways bring environmental benefits to communities because they support natural systems and help people maintain contact with nature. Economically speaking, greenways provide numerous benefits to communities. These include positive impacts on property values, the promotion of tourism, and they help assist communities attract business and corporate relocation.

The Paint Creek Trail serves as an excellent example of a greenway that brings many benefits to the residents it serves, thereby increasing the quality of life in the area. A survey of 64 residents living near the trail revealed that it is regarded as a great asset to the area, and is used by many people for various recreational activities. The results of the survey demonstrate that the quality of life for residents living in Oakland County are positively impacted by the Paint Creek Trail.

Key words: landscape planning, environmental design, environmental psychology, urban planning, landscape architecture.

Section 1: Introduction

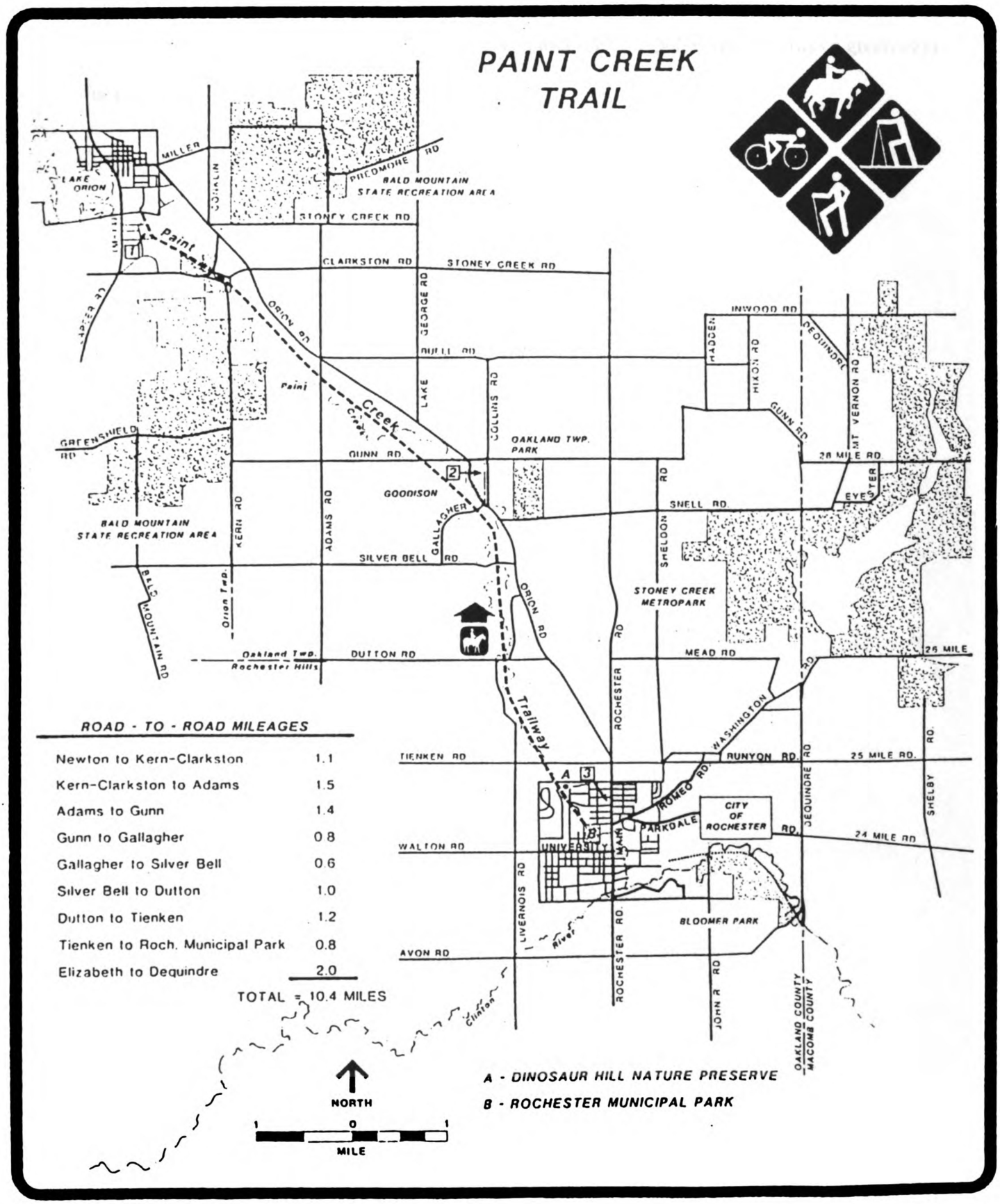
Today we live in a fast paced society dominated by highways, parking lots, strip malls and fast food chains. It is an artificial realm often promoting a kind of mindless race to nowhere. There is virtually no connection with the natural world. As a result, people have become dissatisfied with urban life and seek ways to live away from cities. Those who stay in urban areas experience this lack of connection to nature as well, yet have no choice but to remain there. Thus their quality of life often suffers. It would seem that we need to find a way to provide this reconnection with nature in urban and suburban areas--thereby increasing the quality of life in cities. Instead of moving to nature away from cities, we need to find ways to bring nature back into cities.

"It is time to stop thinking of our cities as one place and nature as someplace else. Our urban centers and edges host the vibrant variety of our culture. We should not have to think of them as places to escape." (Vancouver City Council 1995:1)

By reconnecting people with nature, greenways have brought many benefits to areas in which they are located. Communities with greenways have experienced increased recreational opportunities, improvements in health, improvements in air and water quality and many economic gains. The Paint Creek Trail in Oakland County, Michigan serves as an excellent example of a greenway that has provided a multitude of benefits to residents living in its vicinity (Figure 1).

The purpose of this research paper is to illustrate perceived benefits by residents concerning a nearby greenway. An in depth discussion on the benefits of greenways for communities is presented as well as the results from a detailed perceptual-based survey of 64 households located within 1/2 mile of the Paint Creek Trail in Oakland County. By conducting a

Figure 1: Paint Creek Trail



Source: Paint Creek Trailways Commission

complete review of the current research on the benefits of greenways and by surveying a sample of residents living near the Paint Creek Trail, I can ascertain the perceived benefits of greenways for residents living in their vicinity.

Section 2: What Is A Greenway?

2.1 Greenway Concept

To lay the foundation for a discussion on the quality of life issues and benefits associated with greenways, I will briefly describe the greenway concept.

The term greenway usually brings to mind an image of a beautiful natural setting, perhaps a park or a preserve. The word green even insinuates trees and wildlife, while way implies some type of path or trail. Greenways, however, come in many different colors, shapes and sizes. From a natural trail along a blue waterway to a pathway in the heart of America's gray urban realm, greenways cross a multitude of landscapes, ranging from natural areas to altered landscapes. The word greenway has become a common expression, yet it is somewhat obscure and ambiguous. Thus, the most common question asked is: "What exactly is a greenway?" (Florida Greenways: 1995)

As defined by the Northwest Michigan Greenways Initiative, "Greenways are corridors of protected open space managed for conservation and recreation purposes. Greenways often follow natural land or water features, and link nature reserves, parks, cultural features, and historic sites with each other and with communities." (Northwest Michigan1995: 1) Furthermore, greenways connect paths, natural areas, cultural and historic centers and even cities with each other. They also serve to protect environmentally sensitive areas and its wildlife, and enable people to have access to outdoor recreation in a wonderful natural setting (Grove: 1990).

Many people have hikes along a wooded pathway through rolling farmland or a protected strip of land alongside a mountain. Still others have ventured along a protected river corridor or even a riverside park in a large city. Many people have in fact experienced walking or biking

through a greenway without even knowing they were in one. In its simplest terms, a greenway is a linear open space consisting of natural vegetation (Smith and Hellmund: 1993).

One of the special features of greenways is in their systematic approach. A greenway system consists of large nodes or focal points, which are linked to smaller sites made up of natural, historical, cultural and recreational areas. The nodes act like anchors, providing an origin and destination point for people and wildlife moving through it. Nodes range in size from large protected reserves to small regional parks. Natural linear paths connecting the nodes range in size from large landscape links to small conservation and recreational corridors. Overall, for a greenway to properly function, connectivity must exist. Every green space must be connected to some type of open space. Therefore, fragmentation and isolated spaces will cause the system to malfunction (Florida Greenways: 1995). "Greenways are not meant to stand by themselves, but to link a number of outdoor opportunities in a continuous corridor, a traversible string of pearls." (Grove 1994: 3)

Since greenways come in many shapes and sizes, Charles Little in "Greenways For America" discusses five major categories to differentiate them.

1. Urban Riverside Greenways: These greenways are often created along run-down city waterfronts and are usually a part of a redevelopment program for a city.

2. Recreational Greenways: They feature trails and paths of considerable distance. They are usually natural corridors and also canals or abandoned railways. This paper's case study on the Paint Creek Trail is an excellent example of a recreational greenway.

3. Natural Greenway: These are ecologically significant areas along rivers and even ridgelines. Wildlife use these spaces for migration, while humans value them for hiking and studying nature.

4. Historic Greenways: They are created for citizens to have walking access along a road, highway or waterway of significant historic and scenic value.

5. Regional Greenways: This type of greenway is based on natural land forms, such as ridges, valleys and other natural areas. This is a comprehensive type of system to create large open spaces linked together with interconnecting green trails (Little: 1990).

2.2 History of Greenways

The concept of creating green spaces in cities is an ancient phenomena with a rich and diverse history. The word greenway, however, was actually brought into common usage only ten years ago, attaining national prominence in 1987 by the President's Commission on The American Outdoors (Sacramento River: 1992).

The concept of creating linear open spaces, however, can be traced back to ancient times dating back to the beginnings of human civilization. Newton's "Design On The Land" provides a detailed history on the evolution of using green spaces in human settlements (Newton: 1971). There are two examples that had a great influence on today's greenway movement. In the 1860's, Frederick Law Olmstead, the distinguished father of Landscape Architecture envisioned the need and potential for creating open spaces and parkways in America's cities. In his plans, he also stressed the need to create and link parkways in cities to natural ecosystems. His linear park .

system for the city of Boston, called the Emerald Necklace (1887), essentially established the concept of greenways in cities. If any single person deserves credit for inventing the idea of greenways, it was Frederick Law Olmstead (Ahren: 1991). In the 1880's, Horace Cleveland and his "Proposal of A Network of Parks and Parkways for Minneapolis-St. Paul" represented an effort to create a regional system of parks and open spaces throughout the Twin Cities area. Cleveland's ideas helped shape and mold today's regional and metropolitan greenway concepts (Newton: 1971).

The greenbelt phenomena of the late 19th Century also serves as an important influence to the modern-day greenway movement. Ebeneezer Howard's Garden City Concept (1878) focused on creating greenbelts around cities to limit sprawl, while tying the countryside and city together. Despite its extensive use in parts of Europe, the concept was only used sparingly in the 1920's and 1930's in the United States. The notion of creating greenbelts around cities, however, played a vital role in the evolution of today's greenway concept (Kitsap County: 1996).

During the 1920's, Benton McKaye, a leader in the Regional Planning movement, suggested that creating "a common public ground" was needed to limit or hold back urban development. In essence, McKaye sought to create open spaces to guide development and control growth. He also stressed the creation of recreational opportunities with natural corridors in America's cities. As a distinguished forester and regional planner, McKaye's ideas played a significant role in prefiguring the greenway movement (Little: 1990).

The evolution of the greenway concept was also shaped by the "Design With Nature" ideology of Ian McHarg. In the 1960's, McHarg led a new approach, combining scientific knowledge and design methods to create ecologically-based planning (Little: 1990). McHarg

stressed the need to systematically plan according to the relative ecological value and sensitivity of each part of the landscape. Overall, McHarg wanted to distribute development in such a way as to minimize the disruption of nature (Smith and Hellmund: 1993). Phil Lewis, a distinguished Landscape Architect, is also worth noting as an important influence on today's greenway movement. His concerns for the rapid changes of the American landscape are reflected in his study of recreation and open spaces, and greenways systems (Lewis: 1961).

The innovative approaches of men such as Olmstead, Howard, McKaye, McHarg, Cleveland, and Lewis all took an ecological approach in dealing with the design and function of natural areas. Their ideologies stressed the linkage of city with nature. All of these past movements have provided the necessary theoretical framework and "ingredients" for the creation of the modern-day greenway concept (Smith and Hellmund: 1993).

Today the greenway movement is expanding rapidly across the nation and the world. After the publication of the President's Commission report on greenways, professionals from many different fields, such as lawyers, politicians, community leaders, scientists, planners, and landscape architects have all become advocates of the promotion of greenways for their communities. The publication of "Greenways: The Beginning Of An International Movement" represents the significant growth and interest in greenways all over the world (Fabos and Ahren: 1995).

2.3 Greenways in Michigan

Michigan is recognized around the nation as a major player in the greenway movement. There are literally hundreds of greenways in various shaped and sizes. Most of the formalized

greenways in Michigan, however, are created from abandoned railways. Thanks to the great industrial heritage of the state, Michigan ranks second to only Wisconsin with 62 miles of rail trail greenways. Overall, there has been a growing enthusiasm for bringing greenways into urban areas. As a result many individuals and organizations have led an effort to create a system of interconnected greenways across the state (Vaughn: 1996).

For example, in southeastern Michigan, there is a highly organized effort which aims to create a multitude of greenways for the Detroit metropolitan area. This effort is called the Southeast Michigan Greenway Project. It is an effort to create an "interconnected" greenway network throughout the seven county region of Detroit. Located in Livingston, Macomb, Monroe, Oakland, St.Clair, Washentaw, and Wayne counties, this network will link every community to existing parks, green spaces, and trails enabling all citizens to have great access to outdoor recreation (Southeast Michigan: 1995).

Examples of other major agencies in Michigan working to promote greenways include: The Grand River Advisory Group and the West Michigan Greenway Council in West Michigan, and the Northwest Michigan Greenways and Northern Trails Network of Northern Michigan. The Michigan Trailways Program also exemplifies a statewide effort by the Michigan Department of Natural Resources (DNR) to promote the creation of large regional greenways across the state. All of these efforts represent the growing recognition of greenways as being important factors in the enhancement of the quality of life for communities (Michigan Trailways Program: 1995).

Section 3: Quality Of Life

The quality of life is a very complex subject. In its simplest form, quality of life is a multifaceted concept, blending many social components together to create values which are used to rate the character of a community (Myers: 1988).

According to the President's Commission on the Quality of American Life, "Quality of life is both a perennial concern...and a rather recent preoccupation. It is a topic that permits many different definitions, and for which there is no widely agreed-upon index which allows us to monitor changes in that quality." (Cutter: 1985)

When citizens are asked to define the quality of life for their communities, there are usually several important factors that will determine their response. Among some of the most common features that they feel contribute to the quality of life are job opportunities, lack of crime, affordable and quality housing, safety, traffic, cultural events, shopping, schools, recreation, and most importantly, a healthy environment. In essence, the quality of life is a perceptual based analysis on how people value the community in which they live (Myers: 1988).

Protecting and enhancing the quality of life is a goal that citizens and community leaders have shared for many years. It has especially become a top priority in urban and suburban areas. Despite the fact that the American economy experiences a constant growth, the overall development and well-being of most urban areas continues to decline.

Most metropolitan areas have a wealth of cultural activities, high quality jobs, and a lifestyle which seems superior to the life of a rural area. Many urban dwellers may even earn as much as five to ten times more money than a rural dweller and have a so-called exciting lifestyle, yet their overall quality of life is significantly less (D'Antonio: 1994).

Why?--Few cities in America are actually planned to incorporate the natural environment (Lowe: 1992). Their landscapes offer very few glimpses of nature and little relief from the world of concrete and asphalt. Most urban neighborhoods in fact have very few places for adults and children to meet and play. To walk along most urban and suburban streets is to venture out into a plethora of smog and congestion, while risking the danger of being struck by a speeding car (Lowe: 1992).

As stated by James Howard Kuntsler in Geography From Nowhere, America is "now like television, violent and tawdry. The landscape it runs through is littered with cartoon buildings and commercial messages...they do not celebrate anything beyond their mechanistic ability to sell merchandise. We don't want to remember them. We did not savor the approach and we were not rewarded upon reaching the destination, and it will be the same the next time, and every time there is little sense of having arrived anywhere, because every place looks like no place in particular." (Kunstler: 1993)

Urban and suburban America is now at the point where the quality of life that once seemed so high has begun to decline. The difference in the quality of life between city and countryside is becoming very easy to recognize. As a result, more and more urban dwellers have begun to search for ways to bring nature and a more peaceful setting back to their communities as a means to improve the quality of their lives (Lowe: 1992).

One of the emerging trends in livability and quality of life studies is the issue of "sense of place". The combination of sprawl, urban decay, traffic, and community dis-investment has played a significant role in the lack of natural areas and community spaces (Role of Transit: 1997). Many studies in fact demonstrate that recreational activities are strongly linked to

improving the quality of life and in creating a sense of place in urban and suburban areas (Jeffres: 1993). More specifically, it has been the re-connection of urbanized areas to nature that has greatly added to the quality of life in cites. Urban citizens and leaders have begun to realize that if they wish to combat the ills of urban life, they will need to bring back the element of nature back to their cities.

As United States Senator Jim Sasser from Tennessee stated, "There is so much congestion in the urban crunch, and it is important to get out of it and get to a great place...going there (greenways) one can experience a spiritual awakening. It is important for your total outlook...it is a chance to get out of the asphalt jungle." (Greenways Tennesse: 1995)

The great aspect of greenways is that they bring nature right to our doorsteps. So to improve the quality of life in urban America, while reconnecting its citizens to their natural heritage, greenways play an important role in bringing nature and personal well being back to our cities (Florida Greenways: 1995).

Section 4: Benefits Of Greenways

Greenways bring various types of benefits to the communities in which they are located. As stated by the Hudson River Valley Authority, "In an age when communities everywhere are fighting to retain their unique sense of place, greenways are an exciting way to preserve a high quality of life, increase access to nearby recreational opportunities and fragile resources. Greenways also help to build awareness of an area's historic and cultural legacy and to promote economic activity that is directly tied to a pleasing and healthy environment." (Scenic 2: 1989)

This section will discuss the recreational, cultural, transportation, environmental, and economic benefits associated with greenways. Each part will provide a review of current research on the benefits of greenways.

4.1 Recreational Benefits

One of the most common and visible benefits associated with greenways is recreation. Greenways provide great places for joggers, walkers, bicyclists, and hikers to experience the opportunity of being in a natural setting, while staying close to home. Greenways are an excellent fitness and health resource. Any citizen who has spent hours upon hours jogging around a track, or has biked through congested and busy city streets usually finds greenways to be wonderful areas for recreation. Greenways that are located along rivers and streams can even provide urban dwellers access to activities, such as canoeing, kayaking or fishing. They also provide a place for the traditional picnic, and serve as a location to relax and enjoy watching local animal life (Greenways Tennessee: 1995).

Most Americans feel like they are rushed and have very little time for recreation. However, there is a large and growing segment of the American population that greatly values recreation as being a vital component to a healthy and pleasant lifestyle. Many of these people even place more value and interest on recreation and leisure than on their own jobs.

A survey of over 1300 Americans across the nation on the value of recreation revealed that over 60% of the respondents felt that their community as a whole greatly benefits from local parks and open spaces. These benefits include recreational aspects such as exercise, places for children to play, families to meet, and peaceful areas to relax and enjoy the outdoors. Overall, the survey indicated that people feel that the benefits of recreation from open spaces and parks (such as greenways) are worth more than what they pay for through taxes and other funding requirements (Godbey and Graefe: 1992).

Back in 1987, the President's Commission on Americans Outdoors (PCAO) conducted a survey of the American public on the issue of recreation. The commission found that most Americans cherish and admire the natural beauty of forests and state parks, but cannot visit them on a regular basis. A greenway, however, can bring nature and its variety of recreational benefits and opportunities to urban society (Livingston County: 1995).

In Denver, Colorado for example, recreational greenways have become so popular that in a survey, 48% of its citizens rated them as one of the most popular recreational activities in the city. Greenways were in fact listed as being more popular than swimming pools. The citizens in the survey even reported that they would pay extra taxes to support more greenways in their neighborhoods (Greenways Inc.: 1995).

A consumer-based survey reported on by the Washington Post in 1995 also revealed significant findings in support of greenways as being beneficial to communities. In the survey, two of the top three demands by citizens dealt with a desire to have more recreation and natural open spaces, and to have more walking and biking paths near neighborhoods and subdivisions. Over 50% of the citizens even said that there should be a place in each neighborhood for exercise, fitness and community interaction. Overall, most Americans continue to become more aware of the benefits of greenways and parks, and have begun to demand that these type of recreational features become a focal point of their communities (Harney: 1995).

By enabling citizens to have a variety of recreational opportunities close to home, greenways also play a role in keeping people physically fit and healthy, thereby reducing the costs of health care and insurance. In 1992, Men's Fitness Magazine stated that for every mile a person walks or runs, 24 cents are saved in medical and other health care costs. Likewise, the Corporate Wellness Study in San Jose, California in 1988 discovered that people who exercise on a regular basis have 14% lower medical insurance claims and spend 30% fewer days in the hospital (Greenways: A Prescription: 1996).

The fast-paced and growing health conscious lifestyle of urban America would clearly be improved by the addition of greenways to their communities. As Americans spend more of their time engaging in leisure-based activities, the demand for greenways and their recreational attributes should continue to grow (Greenways Inc.: 1995).

4.2 Cultural and Educational Benefits

Greenways are also recognized as important factors in the enhancement and protection of culture in communities. Successful greenway projects have provided a cultural "main street" in cities where neighbors and their children can meet, and where community groups can have gatherings and festivals. Some community groups are known to even sponsor a "Greenway Day" to celebrate nature and the outdoors experience. A multitude of walking and running events take place every year on greenways to support local charities and fund-raisers (Greenways Inc.: 1995).

The Paint Creek Trail provides an excellent example of a greenway which hosts a variety of social events. Every weekend, the trail is filled with people from all over the county. "The Paint Creek Trail becomes a gathering place and more a sanctuary of nature's best sounds and solitude. Walkers share the trail with birds and bikers, fishermen and fitness seekers. It's a great place to be." (Walden 1995: 3)

From a social and cultural standpoint, greenways are also an important tool in helping to develop a sense of community by connecting neighborhoods and shopping centers to parks and open spaces with each other. Today, more and more greenways are also being incorporated into neo-traditional neighborhood designs, which link communities and neighborhoods through a system of parks and open space (Apalachee: 1995).

The 31st Street Greenway just outside of Chicago represents a fine example of a historic and cultural greenway. The trail begins ten miles south of the Loop at Riverside and runs for eight miles through a prairie heritage historic trail, which consists of many distinct residencies and parkways. The 31st Street Greenway is largely responsible for preserving the history and culture in this part of Chicago (Little: 1990).

From an educational standpoint, greenways are a means to provide citizens a wonderful place for learning about the earth's ecological processes. Since most urban residents have become disconnected to nature, they are often ignorant of its importance to their overall well-being. Thus greenways serve as important areas to teach children and adults the wealth and beauty of our natural heritage. Urban areas with greenways have indeed become an important cultural and educational asset and have brought many additional benefits to cities (Tennessee Greenways: 1995). Overall, greenways can promote family unity and help strengthen friendship and neighborhood relations. They are places where communities can come together and interact in a safe and natural environment (Indiana Trails: 1996).

4.3 Transportation Benefits

The Bicycle Institute of America estimates that 3.2 million people commute to work by bike—800,000 on any given day (Jones: 1993). Since America has abandoned much of the traditional forms of transportation, while making very little effort to create an efficient mass transit system, traffic volumes on the nation's freeways and highways will only continue to escalate with no relief in sight. Therefore, there will be a great need for new and alternative forms of transportation. If properly designed and planned, greenways can serve as a significant extension of America's roadway network, thereby offering the same benefits as the automobile; efficiency, reliability, comfort and safety (Greenways Inc.: 1995).

A national survey by the Federal Highway Administration even showed that Americans are willing to bike as far as five miles to their destination and walk as far as two miles (Greenways Incorporated: 1995). But despite this fact, most Americans feel that their safety and well-being is

compromised by the congested roadways that they must share with automobiles. Hence, there is a dilemma (Livingston County: 1995).

In 1994, the U.S. Department of Transportation set forth two goals for the nation's transportation system. The first goal is to "double the percentage of total trips made by bicycling and walking in the United States from 7.9 to 15.8 percent of all travel trips." The second goal is "to simultaneously reduce by 10 percent the number of bicyclists and pedestrians killed or injured in traffic crashes." (Jones: 1993) The creation of greenways can actually work towards the achievement of these two goals. Greenway trails serve as great alternatives to driving to work, while eliminating the risks of traveling along a dangerous roadway. With a greenway, a person could literally leave their home and walk or bike to work or school along a beautiful, safe, and car free trail (Greenways Tennessee: 1995).

In the State of Illinois, a survey of users of the state's major rail-trail greenways taken in 1993 in fact showed that many people have benefited by utilizing greenways as an alternative form of transportation. The survey revealed that along three trails in the Chicago area, an average of over 20% of the trail's users actually used the trails to commute to and from work, school or shopping centers. Chicago's Delyte-Morris Bikeway even showed a commuter rate of over 30%. Furthermore, this survey exemplifies the significant benefits that greenways could bring to communities across the nation (Illinois Department 1990).

Of course walking and biking will never replace the automobile as America's choice of transportation, but with the addition of greenways, more people will be able to utilize alternative forms of transportation. As a result, pollution and congestion from automobiles could be significantly diminished. Greenways, however, will not solve the gigantic problem of traffic safety

and congestion in America, but they are a great step in the right direction (Greenways Tennessee: 1995).

4.4 Environmental Benefits

From an environmental standpoint, greenways play a significant role in the improvement of the quality of life in communities. Since the environmental quality of urban areas is often characterized as being very stagnant and polluted, the addition of more greenways to the urban and suburban environment can be a major step towards enhancing the air, water, and land quality of these areas (Greenways Inc.: 1995).

Greenways bring benefits to communities because they support naturally productive ecosystems. Greenway planning and design recognizes the delicate structure of natural systems, as well as the importance of clean air, clean water and clean land. As part of a coordinated approach to "environmentally plan" communities, greenways can help to ensure that an area's resources and unique natural features are protected, and that the natural system as a whole is carefully considered in future urban development.

The addition of greenways can introduce animal life and vegetation to parts of urban and suburban areas that have for the most part become treeless, degraded, and inhospitable to animals, and displeasing to people (Land For Nature: 1996). Since most Americans live in cities, greenways help maintain contact with nature. This benefit would never be possible if it were not for the existence of a greenway. More and more urban residents are beginning to realize how lucky they are to live near a greenway (Greenways Inc.: 1995).

Jonathan M. Labaree's "How Greenways Work" provides an excellent example of how greenways facilitate many different ecological functions, thereby bringing benefits to communities. The following set of six ecological functions that greenways provide to communities are summarized.

(1) Habitat: Greenways are known to function as wildlife habitats. However, this often depends upon the size, location, and needs of the species in a particular region. Generally, the larger the greenway, the more species it will support. "Edge Species", which are known to utilize narrow corridors of open space (i.e. deer and birds) thrive in any type of greenway and are often the most common species observed. Greenways in cities support a wealth of "Edge Species", enabling people to observe wildlife up close in the urban environment.

(2) Conduits: Conduits are areas in the landscape where animals, water and people move. As linear corridors of open space, greenways provide for animal and plant diffusion across the landscape. By providing protected and natural passages between parks and conservation areas, greenways help to eliminate fragmented habitats caused by urbanization. Greenways, therefore, help to increase or maintain the size of an area's habitat, enabling animals to meet their migratory and range requirements. As urban sprawl continues to consume more land, greenways will represent a way to preserve an area's natural wildlife.

(3) Barriers: Greenways can also function as natural barriers to noise from busy streets or as a barrier to unpleasant views in a neighborhood. By protecting scenic sites and landscapes, greenways improve the character for a community, such as providing tree-

lined roads or scenic urban river fronts.

(4) Filters: Greenways serve an important purpose to rivers and streams by acting as natural filters. Riverine greenways (along rivers) filter out nutrients, sediments, and pollutants from stormwater runoff such as oil, gas and garbage. Vegetation in greenways like woody plants and grasses also remove phosphorous and nitrogen from runoff. Hence, greenways serving as filters are very beneficial to communities.

(5) Sinks: Riparian greenways can act as sinks by moderating the water flow in rivers and by absorbing excess nutrients and pollutants. The vegetation and natural ground cover in greenways absorbs massive amounts of floodwater and stormwater from inundating cities. Residential developers are beginning to realize how great an asset a greenway can be to homes along floodplains (Labaree: 1992).

(6) Sources: Lastly, greenways can benefit communities by functioning as biological sources. If the environment surrounding a greenway is urban or agriculture, then the greenway can function as a "linear seed bank", helping to maintain a healthy stock of plant and tree seeds. Greenways can also provide protected water sources for wildlife and plants living along rivers or in the inhospitable urban environment (Apalachee: 1995).

From an environmental standpoint, greenways have been proven to improve the quality of life of the communities which they are located. Urban America would clearly benefit from the addition of greenways to its cities.

4.5 Economic Benefits

Economically speaking, greenways provide numerous benefits to the cites that they serve. This section will review three types of economic benefits associated with greenways.

Property Values:

The effect on property values by greenways and open spaces has been the subject of many studies across the nation. This section will provide several examples of how greenways have positively impacted communities in America, thereby increasing the quality of their lives.

Greenways are recognized as providers of amenities, such as attractive views, open space preservation and recreational opportunities. Americans value these amenities to a great extent. This is reflected in the increased real property values and increased marketability for homes and land located near greenways. Developers have also begun to recognize these values and even incorporate greenways into design, planning, and marketing of new properties (Arendt: 1996).

Greenways have proven to be significant factors in the real estate industry of America. Studies have shown that real property values increase by an average of 5 to 20 percent in areas located next to greenways. In 1994, the National Home Builders Association even reported a 10 to 20 percent increase in residential property values within the vicinity of parks and open spaces (National Park Service: 1995).

In a survey of Seattle real estate agents, 70 percent said that being adjacent to the greenway (Burke-Gilman Trail) has a positive effect on selling a home. Homes within two blocks of the trail were reported to sell for 6.2 percent more than homes away from the trail. Over 90 percent of Seattle area agents even reported that they actually use the greenway as a selling point in their marketing strategies (National Park Service: 1995). A similar study of homeowners in

Maryland in 1992 indicated that 60 percent of the people interviewed felt that being located adjacent to the trail would enable their home to sell for more money (Moore: 1994).

The Luce Line Trail in Minnesota at first was considered a controversial trail. However, a survey of adjacent landowners along the trail showed that 61 percent of the residential owners in its vicinity felt that there was an increase in their property value as a result of the greenway. Appraisers and real estate agents confirmed that they use the trail as a positive selling point for property, hobby farms and proposed development (Arendt: 1996).

An increase in property values usually results in an increase in property tax revenues. Communities across America have learned from other cities that in the long run, greenways will pay for themselves in a short period of time. For example, a study of the impacts of greenways on property values in Boulder, Colorado showed that the aggregate property value for one neighborhood was $5.4 million greater than if there had been no greenway. The result is: $500,000 of additional property tax revenue each year. Since the purchase price of the greenway was only $1.5 million, the trail system in the city was paid for in just three years and will last a lifetime. As a result, Boulder will continue to not only reap the benefits of having a beautiful greenway system through its city, but is will also accumulate additional property tax revenue for years to come (National Park Service: 1995).

Overall, greenways have been viewed as significant amenities in the enhancement of property values. More and more home buyers are starting to look for real estate that provides direct access to a greenway system, while real estate agents and community leaders are envisioning the addition of greenways as a selling point, and a way to generate more revenue (National Park Service: 1995).

Tourism:

Greenways are visited by a diverse level of tourists and visitors. They can be exclusive destinations for bikers and hikers, or act as points of interest for tourists to extend their stay in an area. Therefore, the "level of tourist draw" will vary from greenway to greenway. This section will discuss some examples of how the tourism industry has benefited from greenways (National Park Service: 1995).

Tourism is ranked as the number one economic force in the world. Travel and tourism is recognized as a leading employer in several states and has been predicted to be the leading industry in America by the year 2000. Expenditures for tourism impact lodging, restaurants, retail, transportation and other services, which support jobs, tax revenues and income. Greenways have been recognized as major tourist attractions to local communities. Recent studies show that weekend trips to areas with greenways are on the rise, while ecotourism and travel to unique natural areas has become one of the fastest growing areas of the tourism industry (National Park Service: 1995).

The Impact of River-Trails, by the Rivers, Trails, and Conservation Assistance Program in 1992 surveyed users of three greenways in the nation. The study found that users spend an average of $3.97 to $11.02 a day, generating a yearly impact of $1.2 million or more on each greenway. The survey also showed that greenways attracted spending by non-local residents ranging from $294,000 to $630,000 each year. Hence, greenways can help generate substantial revenue for the tourist industry of a community (Moore: 1994).

In the late 1980's, the State of Missouri spent $6 million to create a 200 mile greenway called the KATY Trail. Initially, many citizens were concerned about their tax dollars funding a

greenway, while property owners in its vicinity protested that their property values would be devastated. However, in the trail's first year of operation, it generated over $6 million in tourist expenditures, surpassing everyone's expectations (Greenways Inc.: 1995). Today the KATY Trail continues to generate significant expenditures, while revitalizing the many small towns that are located in its vicinity (Bank: 1987).

The Elroy-Sparta (from Elroy to Sparta) Trail in Wisconsin also represents a greenway that has generated tourist expenditures, while revitalizing local communities. Users of the trail averaged expenditures of $25 per day in 1989, while total yearly expenditures were over $1 million. Since over half of the users were estimated to come from outside Wisconsin, the state and local areas have greatly benefited from the greenway. The Elroy Sparta Trail has become so positive that many jobs and businesses have been created due to the trail's existence (National Park Service: 1995).

In San Antonio, Texas, the San Antonio Riverwalk is considered the "anchor" of the tourism industry in the city. Tourism is rated as the second largest economic sector in the city, constituting $1.2 billion annually. A survey of city residents even showed that the Riverwalk is regarded as the second most important tourist attraction in the state of Texas (National Park Service: 1995).

Business and Industry:

The National Park Service has reported that most of the interest in greenways in the nation has actually come from business people and community leaders—not radical environmentalists. Because there is a strong link between greenways and increased retail, tourism, and property values, these citizens are continuously making the push for more and more

greenway projects.

Cities with a high quality of life make it very enticing for corporate relocation. Evidence continues to show that the quality of life of a community is an important factor in relocation and expansion of business and industry. Greenways have been proven to add to the quality of life in cities and people are beginning to realize what an important tool they can be to their economies (National Park Service: 1995). Greenways have helped make places like Denver, Colorado and Raleigh, North Carolina popular cities to work and live, thereby bringing in new homeowners, jobs, and tax revenues into these communities. These two cities have strove towards protecting their natural and cultural resources through greenway planning and design. Consequently, they are much more attractive places to new and existing businesses. Greenways have literally become "magnets" for corporate relocation and new development (Greenways Tennessee: 1995). Hence, the motto, "where there is a will there is a way" should be in this case reversed to where there is a (green) way there is a will. Cities with greenways have definitely reaped many economic benefits.

4.6 Crime and Vandalism

One of the major concerns for communities and citizens living along a greenway is crime and vandalism. When a greenway trail is being proposed, citizens such as farmers, developers, and home owners near the trail often make accusations that a public trail would bring significant amounts of gang-related activity, trespassing, and crime, thereby decreasing the quality of life for their community (Coburn: 1996).

For example, in 1994 over 700 concerned property owners in the state of Washington formed the Citizens Against Rails To Trails (CART) to oppose the further creation of greenways

across their state. This group of farmers and land owners led a grass roots effort against greenways, because they felt their property rights would be infringed upon, while their neighborhoods degraded as a result of the creation of new trails. At CART and community meetings, group members sought ways to "reclaim" the abandoned rail beds planned for future trails for their own use. They even helped elect politicians proven to have an anti-greenway background (Coburn: 1996).

Overall, groups such as CART have become very common across America. As the nation's natural areas and farmland become developed and placed into public control (i.e. rail trails or parks), there continues to be a growing segment of the population that resents greenway projects. These groups of citizens consider greenways as negative influences on the quality of their lives.

However, despite the various claims against greenways, little evidence has ever been presented by anti-greenway groups that proves these types of trails actually degrade and decrease the quality of life in the areas where they are located. As a matter of fact, a 1980 study by the Minnesota Department of Natural Resources compared attitudes of land owners along a proposed greenway trail to the attitudes of land owners on an established greenway. The study showed that on the proposed trail, 75 percent of the landowners near it thought if the trail was constructed there would be more vandalism and other crimes in the neighborhoods. However, on two established greenways, virtually no landowners (0% and 6%) felt that crime and vandalism was even an issue for the neighborhoods near the trail (American Greenways: 1996).

A study by the National Park Service in 1992 further supports the evidence in favor of greenways. The study was on the impact of rail trail greenways on nearby property owners. It

found that most of the landowners reported no increase in problems since the trails in the communities opened. The majority of landowners in fact stated that living near the local trail is better then living near an unused rail line or vacant area (American Greenways: 1996).

Overall, it seems as though people are initially concerned about greenways and the misperceptions that these types of open spaces breed crime, vandalism, and chaos to their communities. Evidence, however, continues to demonstrate that after the trail is created or formalized, the concerns of crime usually totally diminish. People then actually begin to appreciate greenways and feel lucky to have such a trail in their community (Coburn: 1996).

From this discussion on both the positive and negative aspects of greenways, it can be concluded that the recreational, cultural, transportation, environmental, and economic benefits that they bring to communities where they are located far outweigh any of the negative aspects associated with them. Greenways are no less secure than any other areas of human use and cause no crime. Thus, it is clearly evident that greenways are a great tool for the enhancement of a community's quality of life.

For my study, I was interested in quantitatively documenting the perceived benefits of greenways. I based my decision upon the current knowledge base concerning greenways. I have determined that there is a need for more citizen-based surveys and studies demonstrating the benefits of greenways for communities. Citizen-based surveys and studies are a vital component to the planning process. If more community leaders and planners realized the support that greenways have from the citizenry, the common negative misperceptions of greenways would not control decision outcome.

Therefore, my hypothesis states that greenways provide a contribution to the perceived quality of life of urban and suburban areas. Specifically, the Paint Creek Trail has improved the quality of life for the neighboring residents it serves in Oakland County since its formal establishment in 1990.

Section 5: Paint Creek Trail Case Study

5.1 Paint Creek Trail Profile

Known as one of America's best rail-trails, the Paint Creek Trail is a 10.4 mile, 100 foot wide greenway located 20 miles north of Detroit in a rapidly growing suburban area. The trail is part of a regional effort by the Southeast Michigan Greenways Initiative to create an "interconnected" greenway network throughout the Detroit metropolitan region. The Paint Creek Trail is classified as a recreational greenway, because the purpose behind its creation was to provide residents of Oakland County with a scenic natural area for biking, jogging, walking, skiing and horse riding. The trail follows an old abandoned Penn Central railroad right of way along Paint Creek and the Clinton River. It extends from the southern border of Lake Orion through Orion Township, Oakland Township, Rochester, and Rochester Hills to the Oakland-Macomb County line (see Figure 1) (Case Study: 1990).

The Paint Creek Trail's surrounding landscape features residential areas, rolling fields, woodlands, wetlands, and a variety of local wildlife. The trail links two major regional parks: The Bald Mountain State Recreation Area at its northern end and the Rochester-Utica State Recreation Area at its southern end. By connecting two parks to each other, the trail meets the standards required for a viable greenway. Since it is part of the Southeast Michigan Greenway Network, the trail is expected to expand and become connected to other trails, such as the Poly-Ann Trail located north of the City of Lake Orion. Other large parks like the Stoney Creek Metropark are also in close proximity to the trail, making it a highly accessible corridor for residents to reach the area's popular natural features (Livingston County: 1995).

The history of the Paint Creek Trail's creation is very similar to typical rail to trail greenways across the nation. In the 1970's as the suburban sprawl of Detroit continued to alter the landscape of this region, residents concerned about the quality of their lives began to demand that more recreational opportunities be created in their communities. Due to this support, along with great community leadership from the Rochester Hills, Rochester, Oakland Township and Orion Township units of government, the Paint Creek Trailways Commission was created in 1980 to acquire, develop, and then operate the trail. Through hard work, dedication, cooperation, and financial support from many sources, 10.4 miles of the Penn Central right of way was purchased in 1983 for $450,000. The trail then immediately became used informally by local residents. After several years of planning and preparation, the construction and process of formalizing the trail soon followed. In 1990, Paint Creek was officially opened to the public as a rail-trail recreational greenway (Case Study: 1990).

The Paint Creek Trail's completion can be directly linked to the desire by local residents and civic leaders to enhance the quality of life for their communities. Throughout the entire planning process, local landowners, business leaders, and community representatives from all four municipalities along the trail joined together and formed a single coordinating body to create the Paint Creek Trail. It was through this cooperative effort from various groups of citizens that enabled the Paint Creek Trail to become a reality (Maniko and Markham: 1988).

Today, the Paint Creek Trail is considered an enormous benefit to the citizens of Oakland County. In 1992, the Paint Creek Trailways Commission even received the "Enjoy Outdoors America" award from the United States Department of the Interior. The award acknowledges the commitment that the commission has made in their effort to improve recreational opportunities in

the nation. Since only six other awards were given to trails across the country during 1992, the Paint Creek Trail has been considered as one of America's best rail-trail greenways (Carlin: 1992).

Since the population surrounding the trail is expected to continue to grow, while vacant land will continue to be developed, an even greater demand for public recreational areas will take place. As a result, trails like Paint Creek will become a cherished and valuable asset to the people of this area. Hence, the Paint Creek Trail and the Paint Creek Trailways Commission serves as a model of success in the effort in this nation to enhance the quality of life through the creation of greenways.

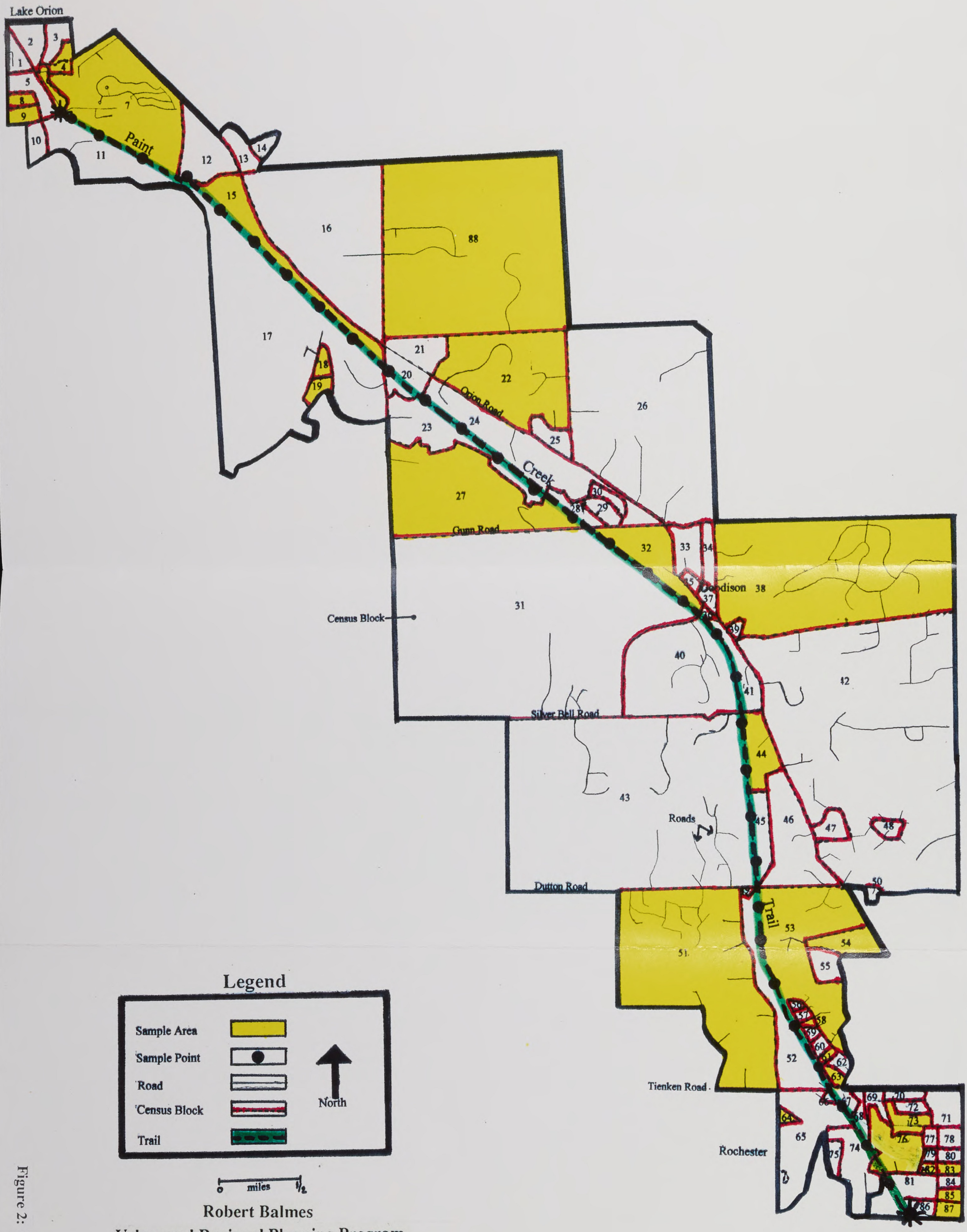
5.2 Paint Creek Trail Survey Methodology

A perceptual-based survey was taken for 64 households located approximately within ½ mile of both sides of the trail. The survey included an 8.5 mile stretch from the Rochester Municipal Park to the northern boundary of the trail (see Figure 2). Since the Paint Creek Trail is lined with homes and private properties, the 64 household survey was divided into two groups (Group A and Group B). This approach was taken to help determine whether the attitudes of residents living adjacent to the trail were different than those of the residents living a short distance from the trail.

Household Determination:

Group A of the survey consists of 32 households that are directly adjacent to the trail. To qualify, a household's property line had to border the trail. The surveyed households were selected based on their geographic distribution along the trail. Therefore, along the 8.5 mile

Paint Creek Trail Survey Map



Legend

- Sample Area
- Sample Point
- Road
- Census Block
- Trail

North

0 miles 1/2

Robert Balmes
Urban and Regional Planning Program
Michigan State University
1997

Figure 2: Survey Map

segment of the trail, a household was surveyed approximately every .27 miles (8.5 miles/32 surveys). This was done so each segment of the trail had an equal representation of surveyed households. Figure 2 displays a series of sample points along the trail which represent the distribution of the households. Since some parts of the trail are rural with very few homes, there was not a completely uniform distribution of sampled households. However, the map displays a uniform distribution of sample points to preserve the anonymity of all 32 households.

Group B of the survey consists of a random sample of 32 households located within ½ mile of both sides of the trail. Census Block data provided by the U.S. Bureau of Census Tiger Files was used to randomly sample the households. Every census block that is located within ½ mile of the trail was used in the survey. In some cases, such as the area south of census block 11, the block was not used due to its size, and lack of households within the ½ mile distance of the trail. Major roadways, such as M-150 (Main Street) and Walton Road in Rochester served as buffers. Therefore, the census blocks located east and south of these roadways were also omitted from the survey study area. Based on this methodology, a total of 88 census blocks were selected for the random sampling process. In the survey area, blocks were then numbered in an arbitrary fashion, beginning at the northern boundary in Lake Orion and extending southward in ascending order.

In the household selection process, a table of random numbers was used to randomly select the census blocks. When a block was selected, (i.e. block 38), it still remained in the selection process. Therefore, a block could have been selected more than once, yielding several surveys. In fact, blocks 18, 54, and 82 were selected twice, while block 4 was selected three times.

Once all of the blocks were selected, each street within the block was then numbered. A table of random numbers was used again to select a street from each selected block. For example, Glanworth Street was one of three streets in block 8. It was randomly selected and chosen for the survey questionnaire. The selection of the households was then performed on site. The homes were again randomly selected using the random table. If no one was home or if residents chose not to participate, then another household was selected. Overall, the random process was meant to ensure that a scientific and unbiased methodology was used to survey the 32 households. This process enabled all homes located within ½ mile of the trail to have a "fair" chance of being selected. Appendix A provides a list of all 32 sampled census blocks, street names, and municipal location for Group B of the survey.

Questionnaire Methods:

The survey instrument used for the 64 households followed a questionnaire format with 12 multiple choice and yes/no type of questions. Residents were also asked to provide suggestions or comments in the last two questions (13,14). The goal of the survey questionnaire was to essentially ask citizens to rate the trail and to determine whether it has impacted the quality of their lives. Since evaluating the quality of life is often a perceptual-based approach, this survey was oriented towards asking residents how they think or feel about certain aspects of the trail. Appendix B contains the survey instrument used for the Paint Creek Trail survey as well as the official approval of the Michigan State University Committee on Research Involving Human Subjects (UCRIHS).

Question one was broken down into three parts to obtain a more detailed profile of how long residents have lived near the trail. It was also meant to determine how many people have

lived in the area since the trail's informal beginning in 1983, and since its formal establishment in 1990. Therefore, the purpose of question one was to determine whether citizens living near the trail prior to its conversion to a greenway (over 14 years) have a more positive opinion than the residents living in the area since its conversion and formal establishment.

One important factor in determining the Paint Creek Trail's value to area residents is to determine how often people use the trail. Question two helped to ascertain how many surveyed households use the trail, and how frequently they use it. Question three then provided an opportunity for households that use the trail to report what activities they engage in. Many people equate biking, running, and walking opportunities as important to a high quality of life. Therefore, Question two and three were meant to address these factors.

To avoid the misinterpretation of a good, fair, and poor rating system, questions four and five had a scale where residents could rank how they feel about the Paint Creek Trail's impact on their recreational opportunities and property values. Question four consisted of a 0 to 10 scale (0 least, 10 most), while Question five had a -10 to +10 scale. Since property values can be negatively affected by a location to a public space, a negative scale was used.

Question six and seven were meant to determine whether residents feel that there are any factors that diminish the quality of their lives due to the presence of the trail. A list of nine factors was provided for residents to select from if they had any complaints or concerns about the trail.

Safety is a vital component to a successful greenway trail. Question eight enabled residents to state whether they feel safe using the trail. If residents feel safe, then they had the option of rating their safety using the 0 to 10 (0 least, 10 most) scale. Residents who felt unsafe could select from a list of attributes, the reasons for their lack of safety.

Question nine, ten, and eleven were designed to determine how much value the surveyed residents place on the Paint Creek Trail. By asking residents a set of three different questions on the value of the trail, it could be more carefully determined how positively or negatively people feel about the Paint Creek Trail.

Question twelve was included to provide residents with an opportunity to select any changes or additions the Paint Creek Trailways Commission could make to bring more benefits to area residents and users of the trail.

Analysis Methods:

The methods used to analyze the results from the survey involved a descriptive analysis, whereby the information from each question for both groups was discussed. This includes a description of differences in opinions between both groups as well as a set of figures and tables displaying the results from each question.

A Chi-square Test for Independence was also used to calculate whether there was a statistically significant difference in opinions between Group A and Group B. From the Chi-test, a p-value (or significance probability value) was derived from comparing a set of two responses from both groups. For example, in question two, respondents were asked whether they use the Paint Creek Trail. Group A had 29 yes and two no answers, while Group B had 27 yes and five no answers. A Chi-test compares the answers from Group A with Group B. If the p-value is greater than .01 ($p > .01$), then there is no significant difference between the two groups. However, if the p-value is less than .01 ($p < .01$), then there is a significant difference between the opinions of Group A with those of Group B. The Chi-test was used in questions one, two, six, eight, and nine to assess the difference for the two groups.

Section 6: Paint Creek Trail Survey Results

To present the results of the survey, I will report the findings in the order of the survey questionnaire contained in Appendix B.

6.1 Question One

Table 1: Question 1A (1A) How long have you lived in this home?					
	Group A	Percent	Group B	Percent	Chi
A. 0 to 7 years	3	9.38	13	40.63	.000127
B. More than 7, less than 14 years	14	43.75	7	21.88	
A & B Combined	17		20		.273322
C. More than 14 years	15	46.88	12	37.50	
Totals:	**32**	**100.0**	**32**	**100.0**	

The results from part one of question one indicate that there is a significant difference between Group A and Group B for the respondents who have lived in the area for less than 14 years (Figure 3A,3B). There were only three respondents from Group A for the 0-7 group, while there were 13 respondents in this group for Group B. The 1-14 year age group, however, indicates almost the opposite. There were 14 respondents in Group A, while only seven in group B. The p-value for the Chi-test was .000127, which means that the two groups have a significant difference in responses. The over 14 year bracket did not show a difference between the two groups. When compared to the 0-7 and 1-14 age groups, there was no difference (p-value=.273322) between either group.

Figure 3A, 3B: How Long Have You Lived In This Home?

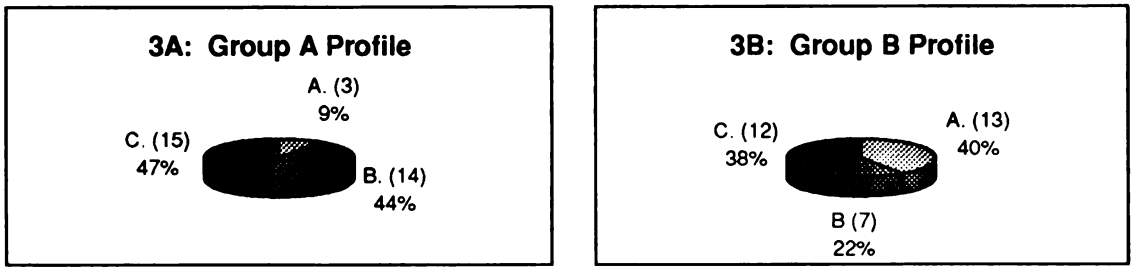


Table 2: Question 1B					
(1B) How important is the trail to the area?					
	Group A	Percent	Group B	Percent	Chi
1. Very important	3	16.7	6	31.5	0.220671
2. Important	10	55.6	10	52.7	
3. Somewhat important	4	22.2	2	10.5	0.1573
4. Not important	1	5.5	1	5.2	
Totals:	**18**	**100.0**	**19**	**100.0**	

Part two of question one indicates that both groups have similar opinions over the importance of the trail. Groups A and B had the most frequent responses in selection 2 (important). The Chi-test indicates that neither group had a significant difference in opinions. Group B did have a larger percentage of respondents (31.5%) state that the trail is very important than Group A. Overall, both groups had positive responses to this question (Figure 4).

Figure 4: How Important Is The Trail To The Area?

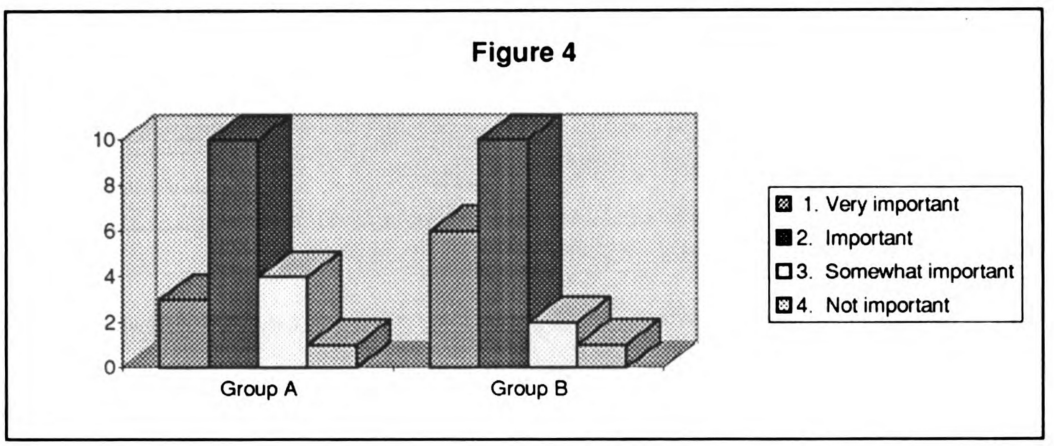


Table 3: Question 1C				
(1C) How much impact did the trail have on you moving to this area?				
	Group A	Percent	Group B	Percent
1. It was the main reason for moving here.	2	15.4	0	0
2. It was a factor in my decision to move here.	4	30.8	6	37.5
3. The trail did not impact my decision	7	54.8	10	62.5
Totals:	**13**	**100.0**	**16**	**100.0**

Most of the respondents in part three of question one stated that the trail did not impact their decision to move to the area. In fact, only two respondents from Group A stated that the trail was the main reason why they relocated to this area. However, both groups (30.8%-A, 37.5%-B) had a significant percentage of respondents who stated that the trail was a factor in their decision to move to the area.

Table 4: Question 1D					
(1D) How important is the addition of the trail to the area?					
	Group A	Percent	Group B	Percent	Chi
1. Very important	6	40	6	46	.0833
2. Important	6	40	3	23	
3. Somewhat important	3	20	4	31	
4. Not important	0	0	0	0	
Totals:	**15**	**100.0**	**13**	**100.0**	

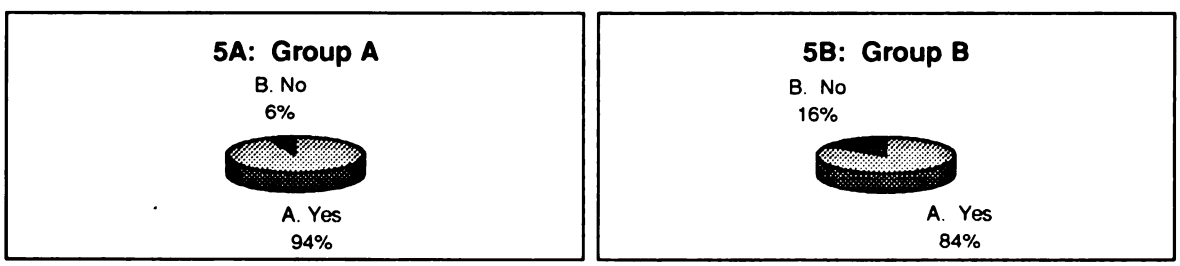
Respondents living in the area for over 14 years in both groups had somewhat similar responses (p-value=.0833) to part four of question one. The chart demonstrates that 40% of the respondents from Group A consider it to be very important, while 40% state it is important. Likewise, 46% of the respondents from Group B stated that the trail is very important and 23% stated it is important. The p-value from the chi-test indicates that there is no significant difference between either group. None of the surveyed residents stated that the trail was not important.

6.2 Question Two

Table 5: Question 2					
(2) Do you use the Paint Creek Trail?					
	Group A	Percent	Group B	Percent	Chi
A. Yes	29	93.50	27	84.37	.1628
B. No	2	6.45	5	15.63	
If yes, then how often?					
1. Once or twice per month	10	35.7	12	44.3	
2. Once per week	8	25.0	4	15.0	
3. Two to Three times per week	8	28.6	9	33.3	
4. Four to Five times per week	3	19.7	2	7.4	
5. Daily	0	0	0	0	
Totals:	**29**	**100.0**	**27**	**100.0**	

Over 90 percent of the respondents is Group A stated that they use the trail, while almost 85 percent of the respondents in Group B use the trail (Figure 5A,5B). The p-value (.1628) from the Chi-test also indicates that there is no significance between either group. Only seven respondents reported that they do not use the trail. Both groups reported the most frequent usage responses from the once or twice per week selection. There were no respondents who claimed to use the trail on a daily basis.

Figure 5A, 5B: Do You Use The Paint Creek Trail?

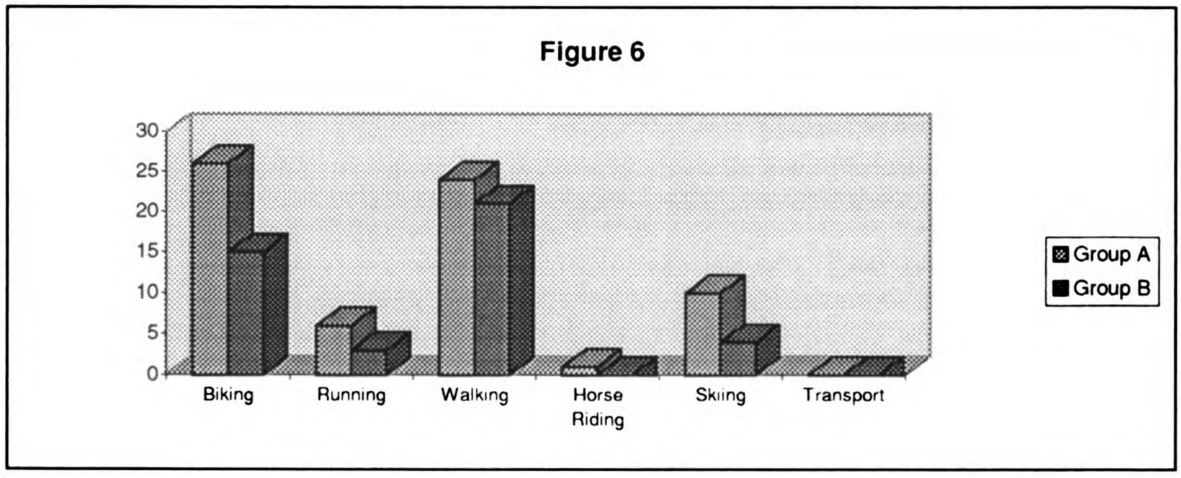


6.3 Question Three

Table 6: Question 3				
(3) What activity do you engage in on the trail?				
	Group A	Percent	Group B	Percent
A. Biking	26	38.8	15	34.9
B. Running	6	13	3	7.0
C. Walking	24	35.8	21	48.8
D. Horse riding	1	1.5	0	0
E. Skiing	10	15	4	9.3
F. Transportation	0	0	0	0
G. Other	0	0	0	0
Totals:	**67**	**100.0**	**43**	**100.0**

The results from question three indicate that respondents in Group A use the trail for a more variety of activities than the respondents in Group B. Both groups reported to use the trail mainly for walking and biking. Skiing was rated as the third most popular activity. Neither group reported to use the trail for transportation purposes (Figure 6).

Figure 6: What Activity Do You Engage In On The Trail?



6.4 Question Four

Table 7: Question 4				
(4) How much do you feel your social and recreational opportunities are improved by your location to the trail?				
Group A			**Group B**	
0 Least			0 Least	
1	0		1	2
2	0		2	1
3	1		3	0
4	1		4	1
5	1		5	0
6	3		6	6
7	1		7	0
8	**9**		8	**6**
9	**8**		9	**9**
10 Most	3		10 Most	4
Average =	**8.14**		**Average =**	**7.34**

Respondents in Group A had an average response to question four of 8.14, while Group B had an average of 7.34. Both groups had the most frequent responses to this question in the eight and nine ranking. Group A had only three responses with a rating of less than five, while Group B had four responses below this level. Overall, question four was responded to in a positive fashion.

6.5 Question Five

Table 8: Question 5							
(5) On a scale of -10 to +10, how much do you feel the property value of your home has been impacted by the trail?							
Group A				**Group B**			
-10	0	+1	0	-10	0	+1	1
-9	0	+2	1	-9	0	+2	2
-8	0	+3	5	-8	0	+3	**5**
-7	0	+4	1	-7	0	+4	3
-6	0	+5	**7**	-6	0	+5	**5**
-5	0	+6	5	-5	0	+6	0
-4	0	+7	3	-4	0	+7	2
-3	0	+8	1	-3	0	+8	1
-2	0	+9	0	-2	0	+9	0
-1	1	+10	0	-1	1	+10	1
0	0			0	0		
Average = 4.75				**Average = 4.45**			

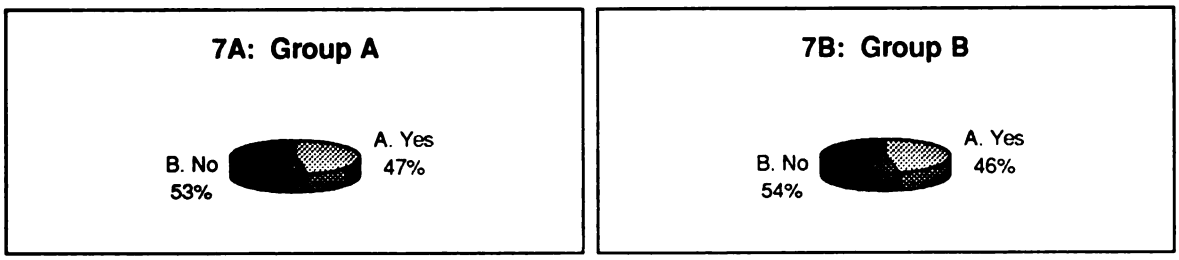
Question five had a less positive response than question four. Group A had an average response of 4.75 with the most frequent rating occurring at +5. Group B had a slightly lower average response of 4.45 and had the most frequent responses at +5 and +3. Overall, there was only one negative response (-1) from all surveyed residents in both groups.

6.6 Question Six

Table 9: Question 6 (6) Do you feel that there are any factors that lesson your enjoyment of using the trail?					
	Group A	**Percent**	**Group B**	**Percent**	**Chi**
A. Yes	15	46.8	13	46.4	.3074
B. No	17	53.2	15	53.6	
If yes, then check all that apply.					
1. Too many dogs/unleashed dogs	0	0	2	7.7	
2. Vandalism	1	3.4	0	0	
3. Gangs present	0	0	0	0	
4. Theft	1	3.4	0	0	
5. Littering on trail	2	6.9	2	7.7	
6. Too much noise	0	0	1	3.8	
7. Speeding bikers	8	27.6	9	34.6	
8. Presence of horses	4	13.8	1	3.8	
9. Horse droppings	6	20.7	4	15.4	
10. Others	7	24.1	7	26.9	
Totals:	**29**	**100.0**	**26**	**100.0**	

There was a combination of yes and no responses to question six from both groups (Figure 7A, 7B). In Group A, almost 47% of the respondents stated there are factors that lessen their enjoyment of using the trail, while about 53% stated they have no problems using the trail. Respondents from Group B had an almost identical profile (46.4% yes, 53.7% no). The p-value for the Chi-test indicates that both groups did not significantly differ from one another. However both groups did report factors that diminish the enjoyment of using the trail. Overall, speeding bikers was the most common concern of both groups, while horse droppings was also a major concern for the residents. These concerns are reflected more as minor annoyances rather than as major disturbances. Vandalism, gangs, and theft were not significant factors reported by either group.

Figure 7A, 7B: Do You Feel There Are Any Factors That Lesson Your Enjoyment?



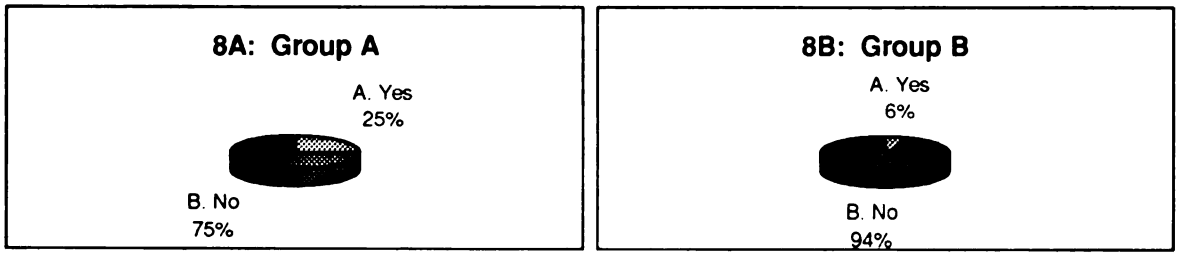
6.7 Question Seven

Table 10: Question 7 (7) Do you feel that there are any factors that lesson your enjoyment from living near the trail?					
	Group A	Percent	Group B	Percent	Chi
A. Yes	8	25.0	2	6.0	.0183
B. No	24	75.0	30	94.0	
If yes, then check all that apply.					
1. Too many dogs/unleashed dogs	0	0	2	28.6	
2. Vandalism	0	0	0	0	
3. Gangs present	0	0	0	0	
4. Theft	0	0	0	0	
5. Littering on trail	2	15.4	0	0	
6. Too much noise	3	23.1	1	14.3	
7. Speeding bikers	1	7.7	2	28.6	
8. Presence of horses	1	7.7	0	0	
9. Horse droppings	1	7.7	1	14.3	
10. Others	5	38.5	1	14.3	
Totals:	**13**	**100.0**	**7**	**100.0**	

The results from question seven indicate that the majority of respondents in both groups do not feel that there are any factors that negatively effect living near the trail (Figure 8A, 8B). However, there was a significant difference in opinions between Group A and Group B. 25 percent of the respondents in Group A felt that there are factors that lessen their enjoyment of living near the trail, while only six percent of the respondents in Group B had the same opinion. The p-value for

the Chi-test between Groups A and B in fact indicate a significant difference in opinions. Residents living along the trail had more negative responses. But most of these responses were related to noise, littering and others (trespassing, illegal parking), which are not major concerns. Theft, vandalism, and gangs were not reported by either group as negative factors associated with living near the trail. Since residents living along the trail are more influenced by its presence, the difference in opinions between both groups is expected.

Figure 8A, 8B: Are There Any Factors That Lessen Your Enjoyment?



6.8 Question Eight

Table 11: Question 8A						
(8A) Do you feel safe using the Paint Creek Trail?						
		Group A	Percent	Group B	Percent	Chi
A. Yes		30	93.75	29	90.6	0.54419
B. No		2	6.25	3	9.4	
Group A			**Group B**			
0	0		0	0		
1	0		1	0		
2	0		2	0		
3	0		3	0		
4	2		4	0		
5	2		5	3		
6	0		6	0		
7	3		7	4		
8	7		8	**12**		
9	**8**		9	4		
10	7		10	3		
Average =	**7.9**		**Average =**	**7.1**		

Both groups in question eight responded in a very positive fashion (Figure 9A, 9B). Only five respondents from both groups felt unsafe on the trail. Since both groups had almost identical results, the p-value in the Chi-test (.54419) revealed no significant difference between the two groups. The respondents who did feel unsafe on the trail stated that speeding bikes was the main reason (see Table 12). Respondents in Group A gave the trail an average safety rating of 7.9, with rating nine being the most frequent rank. Meanwhile, Group B respondents gave the trail an average rating of 7.1, and rating eight received the most selections.

Figure 9A, 9B: Do You Feel Safe Using The Trail?

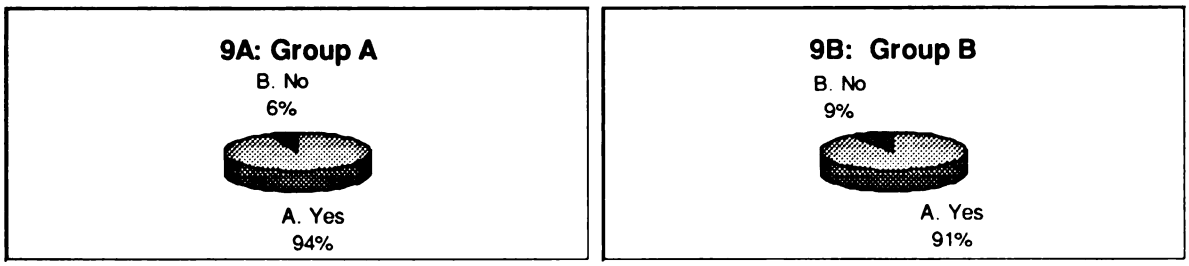


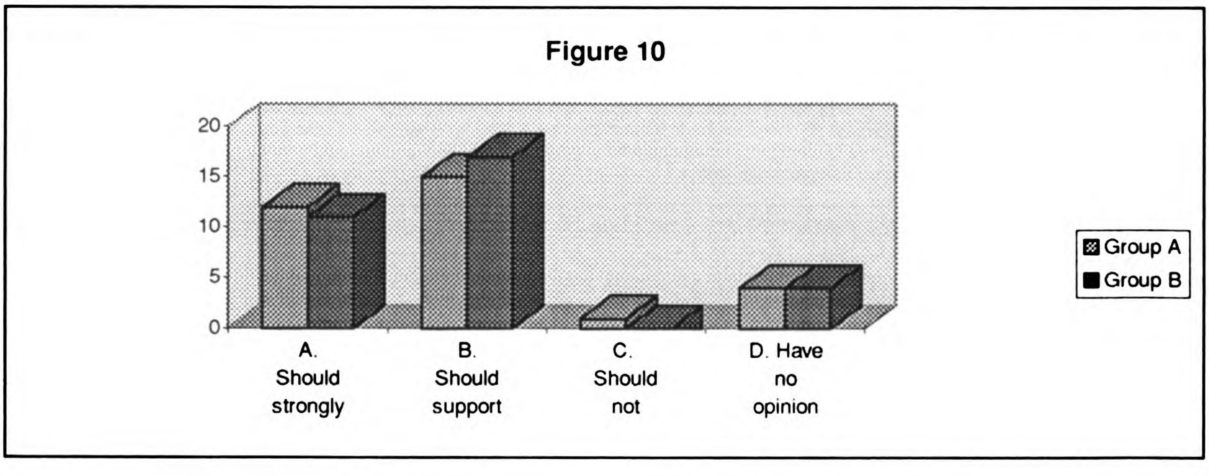
Table 12: Question 8B				
(8B) If feel unsafe				
If no, then check all reasons that apply.	Group A	Percent	Group B	Percent
1. Lack of police	0	0	0	0
2. Crime	0	0	0	0
3. Gang Activity	0	0	0	0
4. Lack of signage	0	0	0	0
5. Speeding bikes	2	100	2	50.0
6. Unleashed dogs	0	0	1	25.0
7. Horses	0	0	0	0
8. Other	0	0	1	25.0
Totals:	**2**	**100.0**	**4**	**100.0**

6.9 Question Nine

Table 13: Question 9 (9) Based on your experience with the trail, do you think communities proposing to build a trail should:					
	Group A	Percent	Group B	Percent	Chi
A. Support it and make it a top priority	12	37.5	11	34.4	.3636
B. Support it, but place it in a lower priority	15	46.9	17	53.1	
C. Not support it	1	3.1	0	0	NA
D. Have no opinion	4	12.5	4	12.5	
Totals:	**32**	**100.0**	**32**	**100.0**	

The responses from both groups in question nine were positive. In Group A, 37.5 percent of the respondents would strongly support a new trail and 46.9 percent would support it, but place it in a lower priority. Group B had a similar result with 34.4% of the respondents strongly supporting the trail, and 53.1% supporting it. Overall, only one respondent stated that communities should not propose building new trails (Figure 10). The p-value for the Chi-test indicates that both groups have very similar opinions about proposing new trails.

Figure 10: What Do You Think About The Paint Creek Trail?



6.10 Question Ten

Table 14: Question 10							
(10) On a scale of -10 to +10 (-10 lowest, +10 highest), How much of an asset do you feel the trail is to local residents?							
Group A				**Group B**			
-10	0	+1	0	-10	0	+1	0
-9	0	+2	1	-9	0	+2	1
-8	0	+3	1	-8	0	+3	2
-7	0	+4	2	-7	0	+4	2
-6	0	+5	6	-6	0	+5	**9**
-5	0	+6	4	-5	0	+6	3
-4	0	+7	3	-4	0	+7	2
-3	0	+8	**9**	-3	0	+8	**9**
-2	0	+9	2	-2	0	+9	0
-1	0	+10	1	-1	0	+10	3
0	3			0	2		
Average = 5.8				**Average = 6.1**			

There was a fairly positive response to question ten. Both groups had very similar positive ratings, coupled with no negative responses. The most frequent rating for both groups was +8, but since there were many respondents who gave lower ratings, the overall average rating values declined. It should be noted that question ten was often difficult for people to answer. Rating the asset value of the trail was often an ambiguous and intricate process. As a result answers were more diverse than the previous rating questions.

6.11 Question Eleven

Table 15: Question 11							
(11) On a scale of -10 to +10 (-10 lowest, +10 highest), How much of an impact has the trail had on improving the quality of your life'							
Group A				**Group B**			
-10	0	+1	1	-10	0	+1	0
-9	0	+2	1	-9	0	+2	3
-8	0	+3	0	-8	0	+3	5
-7	0	+4	3	-7	0	+4	3
-6	0	+5	**7**	-6	0	+5	**8**
-5	0	+6	**7**	-5	0	+6	1
-4	0	+7	3	-4	0	+7	1
-3	0	+8	5	-3	0	+8	2
-2	0	+9	1	-2	0	+9	0
-1	0	+10	1	-1	0	+10	1
0	4			0	7		
Average = 5.4				**Average = 3.5**			

Question eleven was also a difficult question to answer for the surveyed residents. Consequently, many people gave a 0 rating, which reflected a no comment type of response. But the responses were more positive from people in Group A as compared with Group B. Group A had an average response of 5.4, with the most frequent ratings occurring at +5 and +6. Group B had a smaller average of 3.5, with the most frequent rating occurring at +5. Neither group felt that the trail has a negative effect on their quality of life.

6.12 Question Twelve

Table 16: Question 12 (12) What changes could the Paint Creek Trail Commission make that would result in greater benefits to residents?				
	Group A	Percent	Group B	Percent
A. Increase signage	1	1.9	2	4.3
B. Limit access points along trail	4	7.7	1	2.2
C. Provide more public access points	6	11.5	7	15.2
D. Increase police patrols by horse	1	1.9	1	2.2
E. Increase police patrols by bicycle	**14**	26.9	**14**	30.4
F. Prohibit dogs	0	0	0	0
G. Increased effort of leash law	5	9.6	6	13.0
H. Construct additional fencing along properties	4	7.7	0	0
I. Institute speed limits for bikers	8	15.4	9	19.6
J. Other	9	17.3	6	13.0
Totals:	**52**	**100.0**	**46**	**100.0**

Both groups had a variety of suggestions for the Paint Creek Trailways Commission. The most common suggestions made to the commission by both groups was to increase police patrols by bike for the trail. Other significant suggestions include instituting speed limits for bikers, creating more access points, and increasing the leash law effort. The other category refers to suggestions, such as prohibiting smoking, improving the maintenance of the trail, and adding more trash receptacles.

Section 7: Conclusions

7.1 Survey Discussion

The results from this survey appear to reflect a very positive response to the Paint Creek Trail by the 64 participants. The trail was regarded by most of the respondents as being a very important feature to the area. Despite the fact that most of the respondents claimed the trail did not directly impact their choice to move to the area, almost every person interviewed uses the trail for more than one type of activity at least once or twice per month. The survey results also indicate that most respondents feel that the trail improves the recreational and other social opportunities for the area, and has a positive impact on the property value of their home.

There were some respondents who did feel that there are negative influences associated with the trail. A small percentage of the respondents claimed that the trail is often dangerous, especially on weekends. Speeding bikers, horses, and horse droppings were regarded as the dangers, which lessened the overall enjoyment of using the trail. There were also some respondents who felt that there are negative factors that diminish the enjoyment of living adjacent to or within ½ mile of the trail. Noise, littering, and trespassing were reported to be major concerns by these residents. However, these concerns were only addressed by about 15 percent of the respondents. Crime, vandalism, and gangs were not mentioned as being negative influences associated with the trail. Overall, there was no significant difference in opinions between Group A and Group B. However, there was a difference in opinions between Group A and Group B regarding question seven. Group A had more respondents who felt there are some negative influences that diminish their enjoyment of living near the trail. This difference can probably be

related to the adjacent location of Group A respondents.

The survey results also reveal that almost every user of the trail considers it to be a safe trail. The respondents from both groups in fact rated the trail's safety very high. Respondents who felt unsafe mainly attributed it to speeding bikers, especially on busy weekends.

The majority of respondents further support the Paint Creek Trail by suggesting to other communities proposing new trails to support them, and consider them as being an important part of the county. Respondents also felt that the trail increases the quality of their lives, thereby making it a valuable asset to the area. To make the trail an even greater asset to local residents, the respondents also suggested that the Paint Creek Trailways Commission increase police patrols by bicycles, increase a leash law effort for dogs, institute speed limits for bikers and provide more public access points. Overall, the results indicate that the respondents of this survey appreciate and support the Paint Creek Trail, and the effort that the Paint Creek Trailways Commission is making to maintain and improve the trail's condition. Appendix C contains the survey results from both groups as well as the total combined results for all 64 households.

The results from this survey not only further support the Paint Creek Trail, but they also provide planners and designers with a positive example of how greenways enhance the quality of life for the areas they serve. Since planning and designing greenways often involves opposition and controversy, studies such as this survey can help support the overall greenway movement. This survey by no means represents the first ever study on the benefits on greenways for local residents, but it does provide a contribution to the current body of research on greenways. Therefore, this study has helped to build and support the current research on the perceived benefits of greenways, as well as providing valuable information to the Paint Creek Trailways

Commission. This report can be used as an example in future research by planners, designers, and students to demonstrate the positive impacts that greenways can have on the areas they serve.

7.2 Recommendations To Commission

There are future areas of research that are needed for the Paint Creek Trail. This list provides a few examples. These suggestions would enable the Paint Creek Trailways Commission to better serve users and area residents living near the trail. They would also help the trail become an even greater asset to the people of Oakland County.

(1) User Survey: Some of the respondents noted how there are many people from outside the community that use the Paint Creek Trail on weekends. A user survey should be performed to obtain an estimate of where users come from. This would help the commission to determine how large an area the trail serves. It would also help to determine where there is a potential need for other greenways across the region.

(2) Study Safety: The most significant negative factor indicated in this survey was the issue of speeding bikers and safety. As the trail grows in popularity, there will be a greater potential for more accidents. The commission should consider either creating a biking of walking lane, or increasing the width of the trail. The installation of a traffic light at the Tienken Road intersection should also be studied. Coordination with the Oakland County Roads Commission would be required for this endeavor.

(3) Quantify Property Values: Many respondents felt their property values were positively impacted by the trail. However, there is currently no quantified percentage or amount defined. The commission should work with local realtors to perform a study of homes located near the trail to determine its economic benefits.

7.3 Survey Results Summary

- The survey indicated that respondents living along the trail have been in the area longer than respondents living within ½ mile.

- The majority of respondents from both groups feel the trail is very important to the area.

- The majority of respondents from both groups feel the trail did not impact their decision to move to the area. However, a significant number of respondents did feel the trail was a factor in moving to the area.

- Almost all of the respondents (89%) in both groups use the Paint Creek Trail.

- The trail is primarily used once or twice per month or once per week.

- The most popular activities on the trail are biking and walking.

- Respondents rated the trail very positively with regards to its ability to provide recreational and other social opportunities.

- Most of the respondents feel the trail moderately impacts the property values of their homes.

- Both groups have a significant amount of respondents who feel there are some negative factors that lessen the enjoyment of using the trail. The most common factors were speeding bikers and horse droppings.

- Group A had several respondents that felt there are factors that lessen the enjoyment of living near the trail. Group B only had two respondents. The most common negative factors were littering, noise and trespassing.

- The majority of respondents (86%) in both groups would urge other communities to build trails like the Paint Creek Trail.

- The respondents in both groups consider the Paint Creek Trail to be a good asset to the area.

- The respondents from both groups felt that the Paint Creek Trail has a positive effect on the quality of their lives.

- The Paint Creek Trailways Commission should create more benefits to residents by increasing police patrols by bicycle, creating more access points, and by increasing the leash law effort for dogs.

7.4 Paper Conclusions

This paper has explored the multitude of benefits that greenways bring to communities. As populations continue to grow and as cities spread throughout the countryside, consuming wetlands, farms, fields, and forests, a great effort is needed to preserve the remainder of our natural heritage. Our society is in dire need to reconnect ourselves to the natural environment. Thus, a process of connecting the city to the countryside by means of greenways is an ideal solution in the enhancement and improvement of our quality of life. Greenways are by no means the only solution the problems facing urban and suburban America. They are, however, a major step in the right direction.

The results from the 64 household survey of residents living near the Paint Creek Trail represents a very positive and successful greenway in Oakland County, Michigan. The participants in the survey overwhelmingly support the trail and stated that it was a significant asset to the area's residents. The common misperceptions of crime, vandalism, and gangs often associated with greenways was reported by the respondents as being almost nonexistent. As a result, the respondents of this survey regard the Paint Creek Trail as a significant factor in the overall positive impact of the quality of their lives.

Based on the results of the survey, the Paint Creek Trail should be regarded as a great benefit to the citizens of Oakland County. Since the population surrounding the trail is expected to grow, while vacant land will continue to be developed, an even greater demand for public recreational areas will take place. As a result, trails like Paint Creek will become cherished and valuable assets to the people across the nation. Therefore, the Paint Creek Trail and the Paint Creek Trailways Commission serves as a model of success of the effort in this nation to enhance

the quality of life for communities through the creation of greenways.

"By preserving the land in its natural state...you allow the natural system as God designed it to function. If you think of greenways as means to provide a place for biological communities in their natural state to be maintained, and if at the same time you provide human access to the greenway corridor, you have given people a means to look at our world in a different way." (Little 1990: 212)

This statement in "Greenways for America" epitomizes the need for reconnecting ourselves to nature. Once urban and suburban society begins to look at nature as being a part of our heritage and a necessity for our health and vitality as the people of Oakland County have done, more communities in America will then truly become pleasant places to live. As our nation develops and expands into the 21st Century, planners and citizens will need to find a way to achieve a balanced quality of life while remaining connected to nature. Hence, adding greenways to our cities will ensure that all Americans have an ecological link to the future.

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APPENDIX A

GROUP B RANDOM SAMPLING LIST

Survey Group B: Randomly Sampled Households (32)

Block 4
Lake Orion
3 surveys
(1) Grampian Avenue
(2) Grampian Avenue
(3) Grampian Court

Block 6
Lake Orion
1 survey
(1) Newton Street

Block 7
Lake Orion
1 survey
(1) River Valley

Block 8
Lake Orion
1 survey
(1) Glanworth

Block 9
Lake Orion
1 survey
(1) Summer

Block 15
Oakland Township
1 survey
(1) Orion Road

Block 18
Oakland Township
2 surveys
(1) Serenity
(2) Wains

Block 22
Oakland Township
1 survey
(1) Pear Tree

Block 27
Oakland Township
1 survey
(1) Shannon Drive

Block 32
Oakland Township
1 survey
(1) W. Gunn Rd.

Block 38
Oakland Township
1 survey
(1) Oak Bridge

Block 44
Oakland Township
1 survey
(1) Wood Bridge

Block 51
Rochester Hills
1 survey
(1) Fairview Court

Block 53
Rochester Hills
1 survey
(1) Peach Blossom

Block 58
Rochester Hills
1 survey
(1) Paddle Wheel

Block 61
Rochester Hills
1 survey
(1) Candlestick

Block 63
Rochester Hills
1 survey
(1) Tienken Road

Block 64
Rochester Hills
1 survey
(1) Greenview

Block 73
Rochester
1 survey
(1) Winry Drive

Block 76
Rochester
1 survey
(1) Wilcox .

Block 82
Rochester
2 surveys
(1) Ferndale
(2) Oak Street

Block 19
Oakland Township
1 survey
(1) Serenity

Block 85
Rochester
1 survey
(1) Lysader St.

Block 87
Rochester
1 survey
(1) Griggs

Block 88
Oakland
1 survey
(1) Buell

Block 54
Rochester Hills
2 surveys
(1) Cherry Tree Lane
(2) Orion Road

Block 83
Rochester
1 survey
(1) Ferndale

APPENDIX B

PAINT CREEK TRAIL SURVEY INSTRUMENT

Paint Creek Trail Survey Questionnaire

Introduction/Consent Procedures

Hello, my name is Robert Balmes. I am a graduate student in the Urban and Regional Planning Program at Michigan State University. With the assistance and support of the Paint Creek Trailways Commission, I am conducting a survey of residents living near the Paint Creek Trail as part of my graduate research project. In my survey, I am essentially asking citizens how the Paint Creek Trail has affected their quality of life and whether they have received benefits from living near the trail.

The survey takes about 5 to 10 minutes to answer. If you have time to take part in this survey, I'd greatly appreciate your participation. Every household that I survey has been randomly selected. Therefore, you will remain anonymous and your answers will be confidential information. If you wish to receive a copy of the survey results, you have the option of leaving your name and address at the beginning of the questionnaire. You can also contact the Paint Creek Trailways Commission if there are any questions or concerns regarding my survey.

Optional Question: If you would like to receive a copy of the survey results, please submit your name, address and zip code. Thank you for your participation.

_____

_____

_____

Survey # _____ Street _____ Block # _____ CTY/TWP _____

1) How long have you lived in this home?

A. _____ 0 to 7 years

If resident selected "A", then how important is the trail to the area?

1. _____ Very important
2. _____ Important
3. _____ Somewhat important
4. _____ Not important

If resident selected "A", then how much impact did the Paint Creek Trail have on you moving to this area?

1. _____ It was the main reason for moving here.
2. _____ It was a factor in my decision to move here.
3. _____ The trail did not impact my decision to move here.

B. _____ More than 7 but less than 14 years

If resident selected "B", then how important is the trail to the area?

1. _____ Very important
2. _____ Important
3. _____ Somewhat important
4. _____ Not important

If resident selected "B", then how much impact did the Paint Creek Trail have on you moving to this area?

1. _____ It was the main reason for moving here.
2. _____ It was a factor in my decision to move here.
3. _____ The trail did not impact my decision to move here.

C. _____ More than 14 years

If resident selected "C", then how important has the addition of the trail been to the area?

1. _____ Very important
2. _____ Important
3. _____ Somewhat important
4. _____ Not important

2) Do you use the Paint Creek Trail?

A. _____ Yes

If yes, then how often?

1. _____ Once or twice per month
2. _____ Once per week
3. _____ Two to Three times per week
4. _____ Four to Five times per week
5. _____ Daily

B. _____ No

3) If resident selected "A" on question 2, then:
What activity do you engage in on the trail? (select all that apply)

A. _____ Biking
B. _____ Running
C. _____ Walking
D. _____ Horse riding
E. _____ Skiing
F. _____ Transportation
G. _____ Other _____

4) On a scale of 0 to 10, (0 least, 10 most), how much do you feel your social and recreational opportunities (i.e. biking, walking, socializing) are improved by your proximity to the trail?

0 1 2 3 4 5 6 7 8 9 10
Least Most

5) On a scale of -10 to +10, how much do you feel the property value of your home has been impacted by the presence of the trail?

-10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10
Least Most

6) Do you feel that there are any factors that lessen your enjoyment of using the trail?

A. _____ Yes
If yes, then check all that apply.
1. _____ Too many dogs/unleashed dogs
2. _____ Vandalism
3. _____ Gangs present
4. _____ Theft
5. _____ Littering on trail
6. _____ Too much noise
7. _____ Speeding bikers
8. _____ Presence of horses
9. _____ Horse droppings
10. _____ Others _____

B. _____ No

7) Do you feel that there are any factors that lessen your enjoyment from living near the trail?

A. _____ Yes
If yes, then check all that apply.
1. _____ Too many dogs/unleashed dogs
2. _____ Vandalism
3. _____ Gangs present
4. _____ Theft (Continued next page)

5. _____ Littering on trail
6. _____ Too much noise
7. _____ Speeding bikers
8. _____ Presence of horses
9. _____ Horse droppings
10. _____ Others _____

B. _____ No

8) Do you feel safe using the Paint Creek Trail?

A. _____ Yes

If yes, then on a scale of 0 to 10, rate how safe.

0 1 2 3 4 5 6 7 8 9 10

Least safe Most safe

B. _____ No

If no, then check all reasons that apply.

1. _____ Lack of police
2. _____ Crime
3. _____ Gang Activity
4. _____ Lack of signage
5. _____ Speeding bikes
6. _____ Unleashed dogs
7. _____ Horses
8. _____ Other _____

9) Based on your experience with the trail, do you think communities proposing to build a trail:

A. _____ Should strongly support it and make it a top priority
B. _____ Should support it, but place it in a lower priority
C. _____ Should not support it
D. _____ Have no opinion

10) On a scale of -10 to +10 (-10 lowest, +10 highest), How much of an asset do you feel the trail is to local residents?

-10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10

Negative None Good Great

11) On a scale of -10 to +10 (-10 lowest, +10 highest), How much of an impact has the trail had on improving the quality of your life?

-10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10

Negative None Good Great

12) What changes could the Paint Creek Trail Commission make that would result in greater benefits to residents?

A. _____ Increase signage
B. _____ Limit access points along trail
C. _____ Provide more public access points
D. _____ Increase police patrols by horse
E. _____ Increase police patrols by bicycle
F. _____ Prohibit dogs
G. _____Increased effort of leash law
H. _____ Construct additional fencing along private properties
I. _____ Institute speed limits for bikers
J. _____ Other _____

13) Overall, what do you like the most about the Paint Creek Trail?

_____
_____
_____
_____

14) Would you like to make any comments not covered in this survey?

_____
_____
_____
_____

MICHIGAN STATE
UNIVERSITY

October 7, 1997

TO: Jon B. Burley
101 UP&LA Building

RE: IRB#: 97-658
TITLE: GREENWAYS: IMPROVING THE QUALITY OF LIFE IN OAKLAND COUNTY, MICHIGAN
REVISION REQUESTED: N/A
CATEGORY: 1-C
APPROVAL DATE: 10/02/97

The University Committee on Research Involving Human Subjects (UCRIHS) review of this project is complete. I am pleased to advise that the rights and welfare of the human subjects appear to be adequately protected and methods to obtain informed consent are appropriate. Therefore, the UCRIHS approved this project and any revisions listed above.

RENEWAL: UCRIHS approval is valid for one calendar year, beginning with the approval date shown above. Investigators planning to continue a project beyond one year must use the green renewal form (enclosed with the original approval letter or when a project is renewed) to seek updated certification. There is a maximum of four such expedited renewals possible. Investigators wishing to continue a project beyond that time need to submit it again for complete review.

REVISIONS: UCRIHS must review any changes in procedures involving human subjects, prior to initiation of the change. If this is done at the time of renewal, please use the green renewal form. To revise an approved protocol at any other time during the year, send your written request to the UCRIHS Chair, requesting revised approval and referencing the project's IRB # and title. Include in your request a description of the change and any revised instruments, consent forms or advertisements that are applicable.

PROBLEMS/ CHANGES: Should either of the following arise during the course of the work, investigators must notify UCRIHS promptly: (1) problems (unexpected side effects, complaints, etc.) involving human subjects or (2) changes in the research environment or new information indicating greater risk to the human subjects than existed when the protocol was previously reviewed and approved.

If we can be of any future help, please do not hesitate to contact us at (517)355-2180 or FAX (517)432-1171.

Sincerely,

David E. Wright, Ph.D.
UCRIHS Chair

DEW:bed

cc: Robert Balmes ✓

OFFICE OF
RESEARCH AND GRADUATE STUDIES

University Committee on Research Involving Human Subjects (UCRIHS)

Michigan State University
246 Administration Building
East Lansing, Michigan
48824-1046

517/355-2180
FAX: 517/432-1171

APPENDIX C

SURVEY RESULTS

Group A & B Survey Totals

(1) How long have you lived in this home?

	Group A	Percent	Group B	Percent	Chi
A. 0 to 7 years	3	9.38	13	40.63	0.000127
B. More than 7, less than 14 years	14	43.75	7	21.88	
A & B Combined	17		20		0.273322
C. More than 14 years	15	46.88	12	37.5	
Totals:	**32**	**100**	**32**	**100**	

How important is the trail to the area?	Group A	Percent	Group B	Percent	Chi
1. Very important	3	16.7	6	31.5	0.220671
2. Important	10	55.6	10	52.7	
3. Somewhat important	4	22.2	2	10.5	0.1573
4. Not important	1	5.5	1	**5.2**	
Totals:	**18**	**100**	**19**	**100**	

How much impact did the trail have on you moving to this area?

	Group A	Percent	Group B	Percent
1. It was the main reason for moving here.	2	15.4	0	0
2. It was a factor in my decision to move here.	4	30.8	6	37.5
3. The trail did not impact my decision	7	54.8	10	62.5
Totals:	**13**	**100**	**16**	**100**

How important is the addition of the trail to the area?

	Group A	Percent	Group B	Percent	Chi
1. Very important	6	40	6	46	0.0833
2. Important	6	40	3	23	
3. Somewhat important	3	20	4	31	
4. Not important	0	0	0	0	
Totals:	**15**	**100**	**13**	**100**	

(2) Do you use the Paint Creek Trail?	Group A	Percent	Group B	Percent	Chi
A. Yes	29	93.5	27	84.37	0.1628
B. No	2	6.45	5	15.63	
If yes, then how often?					
1. Once or twice per month	10	35.7	12	44.3	
2. Once per week	8	25	4	15	
3. Two to Three times per week	8	28.6	9	33.3	
4. Four to Five times per week	3	19.7	2	7.4	
5. Daily	0	0	0	0	
Totals:	**29**	**100**	**27**	**100**	

(3) If resident selected "A" on question 2, then:
What activity do you engage in on the trail? (select all that apply)

	Group A	Percent	Group B	Percent
A. Biking	26	38.8	15	34.9
B. Running	6	13	3	7
C. Walking	24	35.8	21	48.8
D. Horse riding	1	1.5	0	0
E. Skiing	10	15	4	9.3
F. Transportation	0	0	0	0
G. Other	0	0	0	0
Totals:	**67**	**100**	**43**	**100**

(4) On a scale of 0 to 10, (0 least, 10 most), how much do you feel your social and recreational opportunities are improved by your location to the trail?

Group A		**Group B**	
0 Least		0 Least	
1	**0**	1	**2**
2	**0**	2	**1**
3	**1**	3	**0**
4	**1**	4	**1**
5	**1**	5	**0**
6	**3**	6	**6**
7	**1**	7	**0**
8	**9**	8	**6**
9	**8**	9	**9**
10 Most	**3**	10 Most	**4**
Average =	**8.14**	**Average =**	**7.34**

(5) On a scale of -10 to +10, how much do you feel the property value of your home has been impacted by the trail?

Group A				**Group B**			
-10	**0**	+1	**0**	-10	**0**	+1	**1**
-9	**0**	+2	**1**	-9	**0**	+2	**2**
-8	**0**	+3	**5**	-8	**0**	+3	**5**
-7	**0**	+4	**1**	-7	**0**	+4	**3**
-6	**0**	+5	**7**	-6	**0**	+5	**5**
-5	**0**	+6	**5**	-5	**0**	+6	**0**
-4	**0**	+7	**3**	-4	**0**	+7	**2**
-3	**0**	+8	**1**	-3	**0**	+8	**1**
-2	**0**	+9	**0**	-2	**0**	+9	**0**
-1	**1**	+10	**0**	-1	**1**	+10	**1**
0	**0**			0	**0**		
Average =	**4.75**			**Average=**	**4.45**		

(6) Do you feel that there are any factors that lesson your enjoyment of using the trail?	Group A	Percent	Group B	Percent	Chi
A. Yes	15	46.8	13	46.4	0.448532
B. No	17	53.2	15	53.6	
If yes, then check all that apply.					
1. Too many dogs/unleashed dogs	0	0	2	7.7	
2. Vandalism	1	3.4	0	0	
3. Gangs present	0	0	0	0	
4. Theft	1	3.4	0	0	
5. Littering on trail	2	6.9	2	7.7	
6. Too much noise	0	0	1	3.8	
7. Speeding bikers	8	27.6	9	34.6	
8. Presence of horses	4	13.8	1	3.8	
9. Horse droppings	6	20.7	4	15.4	
10. Others	7	24.1	7	26.9	
Totals:	**29**	**100**	**26**	**100**	

(7) Do you feel that there are any factors that lesson your enjoyment from living near the trail?	Group A	Percent	Group B	Percent	Chi
A. Yes	8	25	2	6	0.00183
B. No	24	75	30	94	
If yes, then check all that apply.					
1. Too many dogs/unleashed dogs	0	0	2	28.6	
2. Vandalism	0	0	0	0	
3. Gangs present	0	0	0	0	
4. Theft	0	0	0	0	
5. Littering on trail	2	15.4	0	0	
6. Too much noise	3	23.1	1	14.3	
7. Speeding bikers	1	7.7	2	28.6	
8. Presence of horses	1	7.7	0	0	
9. Horse droppings	1	7.7	1	14.3	
10. Others	5	38.5	1	14.3	
Totals:	**13**	**100**	**7**	**100**	

(8) Do you feel safe using the Paint Creek Trail?

	Group A	Percent	Group B	Percent	Chi
A. Yes	30	93.75	29	90.6	0.5442
B. No	2	6.25	3	9.4	

Group A		**Group B**	
0	**0**	0	**0**
1	**0**	1	**0**
2	**0**	2	**0**
3	**0**	3	**0**
4	**2**	4	**0**
5	**2**	5	**3**
6	**0**	6	**0**
7	**3**	7	**4**
8	**7**	8	**12**
9	**8**	9	**4**
10	**7**	10	**3**
Average =	**7.9**	**Average =**	**7.1**

If no, then check all reasons that apply.	Group A	Percent	Group B	Percent
1. Lack of police	0	0	0	0
2. Crime	0	0	0	0
3. Gang Activity	0	0	0	0
4. Lack of signage	0	0	0	0
5. Speeding bikes	2	100	2	50
6. Unleashed dogs	0	0	1	25
7. Horses	0	0	0	0
8. Other	0	0	1	25
Totals:	**2**	**100**	**4**	**100**

(9) Based on your experience with the trail, do you think communities proposing

to build a trail should:	Group A	Percent	Group B	Percent
A. Strongly support it and make it a top priority	12	37.5	11	34.4
B. Support it, but place it in a lower priority	15	46.9	17	53.1
C. Not support it	1	3.1	0	0
D. Have no opinion	4	12.5	4	12.5
Totals:	**32**	**100**	**32**	**100**

(10) On a scale of -10 to +10 (-10 lowest, +10 highest), How much of an asset do you feel the trail is to local residents?

Group A				**Group B**			
-10	**0**	+1	**0**	-10	**0**	+1	**0**
-9	**0**	+2	**1**	-9	**0**	+2	**1**
-8	**0**	+3	**1**	-8	**0**	+3	**2**
-7	**0**	+4	**2**	-7	**0**	+4	**2**
-6	**0**	+5	**6**	-6	**0**	+5	**9**
-5	**0**	+6	**4**	-5	**0**	+6	**3**
-4	**0**	+7	**3**	-4	**0**	+7	**2**
-3	**0**	+8	**9**	-3	**0**	+8	**9**
-2	**0**	+9	**2**	-2	**0**	+9	**0**
-1	**0**	+10	**1**	-1	**0**	+10	**3**
0	**3**			0	**2**		
Average =	**5.8**			**Average =**	**6.1**		

(11) On a scale of -10 to +10 (-10 lowest, +10 highest), How much of an impact has the trail had on improving the quality of your life?

Group A				**Group B**			
-10	**0**	+1	**1**	-10	**0**	+1	**0**
-9	**0**	+2	**1**	-9	**0**	+2	**3**
-8	**0**	+3	**0**	-8	**0**	+3	**5**
-7	**0**	+4	**3**	-7	**0**	+4	**3**
-6	**0**	+5	**7**	-6	**0**	+5	**8**
-5	**0**	+6	**7**	-5	**0**	+6	**1**
-4	**0**	+7	**3**	-4	**0**	+7	**1**
-3	**0**	+8	**5**	-3	**0**	+8	**2**
-2	**0**	+9	**1**	-2	**0**	+9	**0**
-1	**0**	+10	**1**	-1	**0**	+10	**1**
0	**4**			0	**7**		
Average =	**5.4**			**Average =**	**3.5**		

(12) What changes could the Paint Creek Trail Commission make that would result in greater benefits to residents?

	Group A	Percent	Group B	Percent
A. Increase signage	1	1.9	2	4.3
B. Limit access points along trail	4	7.7	1	2.2
C. Provide more public access points	6	11.5	7	15.2
D. Increase police patrols by horse	1	1.9	1	2.2
E. Increase police patrols by bicycle	14	26.9	14	30.4
F. Prohibit dogs	0	0	0	0
G. Increased effort of leash law	5	9.6	6	13
H. Construct additional fencing along properties	4	7.7	0	0
I. Institute speed limits for bikers	8	15.4	9	19.6
J. Other	9	17.3	6	13
Totals:	**52**	**100**	**46**	**100**

Totals From 64 Households

(1) How long have you lived in this home?

	Totals	Percent
A. 0 to 7 years	16	25
B. More than 7, less than 14 years	21	33
A & B Combined	37	
C. More than 14 years	27	42
Totals:	**64**	**100**

How important is the trail to the area?	Totals	Percent
1. Very important	9	24.3
2. Important	20	54
3. Somewhat important	6	16.2
4. Not important	2	5.5
Totals:	**37**	**100**

How much impact did the trail have on you moving to this area?

	Totals	Percent
1. It was the main reason for moving here.	2	6.9
2. It was a factor in my decision to move here.	10	34.4
3. The trail did not impact my decision	17	58.6
Totals:	**29**	**100**

How important is the addition of the trail to the area?

	Totals	Percent
1. Very important	12	42.9
2. Important	9	32.1
3. Somewhat important	7	25
4. Not important	0	0
Totals:	**28**	**100**

(2) Do you use the Paint Creek Trail?	Totals	Percent
A. Yes	56	89
B. No	7	11
If yes, then how often?		
1. Once or twice per month	22	39.2
2. Once per week	12	21.4
3. Two to Three times per week	17	30.4
4. Four to Five times per week	5	8.9
5. Daily	0	0
Totals:	**56**	**100**

(3) If resident selected "A" on question 2, then:
What activity do you engage in on the trail? (select all that apply)

	Totals	Percent
A. Biking	41	37.2
B. Running	9	8.1
C. Walking	45	41
D. Horse riding	1	0.9
E. Skiing	14	12.7
F. Transportation	0	0
G. Other	0	0
Totals:	**110**	**100**

(4) On a scale of 0 to 10, (0 least, 10 most), how much do you feel your social and recreational opportunities are improved by your location to the trail?

	Totals
0 Least	0
1	**2**
2	**1**
3	**1**
4	**2**
5	**1**
6	**9**
7	**1**
8	**15**
9	**17**
10 Most	**7**
Average =	**7.6**

(5) On a scale of -10 to +10, how much do you feel the property value of your home has been impacted by the trail?

	Totals		
-10	**0**	+1	**1**
-9	**0**	+2	**3**
-8	**0**	+3	**10**
-7	**0**	+4	**4**
-6	**0**	+5	**12**
-5	**0**	+6	**5**
-4	**0**	+7	**5**
-3	**0**	+8	**2**
-2	**0**	+9	**0**
-1	**1**	+10	**1**
0	**0**		
Average =	**4.64**		

(6) Do you feel that there are any factors that lesson your enjoyment of using the trail?

	Totals	Percent
A. Yes	28	46.7
B. No	32	53.3
If yes, then check all that apply.		
1. Too many dogs/unleashed dogs	2	3.6
2. Vandalism	1	1.8
3. Gangs present	0	0
4. Theft	1	1.8
5. Littering on trail	4	7.2
6. Too much noise	1	1.8
7. Speeding bikers	17	31
8. Presence of horses	5	9.1
9. Horse droppings	10	18.1
10. Others	14	25.4
Totals:	**55**	**100**

(7) Do you feel that there are any factors that lesson your enjoyment from living near the trail?

	Totals	Percent
A. Yes	10	15.6
B. No	54	84.4
If yes, then check all that apply.		
1. Too many dogs/unleashed dogs	0	0
2. Vandalism	0	0
3. Gangs present	0	0
4. Theft	0	0
5. Littering on trail	2	8
6. Too much noise	4	16
7. Speeding bikers	3	12
8. Presence of horses	1	4
9. Horse droppings	2	8
10. Others	6	24
Totals:	**25**	**100**

(8) Do you feel safe using the Paint Creek Trail?

	Totals	Percent
A. Yes	59	92.2
B. No	5	7.8

Totals	
0	**0**
1	**0**
2	**0**
3	**0**
4	**2**
5	**5**
6	**0**
7	**7**
8	**19**
9	**12**
10	**10**
Average =	**7.52**

If no, then check all reasons that apply.	Totals	Percent
1. Lack of police	0	0
2. Crime	0	0
3. Gang Activity	0	0
4. Lack of signage	0	0
5. Speeding bikes	4	66.7
6. Unleashed dogs	1	16.7
7. Horses	0	0
8. Other	1	16.7
Totals:	**6**	**100**

(9) Based on your experience with the trail, do you think communities proposing to build a trail should:

	Totals	Percent
A. Strongly support it and make it a top priority	23	36
B. Support it, but place it in a lower priority	32	50
C. Not support it	1	1.5
D. Have no opinion	8	12.5
Totals:	**64**	**100**

(10) On a scale of -10 to +10 (-10 lowest, +10 highest), How much of an asset do you feel the trail is to local residents?

Totals			
-10	**0**	+1	**0**
-9	**0**	+2	**2**
-8	**0**	+3	**3**
-7	**0**	+4	**4**
-6	**0**	+5	**15**
-5	**0**	+6	**7**
-4	**0**	+7	**5**
-3	**0**	+8	**18**
-2	**0**	+9	**2**
-1	**0**	+10	**4**
0	**5**		
Average =	**5.89**		

(11) On a scale of -10 to +10 (-10 lowest, +10 highest), How much of an impact has the trail had on improving the quality of your life?

Totals			
-10	**0**	+1	**1**
-9	**0**	+2	**4**
-8	**0**	+3	**5**
-7	**0**	+4	**6**
-6	**0**	+5	**15**
-5	**0**	+6	**8**
-4	**0**	+7	**4**
-3	**0**	+8	**7**
-2	**0**	+9	**1**
-1	**0**	+10	**2**
0	**11**		
Average =	**4.43**		

(12) What changes could the Paint Creek Trail Commission make that would result in greater benefits to residents?

	Totals	Percent
A. Increase signage	3	3.1
B. Limit access points along trail	5	5.1
C. Provide more public access points	13	13.3
D. Increase police patrols by horse	2	2
E. Increase police patrols by bicycle	28	28.6
F. Prohibit dogs	0	0
G. Increased effort of leash law	11	11.2
H. Construct additional fencing along properties	4	4.1
I. Institute speed limits for bikers	17	17.3
J. Other	15	15.3
Totals:	**98**	**100**

Question 13: What Do You Like Most About The Paint Creek Trail?

- Enjoy natural setting (14)
- Trail has scenic value (10)
- Convenient location (7)
- Nice to walk on (6)
- Free of cars (4)
- Access to Cider Mill (4)
- Well maintained trail (3)
- Connection to other areas like Lake Orion and Rochester (3)
- Great for getting fresh air (3)
- Clean (3)
- Beautiful trail (3)
- Nice grade (2)
- Good for children (2)
- The Paint Creek (2)
- Better than old railroad (2)
- Serenity and peacefulness (2)
- Nice to have in area (2)
- Quietness (2)
- Closeness to Dinosaur Hill
- Nice to get away from city life
- Great for biking
- Great for running
- Great for socializing
- Seeing wildlife
- Benefit and improvement to area
- Closeness to nature, nice length, good for healthy activities, pleasing recreational area

Question 14: Would You Like To Make Any Comments Not Covered In This Survey?

- Trail should interconnect with other trails
- If knew about trail more would us it more often
- Concern over sewer lines installed near wetlands
- Don't allow building to close to trail--enjoy nature too much for it to be disturbed
- Wonderful asset
- Valuable asset to community
- Thank you to the trail commission for working to improve the trail
- People on commission should hike trail on busy days to see how crowded it is and how difficult it is to ride horses.
- A recent closing of a right of way on Peach Blossom makes it difficult to get to the trail
- Love new path under Rochester Road
- Put crossing light at Tienken Road (Heavy weekend traffic)
- Keep trail growing
- Switch from horse to bike patrols
- Exemption to stable horses in Rochester Hills--should also apply to riding horses south of Dutton Road
- Should create lane for walkers
- Make trail wider in Lake Orion
- Trespassing and some vandalizing occurs on property
- There should be signs explaining courtesy of trail
- Should display more of their brochures to public
- Newton Street maintenance is poor and neighborhood disturbance by people parking near homes
- Crowds are unmanageable at times--police them better
- Would not support trail if means an increase in taxes