

# Ashuelot Greenspace Project

Keene State College 2013  
Department of Geography

Emma Fitzhenry  
Michelle Lefebvre  
Alysha Orrok  
Brian Vose

Faculty Advisor Dr. Christopher Brehme



# Acknowledgements

The accomplishment of this project would not have been possible without the support and dedication from many individuals especially our Professor, Dr.Christopher Brehme and project coordinators Astrid Warden and Ken Stewart. We would also like to express our thanks toward the following individuals for their help and participation making this project a success:

- Andy Bohannon, City of Keene Recreation Director
- Will Schoefmann, GIS Technician, Keene Planning Department
- Dr. Christopher Cusack, Professor of Geography, Keene State College
- Dr. Jo Beth Mullens, Professor of Geography, Keene State College
- Geography Seniors at Keene State College
- All individuals who participated in our survey

# Abstract

This study examines the current use of specific Keene, New Hampshire parks to inform the planning process for a proposed greenspace adjacent to Ashuelot River Park. This three acre greenspace is centrally located near downtown and at the intersection of several bike paths where it will see significant use. A goal for this greenspace is to offer amenities not found in other Keene parks. We used door-to-door and online surveys to gather opinions from local community members about their use of existing parks, and their recommendations for amenities in the new greenspace. We used Geographic Information Systems to define the survey area and create contextual maps for community meetings. We found that local residents were satisfied with the nearby Ashuelot River Park but felt it lacked amenities for young children. Results also found that residents exhibited a desire for nearby parking and river access.

# Table of Contents

<b>Chapter 1: An Introduction.....</b>	<b>1</b>
Greenspace Benefits .....	3
The Ashuelot Greenspace.....	4
Coordinating the Ashuelot Greenspace Project.....	5
<b>Chapter 2: Literature Review.....</b>	<b>7</b>
What is a Greenspace? .....	8
Greenspace Perceptions.....	8
Location of Greenspace and its Impacts .....	9
Stress Reduction .....	12
<b>Chapter 3: Keene, New Hampshire at a Glance.....</b>	<b>15</b>
George A. Wheelock .....	16
Colony Mill to Greenspace .....	18
Demographics of Keene .....	19
<b>Chapter 4: Preparing for Community Outreach .....</b>	<b>23</b>
Background Information .....	24
Group Meetings.....	25
Interview with Ken Stewart: Project Coordinator.....	26
Gathering Information: Survey and Roadshow Meetings .....	28
Park Branding .....	29
Park Amenities.....	30
Contextual Maps.....	30
Contextual Photos .....	31
Relative Size Graphics .....	32

<b>Chapter 5: Survey Design and Results .....</b>	<b>33</b>
Design .....	34
Results .....	35
Ashuelot River Park .....	39
Playgrounds .....	41
Ashuelot Greenspace .....	42
Significance .....	44
<b>Chapter 6: Conclusion .....</b>	<b>52</b>
<b>Literature Cited .....</b>	<b>56</b>
<b>Appendix A: Front page of survey .....</b>	<b>60</b>
<b>Appendix B: Back page of survey .....</b>	<b>61</b>
<b>Appendix C: Map of Ashuelot Greenspace and surrounding area .....</b>	<b>63</b>
<b>Appendix D: Map of Park System and Bike Paths .....</b>	<b>64</b>
<b>Appendix E: Map showing distance from Ashuelot Greenspace .....</b>	<b>65</b>
<b>Appendix F: Size comparison of Ashuelot River Park and Ashuelot Greenspace .....</b>	<b>66</b>
<b>Appendix G: Size of Keene parks in relation to one another .....</b>	<b>67</b>
<b>Appendix H: First page of Park Inventory .....</b>	<b>68</b>
<b>Appendix I: Second page of Park Inventory .....</b>	<b>69</b>

# List of Figures

Greenspace Benefit Graphic .....	2
George A. Wheelock .....	16
Entrance to Wheelock Park .....	17
1877 Bird's eye view of Ashuelot River and Mill Pond .....	18
Current Bird's eye view of Ashuelot River Park .....	19
Population Pyramid of Keene, NH .....	21
Ashuelot Greenspace Logo .....	29
Paved 3.5 Acre Lot; site of Greenspace.....	31
Survey Respondents' proximity to Ashuelot River Park .....	35
Respondents' awareness of Keene parks .....	36
Community use of Ashuelot River Park .....	38
Survey Respondents' use of three Keene parks .....	39
Respondents' rating of current Ashuelot River Park .....	40
Frequency of use of Ashuelot River Park .....	40
Respondents' use of playgrounds in Keene parks .....	42
Importance of River Access to Respondents' .....	43
Importance of Parking for Respondents' .....	44

# List of Tables

Frequency of Ashuelot River Park use vs. Satisfaction with variety of amenities .....	46
Frequency of Ashuelot River Park use vs. river access .....	47
Distance vs. frequency of use .....	48
Cars vs. need for parking .....	49
Cars vs. Distance from Ashuelot River Park .....	50

# Chapter One

.....

## An Introduction



A greenspace is an area of grass, trees, or other vegetation set aside for recreational or aesthetic purposes in an urban environment. It is an open reserve of public land on which no development has occurred which is accessible to the public. The term greenspace generally refers to a park, but a greenspace can also be a community garden, seating area, playground, or a schoolyard. These areas provide recreational opportunities for local residents and help enhance the aesthetics of a city. Greenspaces have demonstrated health benefits for users such as physical activity, relaxation, and meditation, for those who regularly use these facilities.



**Figure 1** *Greenspace category benefit graphic.*

## **Greenspace Benefits**

Individual benefits of using greenspace include personal fitness and wellness, relaxation and stress relief, as well as skill building. Spending time in an open space such as a park or seating area can benefit one's physical and mental health. Living in an urban environment often creates stress for people due to the lack of contact with the natural environment. Having accessible greenspaces in urban environments is important for providing relaxation and stress relief opportunities which in the long run makes for a healthier lifestyle. Physical activity is an important component to good health. Along with providing relaxation, greenspaces are an excellent place to exercise. Depending on the nature of the greenspace, the level of physical activity can include anything from light to vigorous. For example, in a larger park with trails, biking, walking and running are great forms of available exercise. Smaller parks are more conducive to activities such as yoga, a game of catch, and if a court is provided, basketball or tennis.

Social benefits of greenspace use may include reduced loneliness, stronger families, and meeting new friends. Spending time in a park or playground with family and friends can help build strong family bonds and provide important lessons for young children. Economic, physical, and social benefits of greenspace include preventative physical health (via exercise), reduction in violence and vandalism, and an increase in property values within the neighborhood (American Journal of Epidemiology). Environmental benefits include land conservation, environmental rehabilitation, and lower energy costs; the conservation of land is important in urban spaces.

Generally, homes that are located close to city centers have smaller lots and little room to run around. They also tend to be surrounded by roads and sidewalks. This contrasts with outlying neighborhoods where homeowners have more property and much larger yards. Greenspace provides these neighbors with a safe area for their children to run around and enjoy the outdoors without being restricted by small yards and dangerous, high traffic roads. Many studies reveal that parks are considered an asset for potential home buyers. “The real estate market consistently demonstrates that many people are willing to pay a larger amount for a property located close to parks and open space areas than for a home that does not offer this amenity”(Sherer 2006). Greenspace provides the community with a desirable amenity as well as aesthetic beauty.

### **The Ashuelot Greenspace**

Keene has many parks that offer a variety of recreational experiences for residents and visitors. A small group of Keene residents are looking at an empty lot behind the current Ashuelot River Park where they intend to construct a new park that will provide recreational activities geared towards younger children. The proposed Greenspace is a 3.5 acre parcel that adjoins Ashuelot River Park and has access to the Ashuelot River and Keene bike paths. Presently the site is used once a year as a parking area for Keene Art in the Park. Previously it was used as a staging area for construction materials while the city worked on several nearby projects. For the majority of the year the lot is not in use. It is gated off and remains vacant.

The City of Keene has committed itself to providing residents with areas for outdoor recreation. Keene is home to many well-maintained parks, some of which are connected to

each other by biking/pedestrian trails. There are sixteen parks which offer a number of recreational opportunities such as bike paths, walking paths, playgrounds, swimming facilities, basketball courts, tennis courts, hockey rinks, and athletic fields.

The mission of the Ashuelot Greenspace Project is to lead a community effort that will transform an unused and unattractive paved area into a recreational greenspace that can be enjoyed by everyone in the Keene community. For this project, an emphasis has been placed on accommodating families with young children. The proposed greenspace will give families and children an open space dedicated to recreational use, while still complementing the existing recreational infrastructure.

### **Coordinating the Ashuelot Greenspace Project**

The Ashuelot Greenspace project began in early 2013 when three members of the community, Rick Cohen, Jim Putnam, and Bob King, purchased the abandoned lot. The intention of this group was to remove the uncertainty that has surrounded the future development of this parcel, and to eventually turn it over to the community as an active greenspace for recreational participants in Keene. Two additional members of the community, Astrid Warden and Ken Stewart, took the reins on coordinating this project. Astrid Warden and Ken Stewart are the project coordinators for the Ashuelot Greenspace and have worked to promote the project to community groups and to begin planting the seeds for fundraising efforts that will support the project.

Our Keene State College Senior Seminar group was assigned to this ambitious project to conduct a survey, produce contextual materials for the promotion of the Greenspace, and

provide subsequent analysis of the process. With the input of Keene residents, including a substantial amount from local residents in the Ashuelot neighborhood (directly adjacent to the Greenspace), we hope to provide the project coordinators with valuable information moving forward with the project.



# Chapter Two

.....

## Literature Review

## **What is a Greenspace?**

A greenspace is defined as an area of grass, trees, or other vegetation set aside for recreational or aesthetic purposes in an urban environment. Those who live close to community greenspace use it more regularly than those furthest from the space, and the presence of greenspace benefits community health by encouraging outdoor activity and social interaction among community members (Sullivan 2004).

## **Greenspace Perceptions**

Greenspaces are often used or not used depending on the perceptions that people have about the greenspace area. Perceptions that one has can be positive or negative and are often shaped by the amenities and social behavior that are present in the area. Chiesura (2004) sheds light on the negative perceptions that people might have on urban greenspace. Some surveys completed in this study reported that people associate parks and greenspace in the study area with crime and vandalism. However, the positive perceptions outweigh the negative. Positive perceptions of greenspaces include the feeling that it is a nice place to relax, and provides a great place where one can participate in recreational activities. Although the negative perceptions outweigh the positive, a solution was introduced in this study to help reduce vandalism and crime in greenspaces. This solution included integrating law enforcement into parks and greenspace areas so that there are consequences for crime and vandalism committed on the property (Chiesura 2004).

## **Location of Greenspace and its Impacts**

There are a number of objective methods that can be used to analyze the impacts of greenspace on urban residents including analysis of spatial proximity. Seaman, Jones and Ellaway (2010) use photographic interpretation and sketch maps to determine how community members use greenspaces. Data were collected from a small sample group of twenty four volunteers in Glasgow England. The area of Glasgow consists of many greenspaces however there are great inequalities of wealth among residents in the area. To provide a wide range of perspectives in this study, volunteers were selected from different social classes, ages, and gender. The people selected for the study were subject to in-depth interviews in order to identify barriers to their greenspace use. During this process volunteers were asked to photograph their own greenspace experience. The photographs were used to enhance discussions on walkability and accessibility of greenspaces. This conversation lead to discussions about “barriers” they perceive and encounter with greenspaces. Along with taking photographs about their experience volunteers were also asked to sketch a map displaying where they lived, nearby greenspaces, and other community facilities they used. This allowed the subjects to express their perceptions freely, without the objectivity that often comes with spatial data analysis or multiple choice surveys (Seaman, Jones, and Ellaway 2010). The results of the study showed that participants felt they needed to have a reason to go to parks other than for walking or enjoying nature. They also identified that a common barrier to greenspace use was the presence of older teenagers and their fear of vandalism and drug abuse in the area. These

results concur with those of Cheisura (2004) who discussed vandalism and crime as a reason for people having negative perspectives of greenspace.

The goal of many greenspaces is to provide an area for recreational activities and physical exercise. Coutts et al. (2013) demonstrated the relationship between the distance members of the community live from a greenspace and their level of physical activity. The researchers found that proximity to available recreational greenspace is positively associated with moderate to vigorous levels of physical activity. The positive relationship between increased physical activity and accessibility to greenspace holds only for distances within one mile from their home (Coutts et al. 2013). Those who live beyond one mile are less likely to use the greenspace, which suggests that having smaller parks well distributed throughout a city may be more effective than one or two very large parks.

The presence of greenspace is particularly important in urban environments for supporting human health and well-being. Contact with nature positively influences people's health and psychological well-being, and those who consistently use greenspace reap these benefits (Gidlof-Gunnarson and Ohrstrom 2007 and Pretty 2005). Epidemiological studies have indicated that associations between health and greenspace may be strongest in more economically deprived urban areas (Gidlow 2011). Health inequalities are often found to correlate with greenspace distribution. This connects to Coutts (2013) findings that smaller parks should be created throughout cities rather than one or two big parks.

Greenspaces are found to be beneficial to urban residents of all ages. They provide local residents with a place for physical activity, leading to healthier lifestyles. They have been proven to increase longevity and improve communities' aesthetics, while also contributing to

improved social conditions due to increased interpersonal interactions between local residents (Gidlof-Gunnarsson and Ohrstrom 2007). Urban residents living near greenspaces profess a greater sense of personal wealth than those who do not (Seaman, Jones, Ellaway 2010). The presence of greenspaces in cities provides residents with an opportunity to relieve stress, relax, exercise, and increase social interactions with neighbors and fellow members of the community (Pretty, et al. 2005). People who live in rural areas are sometimes perceived as having better health due to perceptions about clean air and water. Those living in rural areas perceive themselves as having a better quality of life than those living in urban areas based on their access to greenspace (Mass et al 2006).

Another benefit to greenspace is its contribution to good health and longevity. Tanko et al. (2002) classified greenspaces as areas where residents were able to walk in parks and greenery lined streets. The researchers tracked greater than 3,000 elderly Tokyo residents over five years. They recorded if participants had access to greenspaces and whether or not they died within the five year period. Their results showed that having access to greenspace positively influence residents' longevity, which makes for a more comfortable and pleasant living environment for senior citizens.

Another study looked at sixty-four public urban houses to see if growing up in an inner city without greenspaces had negative developmental outcomes on children and adults (Taylor et al. 1988). Twenty-seven of the houses studied were in areas with little to no access to greenspace and the remaining 37 were in areas with high greenspace access. The authors concluded that inner-city children and adults who had access to areas of trees and grass were



more likely to participate in creative play and tended to be more healthy than children and adults who only had access to barren places.

Childhood obesity is a modern day health issue that may be mitigated by having access to parks. Several studies highlight the relationship between access to greenspace and obesity. In a review of relevant literature, Cummins (2012) references three studies which found positive relationships between the use of greenspace, Body Mass Index, and reduced weight-gain. The greatest weight reductions were among children and young people (Cummins 2012). Although Jones and Lachowycz (2011) conclude there are inconsistent findings across hundreds of studies concentrating on the greenspace and obesity association, they also note that the difference in measurement methods make these comparisons unreliable.

### **Stress Reduction**

Urban greenspaces have been found to contribute to stress reduction and improved mood change in those who use them regularly. Pretty et al. (2005) examined whether subjects who were exposed to scenes of nature were more likely to adopt physical activity. Their study included five groups of 20 subjects which were exposed to a sequence of 30 scenes while exercising on a treadmill and a control group performing the same exercise. To determine if there was a synergistic benefit between the exercise and exposure to nature, four categories of scenes were tested: rural pleasant, rural unpleasant, urban pleasant and urban unpleasant. Self-esteem, mood and blood pressure were measured before and after each exercise was performed at each scene. The control group showed significantly reduced blood pressure, increased self-esteem and mood with exercise alone. In comparison to the control group, those

who were exposed to both types of pleasant scenes experienced a positive effect. By contrast the unpleasant scenes reduced the positive effects of exercise on self-esteem. The authors conclude exercising while exposed to nature has significant health consequences. One reason that greenspace is a “health-promoting” space in urban environments is that noise pollution is less prominent, which promotes relaxation and offers stress relief. Chiesura (2004) also explored why people go to parks and greenspace to relax and decompress. A simple survey was used to gather input on what people wanted out of their local greenspace and to better understand their need for the greenspace. The survey asked “Why do you come here?” and then gave multiple options such as: to play sport, walk the dog, to meditate, artistic inspiration, and other. Seventy-four percent answered, “to relax”.

Taylor (2011) suggests that exposure to greenspace is a beneficial way to manage Attention Deficit/Hyperactivity Disorder (ADHD) in children. In the United States, an estimated 4.4 million children suffer from ADHD. It is a low-cost and side-effect-free way to manage ADHD symptoms. Studies have shown that after exposure to greenspace, children’s ADHD symptoms are reduced. Children with ADHD who play regularly in greenspace have milder symptoms than children who play in built outdoor and indoor settings. The results are true for both boys and girls (Taylor 2011).

Greenspace has multiple uses and can provide many benefits, such as physical and emotional health outcomes, economic benefits for citizens and municipalities, as well as aesthetic beauty. Chiesura (2004) explores the positive effects greenspace has on the urban dweller’s physical and emotional health and overall quality of life. The author claims that greenspace attracts tourism and enhances the attractiveness of a city. Greenspace can also

provide employment opportunities through jobs in park maintenance and other services as well as increased property values due to the desire for accessibility to greenspaces.

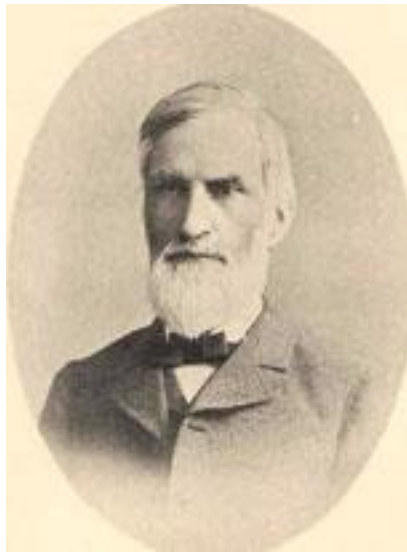
# Chapter Three

.....

Keene, New Hampshire at a Glance

## **George A. Wheelock**

Keene was founded in 1873 and its history of preserving greenspace for the community began shortly after in the late 1800's with the help of an influential early resident, George A. Wheelock (Figure 2). George Wheelock was a “diligent student of nature” and much of his time was spent in forests and fields. Wheelock was a prominent member of the Forest and Tree Society of Cheshire County, which was formed in 1840. The goal of the Forest Tree Society was to “beautify” and “improve” the town by planting trees along the streets of Keene.



**Figure 2** *George A. Wheelock.*

Wheelock worked very hard to secure land for the community to utilize as open space. This process began in 1851 when Wheelock took charge of the enclosure of Central Square Park and the planting of trees. He continued his efforts to secure land and presented the city of Keene with the Agricultural Fair Grounds (Wheelock Park), and Robin Hood Forest (Figure 3). The 82 acres that make up Robin Hood Forest was given by Wheelock with the goal of creating an area that would be kept as a forest as well as for public recreation and study (Miller 2003).



During this time, Mr. Wheelock was the first incumbent of the Office of Park Commissioner and personally assumed the care and improvement of parks (The Historical Honor Society of Cheshire County).



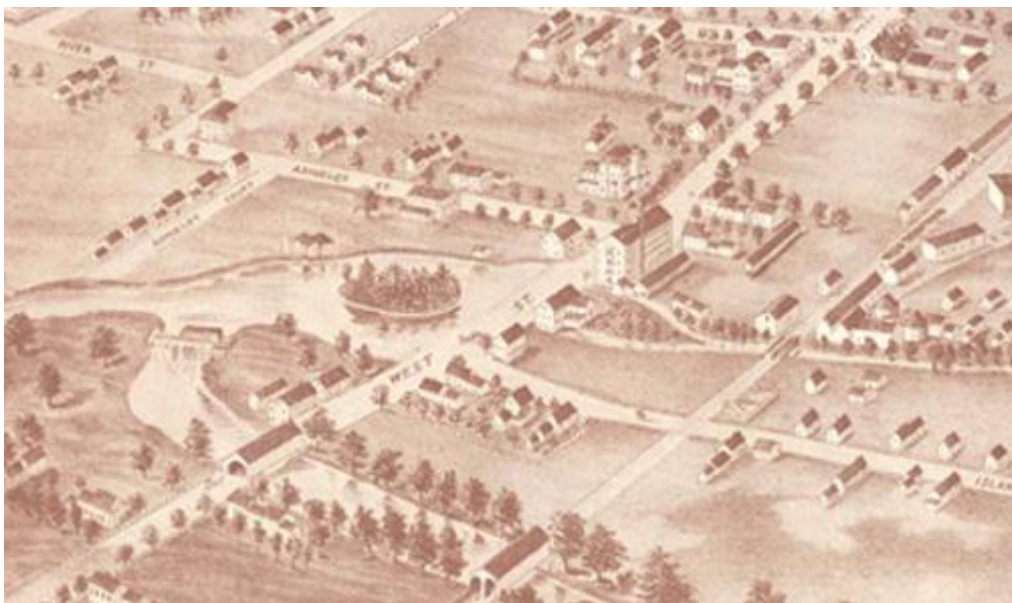
**Figure 3** *Entrance of Wheelock Park.*

Keene has a history of preserving and creating parks and greenspaces for its community. It has been indicated that the community would rather preserve nature and create an open space for outdoor activity than allow development of the land. Today many parks, like Ashuelot River Park, are maintained by volunteers, indicating that the community takes great pride in their parks and greenspace. The site for the Ashuelot Greenspace project was purchased by

private individuals and will eventually be handed over to members of the Keene community to create a park that will be maintained by the community.

### **Colony Mill to Greenspace**

The parking lot where the future greenspace will be built has a long and interesting history. The land was once owned by the Faulkner and Colony Mill, which played an important role in the history and development of Keene. The Mill was originally a sawmill and gristmill that required hydropower from the nearby Ashuelot River to operate. A canal was then created where they built another dam that was used to control the flow of water to the mills. This water was used by the mills to produce hydropower. Once the water served its purpose, it flowed back from the Mill to the canals and emptied back into the Ashuelot River (Figure 4).



**Figure 4** 1877 bird's eye view of Ashuelot River and Mill Pond.

The mill used the hydropower supplied from the Ashuelot River to power machines that made woolen goods and flannels. The mill produced uniforms, blankets and tent materials for

soldiers during the Civil War, World War I, and World War II. The mills' fabrics were used for uniforms, blankets and tent materials. In 1953 the Faulkner and Colony Mill closed with the distinction of being the second oldest mill in the United States to be run the same family at the same location. In 1955 the Mill Pond was filled in and this space became the site of the present location of the Connecticut River Bank commercial building. This retail development is now home to Elm City Bagel and several other businesses (Figure 5). The mill itself was renovated in the 1990s and converted to retail shops and restaurants (Miller 2003).



**Figure 5** *Current bird's eye view of Ashuelot River Park.*

### **Demographics of Keene**

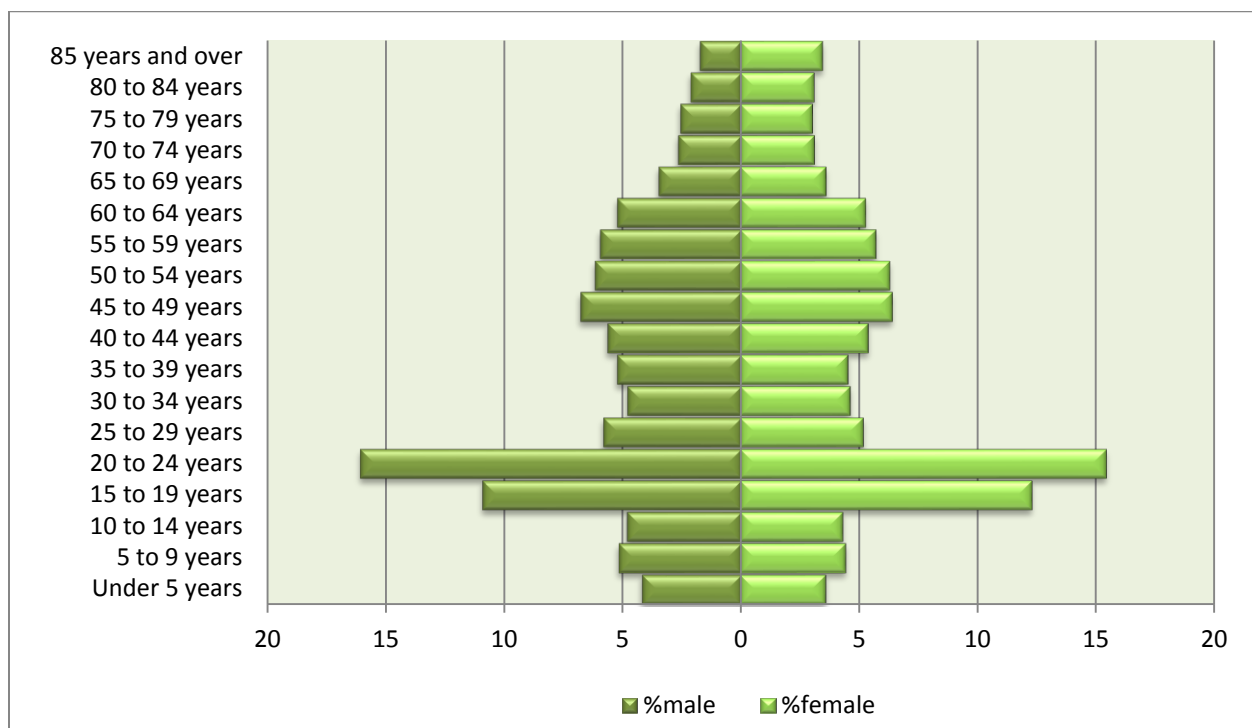
It is important to consider the demographics of Keene when undertaking a community project such as this. The population in Keene has increased over the past twenty years and in 2012 the population was recorded at 23,272 people. Since the proposed Greenspace is geared towards children and families, the demographics of Keene is important for predicting the amount of use that the park will receive. In the 2000 census 17,128 Keene residents were

between the ages of 15 and 54 and 3,467 were under the age of 14. Many of the parks in Keene can be utilized by families but there really is no park in Keene solely dedicated for child use.

US Census demographics from the City of Keene, New Hampshire Master Plan section on recreation show that the current population of 23,272 is projected to experience a slight decline in the upcoming years. The population projection does not take into consideration any fluctuations in enrollment at Keene State College, though it is important to note that enrollment has remained relatively steady over the past five years. Enrollment increased by 308 students between 2008 and 2011, before dropping to 5,605 students fall semester of 2013 (Turrentine, 2012; Keene State College Profile 2013). Like most Northeastern United States cities, Keene has population that falls between all ages however the most people are between the ages of 20 and 54. This age segment consists of 59.4% of the total population (City of Keene 2012). Keene State students represent a large portion of this age segment, however many students return home for the summer.

Currently, the City of Keene follows the Active and Passive Recreation Management Plan which was created to help “guide the future developments of Keene’s parks, trails, and recreation system, and provide strategic recommendations to measure how the system is meeting the needs of residents”. The areas of focus for this plan include the following: (1) A Quality Built Environment, (2) A Unique Natural Environment, (3) Vibrant Economy, (4) Strong Citizenship and Proactive Leadership, (5) A Creative Learning Culture, and (6) A Healthy Community (City of Keene 2012). This management plan is geared towards strengthening the connection between people and parks, in addition to promoting healthy lifestyles.

As discussed here, greenspace provides an important contribution to quality of life, but public authorities do not receive any significant income from greenspaces and are obligated to budget for its maintenance. These costs must be balanced with other municipal responsibilities such as education and roads (Bullock 2008). This makes changes in park design a challenging process. Greenspaces are often acquired only when new development occurs in suburbs, or when existing greenspace becomes development (Bullock 2008). The value of greenspace is only as good as the amenities it provides the community. The value or quality of small local parks is enhanced by the presence of play facilities. The quality of a larger park can be gauged by its provision of pedestrian paths, seating, and play spaces (Bullock 2008).



**Figure 6** *Keene, NH Population Pyramid.*



The outlier of Keene's population is the ages ranging from 20-24 (Figure 6). This is attributed to the Keene State College community. There is a healthy population size within the 25-60 age range. The median resident age of the population falls around 35, according to city-data.com. Again we have to take into consideration the college population but based on the population pyramid there is a large number of Keene residents that are between the ages of 20-50. With a majority of residents in this age group we can assume that a portion of the community spends some time outdoors partaking in some type of physical activity whether it be walking, running or biking. The median population indicates that many of these people have families that would be interested in using the Greenspace for their children and family activities. The goals of the future Greenspace fits in perfectly with where Keene's median age demographic lies.

# Chapter Four

.....

## Preparing for Community Outreach

## **Background Information**

Understanding the recreational desires of residents required research into existing park inventories and local government reports. The Keene Parks Management Plan (2012) highlights the top three facilities Keene residents desired most. These include pedestrian/bike paths, a dog park, and more open space and conservation land. In our first meeting with the project coordinators it was made clear that a dog park is not a desired component of the future greenspace. The Ashuelot Greenspace will likely provide open space, and the adjacent Ashuelot River Park already holds an abundance of open space and conserved forest and wetlands. Ashuelot Greenspace will very likely connect to the walking/biking path in Ashuelot River Park, thereby indirectly satisfying the desire for more walking and biking paths. The project coordinators expressed a desire to differentiate Ashuelot Greenspace from Ashuelot River Park as its own entity, while still creating a space that is compatible with, and complements its neighboring greenspace. The park should satisfy recreational needs that are not offered in other parks.

Ashuelot Greenspace holds great potential as a recreational area for Keene residents. The 3.5 acre lot will provide recreational opportunities for all members of the community. The aim of this project is to determine what features Keene residents would like to see constructed in this space. A number of methods were used in this project including door-to-door surveying, community roadshow meetings, contextual map production, interviews with project coordinators, and the use of contextual photos and graphics for roadshow meetings. Roadshows are intended to promote the Ashuelot Greenspace and gather support from other interest groups such as the Friends of Open Space in Keene, Antioch University of New England,

and the Monadnock Conservancy. Contextual maps, photos, and graphics will assist community members attending the roadshow meetings in recognizing the location of the empty lot, as well as giving them a sense of the current state of the space and its adjacent neighborhoods. It is crucial to the success of this community effort that the voices of neighbors and residents are heard, so that they can be incorporated in the planning process. To this end, we developed and implemented a survey that addresses specific factors such as the location of potential users and the recreational activities they participate in, in addition to open response questions.

### **Group Meetings**

The first step in organizing our project was to conduct group meetings with the project coordinators. The coordinators used these meetings to debrief us on the current vision for the greenspace and our tasks. Face-to-face meetings were an efficient means to discover what steps had already been taken by the coordinators, and to learn the background of the potential greenspace.

Members of our project team sat in on meetings between the project coordinators and the directors of Keene Parks and Recreation Department and Monadnock Conservancy. The parties discussed different ways to gain public support and participation for Ashuelot Greenspace. One major idea to come out of these meetings and to be implemented was to use roadshows to promote the Greenspace. Another meeting was held with Ellen Edge of the Keene State Child Development Center to learn about natural play spaces. This meeting provided us with an understanding of the importance of natural greenspaces in a child's life. Research conducted by the Child Development Center revealed that natural play spaces allow children to be more creative in their play, while providing them with an environment which

may not exist for them at home. In addition to providing a play space conducive to creative play, natural play spaces are less expensive than metal structures, and have been shown to be safer.

### **Interview with Ken Stewart: Project Coordinator**

Ken Stewart is an active member of the Keene community and has been involved in multiple community projects. Ken is one of our project coordinators, along with Astrid Warden, another active member of the community. We interviewed Ken to gain some background information regarding the plot of land that will be the Ashuelot Greenspace. Ken explained in detail how the community came to acquire this vacant lot. Ken began our interview by saying, “the ultimate goal of this hopefully community-wide project is to provide an area for families and children to play and enjoy the outdoors.” The vacant 3.5 acre lot has seen multiple owners over the years but has received very little use. The Faulkner and Colony Manufacturing Co. originally owned the lot, which was at that time a pond that helped to power the nearby textile mill. The Mill went bankrupt in 1954 and the owners were forced to sell off parts of their property. In the early 1980’s a private investor, Emile Legere, purchased the Colony Mill to redevelop as a retail establishment. The empty lot was part of the real estate transaction, and the new owner intended to use the overflow parking. Despite this intention, the lot never received any use. Twenty years later the Colony Mill complex was sold for a substantial amount of money to the Mayo Group, a Boston based investment developer. The new owners submitted plans to build 80+ condominium units on the lot. The residents of the adjacent neighborhood expressed concerns regarding the scale of the development project, which would overshadow their neighborhood of predominantly modest, single-family homes. Residents

were concerned about the number and height of the condominiums being proposed and about the increase in local traffic which would likely follow. Despite concerns from local residents, the proposal was accepted by the city but construction never began due to the financial crisis in 2008. The Mayo Group asked for multiple extensions on the development plan from the city, but in the meantime, changes in the development protocol in Keene made the proposal no longer viable. With the prospect of developing the parcel now off the table, the Mayo Group decided to sell. Members of the community saw this as an opportunity to buy the land and preserve it as an open space for the community to utilize. In 2012 three members of the community, Rick Cohen, Jim Putnam, and Bob King, formed an LLC and combined their resources to buy the vacant lot.

Long before the opportunity to purchase the land arose, these three members of the community thought that the lot would make an excellent greenspace for the neighborhoods and the broader community. They would much rather see the lot transformed into a community greenspace than a development out of scale with the established Ashuelot River Park and the local community. By purchasing the space, these three men provided the community with the time to create a clear plan for the space without being rushed or pressured by financial burdens.

Once the land was purchased Astrid Warden and Ken Stewart became involved and started formulating a vision for the future Greenspace. The parcel will be privately owned until the park is completed, then it is the intention of the owners and the project coordinators to gift it to the City of Keene. Before transferring the property to the city, the project coordinators are hoping to build community support and volunteerism. They also hope to create an endowment

that will prevent the park from becoming a financial burden to the city. The project coordinators recognize the importance of community involvement in the planning process and want to cater the future Greenspace to the community's needs within the context of the vision for the Greenspace. The project coordinators have enlisted the support of the Keene Parks and Recreation and Planning departments along with other community groups to help shape and advance the project.

### **Gathering Information: Survey and Roadshow Meetings**

Meetings with these and other local organizations provided a means for us to gather recommendations and information which enabled us to create a well-designed survey. The survey will serve two purposes: to raise awareness about, and generate interest in the project, and as a means of collecting data. In addition to the surveys, we participated in a series of 'roadshow' meetings. These roadshow meetings consisted of brief explanations of the history and status of the Ashuelot Greenspace project, presentation of a small packet with contextual maps, logos, and other information, followed by a question and answer session. The roadshow meetings with key stakeholders and community groups are intended to boost interest in the project, and gain community support. Our contribution to these meetings consists of several maps: a resident location map, a park system and bike path map, and a map of Ashuelot Greenspace's surrounding area. A graphic depicting the relative size of Ashuelot Greenspace to that of Ashuelot River Park was also included. Our research group will also provide survey analysis at roadshow meetings. In preparation for the roadshows that will take place throughout November and December, contextual maps and a revised inventory list were

created. The project coordinators requested contextual maps that could be displayed and distributed in the roadshows. The roadshow style of marketing the project requires a map of the extent of Keene, a map of the Ashuelot Greenspace, and a map of the Ashuelot neighborhood (the same map included at the end of the survey). We lacked the necessary data to create contextual maps initially, so we contacted Andrew Bohannon, the Keene Parks and Recreation Director, and were able to retrieve GIS data from Keene's GIS technician, Will Schoefmann.

### **Park Branding**

The project coordinators expressed a desire to brand the new Ashuelot Greenspace by creating a logo to help raise awareness and to facilitate future fundraising efforts. This logo will be visible on all material relating to the project. The final logo design was established after several revisions. It was kept clean and simple with a two color design, colors that are found and associated with nature. The ascender on the letter h turns into a tree which brings the Ashuelot Greenspace back to the concept (Figure 7). Distinguishing Ashuelot Greenspace from Ashuelot River Park is important because the new Greenspace is intended to provide different recreational opportunities than Ashuelot River Park.





**Figure 7** *Ashuelot Greenspace Logo.*

## **Park Amenities**

We created a matrix of Keene's parks and their provision of various activities and facilities, such as sports fields, swimming, benches, water fountains and walking paths. This was created to facilitate comparison among the current recreational amenities provided in Keene. This matrix was developed from "Final Inventory Atlas" completed in July, 2012 by GRASP, a private company hired by the City of Keene. This inventory includes a great deal of descriptive and contextual material, but the data of interest were the park amenities. Our group retrieved this data and entered the information into an Excel spreadsheet. This matrix summarizes the original work, and places it in one table for ease of visual comprehension. Each amenity was arranged into one of four categories: Environment, Sport facilities, Trails, Facilities. Sorting each amenity into one of the four categories makes it possible to determine how parks rank in each category. The Ashuelot River Park ranked high in its environment however it ranks low in sport facilities while Wheelock ranked high in sport facilities and low in trails.

## **Contextual Maps**

The first map that we created was of the extent of the City of Keene, and identified the location of the Ashuelot Greenspace, as well as bike paths, rivers, lakes (swamps were excluded) (Appendix D). The second contextual map was a larger scale. This map emphasizes the Ashuelot neighborhood. A shapefile was created displaying the proposed greenspace, and labeled streets and reference features such as the Colony Mill Mall. This map was used to

provide context for the paper survey (Appendix C). A third map depicts buffers at distances of > ¼ mile, ¼ to ½ mile, ½ to 1 mile, and 1-2 miles from the greenspace. These increments were used in the survey and this map provides a means for cross referencing our data (Appendix E).

### **Contextual Photos**

We also took pictures of the empty lot which will become the future Greenspace. These contextual photos were taken to use at roadshows to remind residents what the current lot looks like and to give them a baseline for imagining future plans. The pictures included images of the streetscape along Ashuelot Street, the lot, the surrounding neighborhood, bike paths leading to the area, the boat launch into the Ashuelot River, and the nearby parking lot of the Connecticut River Bank (Figure 8).



**Figure 8** *Site of the proposed Ashuelot Greenspace Project.*

## **Relative Size Graphics**

Two informational graphics were created to show the size comparisons between parks in Keene and the Ashuelot Greenspace. The graphics are represented by the tree which was used in the logo. This makes the graphics recognizable to those who have seen the logo and it helps connect back to the nature theme of the project. The first graphic depicts the relative size of the manicured portion of Ashuelot River Park in comparison to Ashuelot Greenspace. The Ashuelot Greenspace is slightly larger than the maintained portion of the current Ashuelot River Park (Appendix F). The second graphic compares several of the Keene parks, these parks include: Ashuelot River Park, Wheelock Park, Robin Hood Park, Fuller Park, and Beaver Brook Falls along with the Ashuelot Greenspace. The information for this second tree graphic was used from the City of Keene Parks and Recreation and the park sizes are based on entire acreage not just the manicured portions (Appendix G). That is why the Ashuelot River Park is many times larger in the second graphic than the first in comparison to the Ashuelot Greenspace. These graphics aid the Keene community in understanding the size relationship between the Ashuelot Greenspace and other well-known parks in Keene.

# Chapter Five

.....

## Survey Design and Results

## **Design**

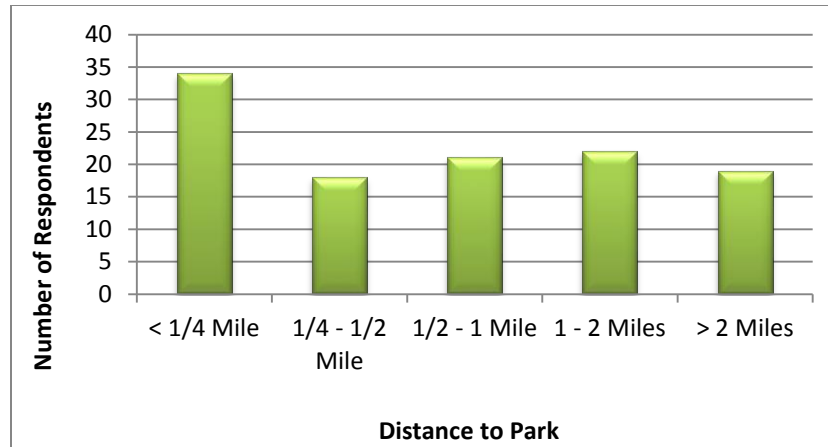
The first step in producing the survey was to determine exactly what we needed to learn from residents living close to Ashuelot Greenspace. Through communication with the project coordinators we developed ten questions for the survey. The project coordinators provided a vision statement for the future greenspace, which was printed at the top of the first page of the survey to provide respondents with an explanation of what potential amenities the Greenspace could provide. Seven of these questions are in a five class Likert scale format, and other questions are in open response format. The order of the survey questions was an important consideration. To maintain fluidity, write-in response questions were placed at the end of the survey, and visual hierarchy was employed using colored, bold font for questions. The only colors used were black and green. This helped to maintain a level of visual simplicity. By reducing white space between questions, the survey fit on two pages (front and back) on a single sheet (Appendix A). Revisions were made based upon suggestions from the project coordinators. The survey included a contextual map of the Ashuelot Neighborhood to give participants a general sense of the size, state, and location of the proposed greenspace.

A critical aim of the survey was to obtain data that gives project coordinators a sense of what the residents felt were missing from the existing Ashuelot River Park. The project coordinators hope to incorporate some of the wants and needs mentioned by residents in the survey into the Ashuelot Greenspace, within the context of the existing vision for the park.

The survey was distributed in two ways: thorough door-to-door conversations in the adjacent neighborhood (see map of “Ashuelot Greenspace and Surrounding Areas”) and through an online format. An explanation of the current vision, as well as background information on the space’s history was provided to participants. The role of our research group was also explained, as we did not want residents to be confused by the involvement of Keene State College. Our goal was to distribute surveys and obtain results from every house in the neighborhood. In order to get survey responses from Keene residents beyond the immediate neighborhood, we created an online survey which was distributed to community members via email lists provided by the project coordinators. The online survey asks the same questions as the paper survey, however a reference map was not provided. Online surveys were sent with an introduction to the Ashuelot Greenspace, similar to the verbal introduction we provided when conducting the door-to-door survey.

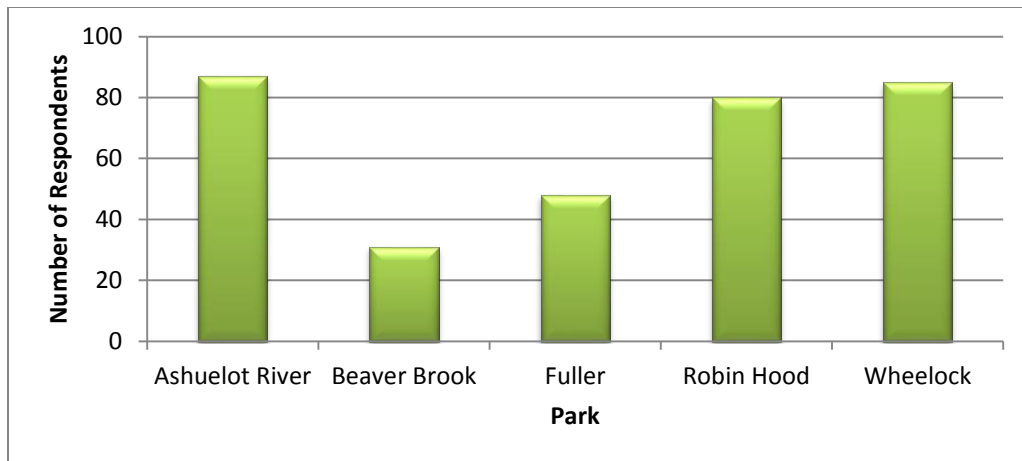
## **Results**

We used in-person and online survey methods to collect data from a total of 128 Keene residents. The results revealed that a majority of the respondents live less than a quarter mile from the existing Ashuelot River Park. Some respondents live further than two miles away (Figure 9).



**Figure 9** *Survey respondents' proximity to Ashuelot River Park.*

To assess respondents' familiarity with Keene's existing parks and recreation areas we asked about their awareness and use of several facilities in Keene. The first question on our survey was formatted in a table listing five parks in the city of Keene, and various activities offered in each. We selected these five parks based on the variety of activities they offer, their apparent popularity, or their similarity to the proposed Greenspace. Ashuelot River Park was chosen for its proximity to the site; Beaver Brook Falls has a unique natural character; Fuller Park is a small, visible park in front of the City's Recreation Center; Robin Hood and Wheelock Parks both contain a wide variety of recreation opportunities including tennis courts, sports fields, swimming pools, and walking paths. The varied offerings of these parks gave us the opportunity to see what survey respondents are currently utilizing in Keene's park system. The first question was whether respondents were familiar with these parks, and the responses varied significantly (Figure 10).



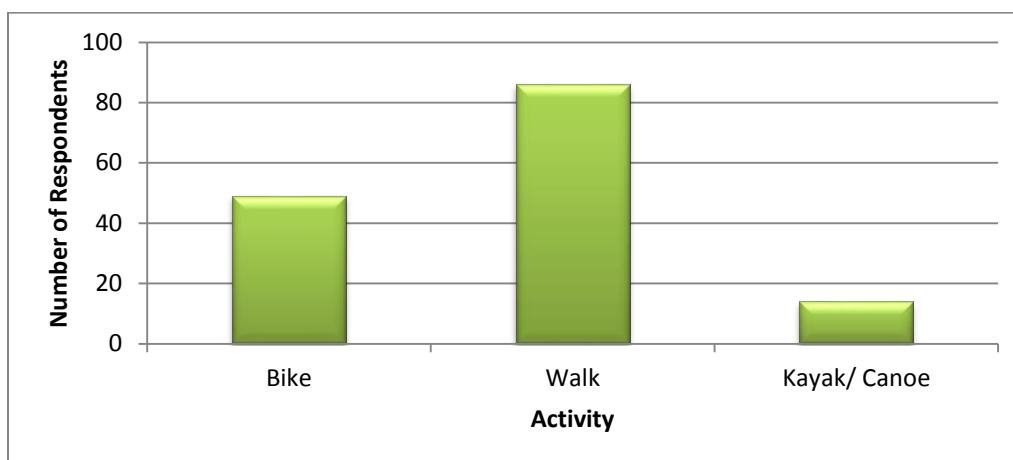
**Figure 10** *Respondents' awareness of Keene parks.*

From these results it is clear that three of the five parks are most familiar to the respondents. These are Ashuelot River Park, Wheelock Park, and Robin Hood Park. Respondents' familiarity with these parks in Keene is not surprising. Ashuelot River Park is the closest park to those residents who we surveyed in person. The park is also well known for its attractive waterfall and gazebo, as the site of the annual Keene Art in the Park and as the location for many outdoor photography sessions prior to local weddings and proms. Wheelock Park is well known for its swimming pool and sports fields, which host soccer, baseball and softball leagues for children and adults. Robin Hood Park is the site best known for its swimming pool, playground, and tennis courts, as well as the small pond that serves as a popular fishing spot.

We are interesting in understanding the popularity of activities in these three parks among those we surveyed (Figure 11). The survey results show that biking, walking and playground use are the most popular activities in all three parks. At first glance, Ashuelot River Park seems too small for biking. However, the small manicured section which most residents



are familiar with serves as the starting point to the Jonathan Daniels trail, a mixed-use recreational path that follows the east bank of the Ashuelot River. Many people access the trail on foot or bike through Ashuelot River Park. In addition, the northern part of the trail is popular with workers and visitors to Cheshire Medical Center. The path itself is not paved, but is well maintained and provides an easily accessible respite from the urban environments of Keene.

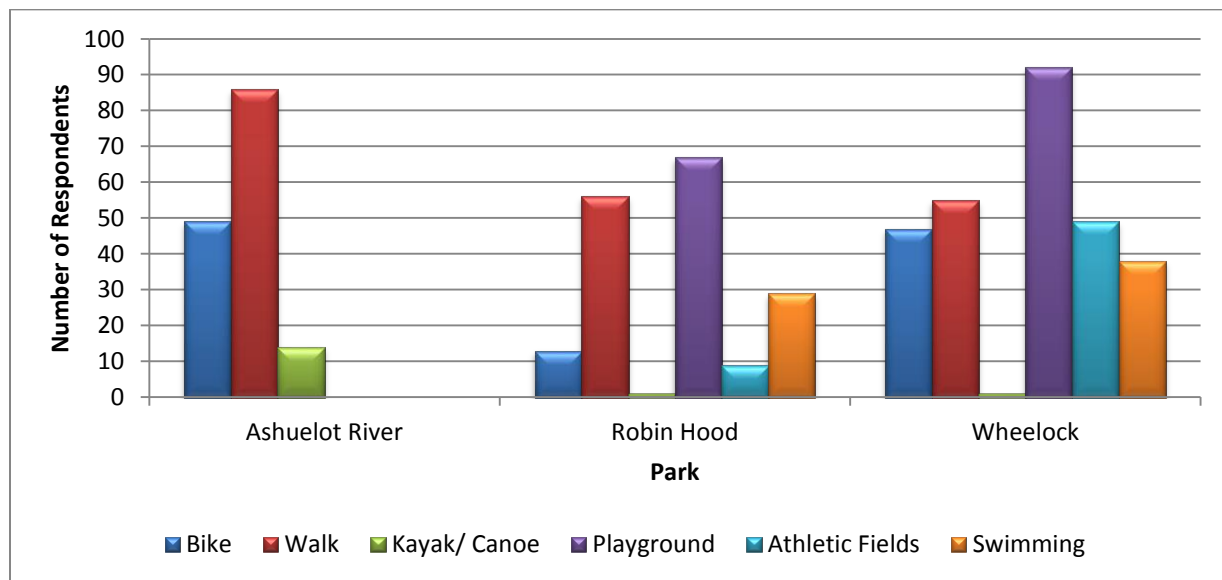


**Figure 11** *Community use of Ashuelot River Park.*

Wheelock Park is at the western terminus of another pedestrian path, Appel Way, which intersects the Jonathan Daniels trail near the Ashuelot River. In addition to its connection to Keene's network of paths, this park is quite expansive, so it is no surprise that walking and biking are popular activities here. Wheelock is also home to a popular playground with adjoining restrooms and convenient parking. As mentioned above, it also serves as the hub for seasonal baseball, softball, and soccer games. The athletic fields at Wheelock Park are well maintained, and serve as an important part of the social fabric of the community.

Robin Hood Park is also a very large park in Keene that serves the population on the eastern side of the city. It is well liked for its large system of trails that wind through a wooded

hill above a scenic pond. It is no surprise that walking and biking are popular activities here. Robin Hood also has a pool, tennis courts and an open field that is used for informal sports games.



**Figure 12** Survey Respondents' use of three Keene parks.

### Ashuelot River Park:

The majority of the respondents feel that Ashuelot River Park is 'good' or 'adequate' for the variety of recreational activity that it currently offers (Figure 13). As described above, the survey provided an open response question asking respondents if they would comment on other activities they participate in at each park. Here are a few responses we collected:

*"For its intended activities dog walking, bird watching, meeting place, it is good."*

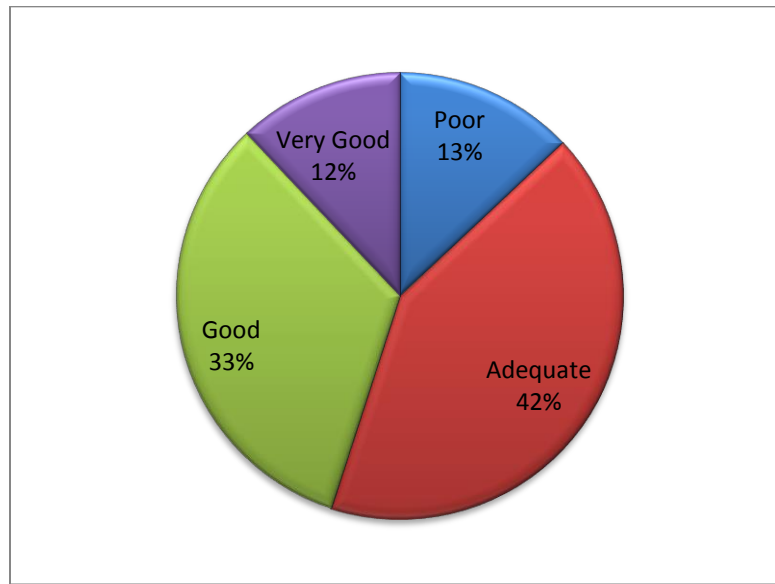
*"It is a beautiful natural setting- I love walking through it and do so at least four times a week."*

*"It has good walking trails and the river for canoeing/kayaking. Also a lovely heron to watch."*

*“Good for walking, kayaking, and fishing.”*

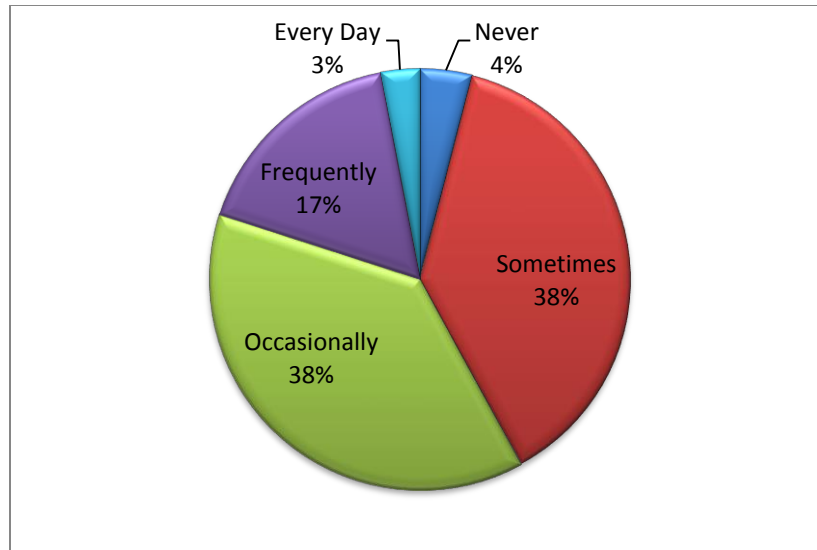
*“I love the bike trails in the woods. Very Pretty!”*

*“I only walk. I do enjoy things I like art in the park. The grounds are also well kept”*



**Figure 13** Respondents' rating of current Ashuelot River Park.

To better understand respondent's frequency of visiting the Ashuelot River Park question two on our survey had Keene residents indicate the frequency with which they visit each park. Each resident indicated that they use the park either one to two times a year, occasionally, one to two times a month and frequently more than one time a week. Currently, Ashuelot River Park is used by most respondents at least one to two times a month (Figure 14).



**Figure 14** Frequency of using Ashuelot River Park.

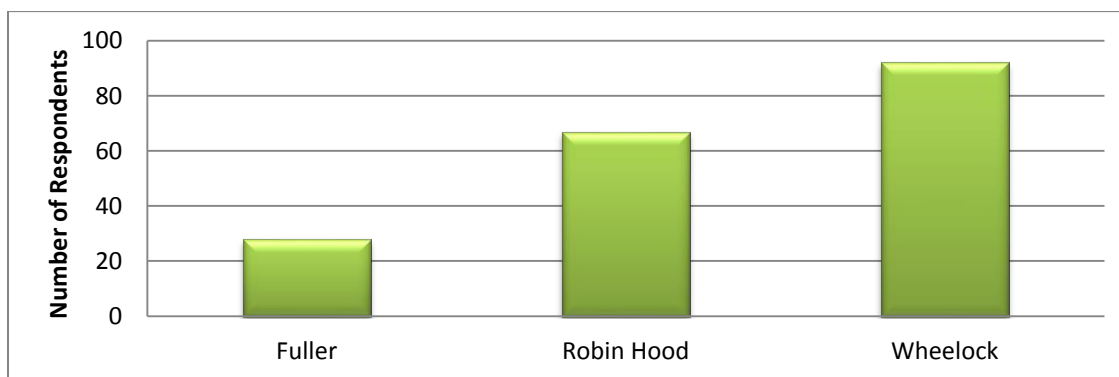
Question 10 of our survey asked participants to: *Please list anything you think is missing in Ashuelot River Park for children under the age of 12. Please Explain.* There was a variety of responses to this question. A frequent recommendation from respondents was to create a Greenspace that enhanced the natural environment currently found in Ashuelot River Park. Many people felt that the Greenspace should include a play space where there are swings for all ages and a fenced area for younger children. Another suggestion was to have informational signs about the Ashuelot River, mill site, and dam that would provide children with educational information about the area where they are playing. Along with the idea of an informal play space, residents expressed the need for a bathroom facility (although one exists just inside the Ashuelot River Park) and water fountains. One respondent requested that trees and bushes be planted to allow children and family members to play games like hide and seek.

Although the question was directed for the needs of children under the age of twelve, respondents suggested more benches and picnic tables for family gatherings and for use by older visitors. Residents also expressed interest in creating a community garden where

individuals could plant fruits and vegetables that they are unable to plant at home. Finally, respondents talked about wanting a dog park or a doggy station that provided bags for owners to clean up after their dog when they are visiting the park.

## Playgrounds

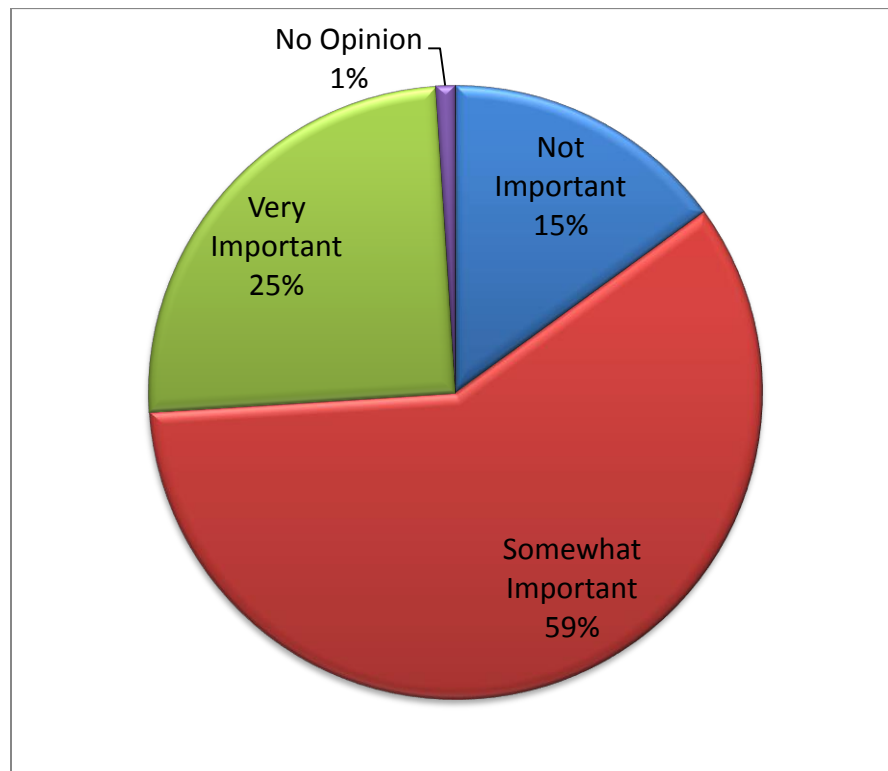
Playgrounds are important recreation facilities for younger children to exercise and play. The city of Keene has installed playgrounds in some of the parks in the current system. Of the five parks that we asked about, only three have formal playground structures: Fuller, Robin Hood, and Wheelock. Overall, we found that 70% of our respondents use a playground in one of these parks. We confirmed our observation that the Wheelock playground is particularly popular, with more than 90% of respondents saying that they have used this park. The Robin Hood playground is also very popular. Our respondents were generally less familiar with Fuller Park and therefore we saw a much lower percentage of respondents using this playground. Fuller Park is a long walk from the Ashuelot neighborhood, and children here are more likely to play in their own backyard or to use a car to access the large playground structures at Wheelock or at schools in the area (Figure 15).



**Figure 15** *Respondents' use of playgrounds in Keene parks.*

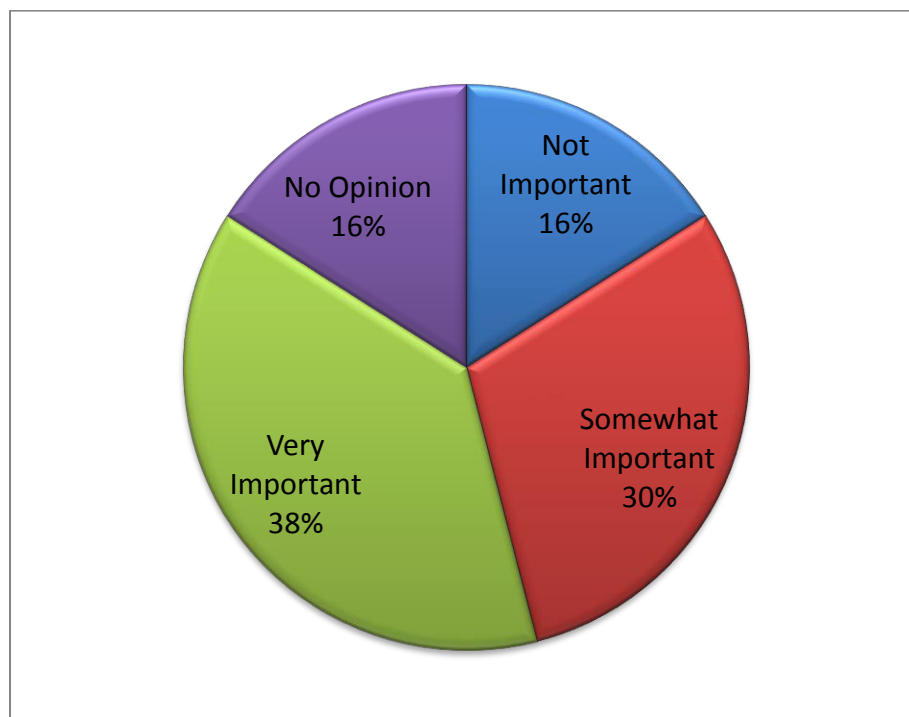
### **Ashuelot Greenspace**

The current vision for the Ashuelot Greenspace is to create a family friendly environment where children have a place to play. Some plans created for the site currently include the provision of river access and parking. To understand the needs for these two amenities we asked respondents their need or desire for river access and parking. The majority of Keene respondents feel that being able to access the river is somewhat to very important in the future Greenspace (Figure 16).



**Figure 16** *Importance of River Access to participants.*

Respondents also indicated a need for parking in the future Greenspace. Thirty percent indicated that parking is somewhat important and thirty eight percent think that parking is very important (Figure 17).



**Figure 17** *Importance of parking for participants.*

### **Significance**

The patterns we found in our survey led us to pursue additional analysis using inferential methods. Frequent visitors to the park are likely to be its best critics and visit the park more often than those that live far away. They know the area well, and are able to assess changes in its condition. If they use the park more frequently we could assume they are generally satisfied with the conditions and amenities offered. We felt that there would be a

positive relationship in our data between those who frequent Ashuelot River Park and their level of satisfaction with the amenities offered in the park.

Our null hypothesis is that there is no relationship between a participant's frequency of use of the Ashuelot River Park and their satisfaction with the amenities offered in the park. Both frequency of use and satisfaction were measured on a five-class Likert scale. Frequency of use was classified as: 'never', 'rarely', 'occasionally', 'frequently', and 'every day.' We translated these categories into a scale from one to five, with one being 'never' and five being 'everyday'. Satisfaction was classified from 'poor' to 'very good' with poor assigned a one, and very good assigned a five. Using these quantitative data based on the Likert scale selections, we then ran a chi-square test. The chi square test is used to compare observed values of one variable to expected values of the same variable, as a means to detect unusual frequencies or amounts of a variable. When two variables are used, the test analyzes the relationship between them. If there is a relationship, the significance value should be very low. Our results returned a significance value of .115, which is greater than our confidence value of .05, meaning we fail to reject our null hypothesis (Table 1). There appears to be no significant relationship between these variables. One reason could be that the park is a convenient and attractive place for nearby residents to relax, but they know to visit other parks for additional amenities such as ball fields, swimming, and other activities that require more space and infrastructure.



**Table 1** Frequency of Ashuelot River Park use vs. participant satisfaction with variety of amenities in Ashuelot River Park

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	22.958 <sup>a</sup>	16	.115
Likelihood Ratio	25.448	16	.062
Linear-by-Linear Association	.213	1	.644
N of Valid Cases	127		

A number of people who use Ashuelot River Park do so for the river access provided there. By parking in the Connecticut River Bank parking lot, paddlers can carry their canoe or kayak a short distance and put their boat in just above the dam. We were interested in whether river access represents a substantial component of use of the park. We decided to test the relationship of these variables using a chi square test. To run the chi-square test we classified both responses in a Likert scale as we did in the previous test, with one being 'never' and five being 'everyday'. To classify the need for river access each respondent indicated the need for access as: 'not important', 'somewhat important', 'very important', and 'no opinion'. These responses were then assigned a value one to four, one being not important and four being no opinion. We ran a chi-square test to compare the observed values, and this test returned a significance value of .403, which is much greater than our confidence value of .05 (Table 2). This

indicates that there is not a significant relationship between river access and the frequency of using the Ashuelot River Park. Again, this result speaks to the fact that visitors use Ashuelot River Park at different times for different purposes. Paddlers have many options for accessing lakes and ponds in the area, and the Ashuelot River is just one of these. These same individuals are obviously drawn to the park for the other amenities it provides.

**Table 2** Frequency of Ashuelot River Park use vs. river access

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	15.691 <sup>a</sup>	15	.403
Likelihood Ratio	15.341	15	.427
N of Valid Cases	128		

As mentioned above, Ashuelot River Park is popular with residents throughout Keene for its gardens, waterfall and access to the Jonathan Daniels pedestrian path. It does not have a playground, which may make it less popular than other Keene parks for those families with children. We felt one of the strongest determinants of Ashuelot River Park use would be the proximity of a resident to the park. If this holds true, then the proposed greenspace will also be popular with neighbors, many of whom have children. By gearing the new Greenspace toward small children, the project coordinators hope to serve a need in the community. We tested our

hypothesis that residents in the immediate neighborhood would use the park more often simply based on its proximity.

In the survey, we gathered information on proximity using categories from ‘within quarter mile’ to ‘beyond two miles.’ These categories were assigned numbers from one to 5, one being ‘within quarter mile’ and five being ‘greater than two miles.’ Our null hypothesis is that there is no relationship between the distance a respondent lives from the park and their frequency of use of the park. We selected Spearman’s Rank Correlation in order to determine if an association exists between two variables. This correlation test is appropriate for categorical variables, and the result can be interpreted as a typical correlation. A value closer to one indicates a strong positive relationship between the variables, while a value near zero indicates no relationship. Our test result returned a correlation value of .421, indicating a moderate positive correlation between distance and park use (Table 3). This helps us confirm that the park is an important amenity for the neighborhood.

**Table 3** Distance vs. frequency of use

Correlation Coefficient		1.000	.421
Frequency	Sig. (2-tailed)	.	.000
N		127	127

In the plans for the Ashuelot Greenspace is the possibility for on-site or nearby parking. From the data we collected we felt it was important to see if there was a correlation between a resident’s desire for parking and their mode of transportation to the new greenspace. We expected that those who indicated they would use a car would be more likely to want parking

at the greenspace. To analyze the two variables respondents who indicated that they would use a car to get to the park were given a value of two and those who would not use a car were given a value of one. The need for parking was requested using a Likert scale with values ranging from 'not important' to 'very important'. As with previous tests, we converted the Likert scale values to numerical values: 1-'Not Important', 2-'somewhat important', 3-'very important', and 4-'no opinion'. To test our null hypothesis that there is no relationship between a respondent's need for parking and if they would use a car to get to the greenspace, a chi-square test was used. Results show that the significance level of .014 indicates that we reject our null hypothesis (Table 4). There is clearly a relationship between these variables that is likely due to respondents' familiarity with current parking options around the Ashuelot River Park. The Connecticut River Bank retail space offers some limited parking, but most of the surrounding streets are not wide enough to accommodate parking, and there are no metered spaces in the vicinity. A designated parking lot will likely need to be part of the new greenspace.

**Table 4** Cars vs. need for parking

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	15.898 <sup>a</sup>	6	.014
Likelihood Ratio	14.863	6	.021
Linear-by-Linear Association	.950	1	.330
N of Valid Cases	127		

Many residents indicated on the survey that they would use a car to get to the Greenspace. Using data that we collected from our survey we wanted to determine if a person's distance to the Ashuelot River Park played a role in the means of transportation that they would use to get to the Greenspace. As with the test above, we assigned a two to those respondents who indicated that they would use a car to get to the space and we assigned a one to those who would not. The distance that a resident was from the park was also assigned a value from one to five, one being 'within quarter mile' and five being 'greater than two miles.' The two variables were then analyzed using a chi-squared test. The result shows a significance value of .000 (Table 5). This indicates that we reject our null hypothesis because there is a relationship between a resident's distance and their use of a car to get to space.

**Table 5** Cars vs. Distance from Ashuelot River Park

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	43.669 <sup>a</sup>	8	.000
Likelihood Ratio	47.191	8	.000
Linear-by-Linear Association	.180	1	.671
N of Valid Cases	128		

The future for the Greenspace is to have a family friendly space where kids will be able to have a place to play. We were curious to see if the current Ashuelot River Park was used by residents with children more than those who do not have children. Analysis was done on the

two variables and it was not significant and therefore the use of the Ashuelot River Park does not relate to a person having kids at this time.

# Chapter Six

.....

## Conclusion

Greenspaces positively impact human lives by providing people an area where they can relax and partake in recreational activities. The Keene park system has many recreational areas that provide a variety of activities for residents to participate in. The empty lot adjacent to Ashuelot River Park has the potential to become a valuable resource to members of the Keene community. The Ashuelot neighborhood and downtown area lack playground facilities for children, and the Ashuelot Greenspace Project has the ability to fill this need.

To understand the wants and needs of community members regarding recreational opportunities, it was important to understand how they currently use parks in Keene. Considering the amenities offered in the parks already, residents specified which activities they partake in at each park. Many respondents indicated that they use playgrounds at the parks that offered this amenity. Parks offering these amenities include Wheelock Park, Robin Hood Park, and Fuller Park. Of these parks, Fuller Park and Wheelock are the closest to the Ashuelot neighborhood however their playgrounds are greater than a mile away. The conversion of the empty lot into a play space for children will satisfy a need in the community for more child-oriented recreational facilities. Residents also expressed interest in making the Greenspace an area that enhances the beauty of the Ashuelot River Park and continues the atmosphere of the park. The project coordinators recognize this, and are interested in preserving the function of the Ashuelot River Park, which primarily serves as an arboretum.

Although there are many parks in Keene, the Ashuelot River Park plays an important role in the future of the Greenspace because of its close proximity. Our results found that a majority of the respondents were familiar with the Ashuelot River Park (67%). This leads us to



believe that Keene residents will quickly become familiar with the Ashuelot Greenspace and the amenities it will provide. Ashuelot Greenspace is located within a quarter mile of three major bike paths in Keene; including the Jonathan Daniels Trail, Ashuelot Rail Trail, and Cheshire Rail Trail. These are some of the most popular trails in Keene and will ensure a high volume of traffic passing by the Ashuelot Greenspace, especially during peak seasons.

The creation of a new Greenspace is a high priority for community members. Residents want to create an outdoor environment that is family friendly and easily accessible, while offering recreational opportunities for the community. The study we conducted provides statistical information for the City of Keene and the project coordinators regarding residents' current satisfaction level with the recreational opportunities already provided in Ashuelot River Park. Based on their responses, we have concluded that implementing a play area for children, increasing bathroom and seating facilities, additional parking, and river access are the amenities desired most. These needs were analyzed and shown to be statistically significant using the data collected from surveys. The significance of river access and parking indicates a need to accommodate residents who live greater distances from the Greenspace. Other suggestions from respondents included implementing a community garden, informational signage relating to the history of Keene and the natural environment of the park, and the provision of dog waste disposal bags.

Respondents appeared excited and optimistic at the prospect of transforming the empty lot into a community greenspace. The future greenspace is located in a prime location for a family-friendly park because of its proximity to downtown Keene, and its access to Keene's bike

path system. Project Coordinators are continuing to attend meetings to inform and promote the Ashuelot Greenspace to the community. Generating excitement and support for the project is an ongoing process and a key component of getting the project off the ground. The most significant challenges facing the project at this point include increasing community support and acquiring funding. Project plans regarding the recreational nature of this proposed greenspace may still be altered depending on additional community input and financial constraints. The Ashuelot Greenspace could fill a significant recreational pressure for the City of Keene thanks to the dedication of several committed members of the community.



**Photo Credit:** Michelle Lefebvre

# Literature Cited

.....

- Bullock, C. H. 2008. Valuing Urban Green Space: Hypothetical Alternatives and the Status Quo. *Journal of Environmental Planning and Management* 51 (1): 15-35.
- Chiesura, A. 2004. The Role of Urban Parks for A Sustainable City. *Landscape and Urban Planning* 68 (1): 129-138.
- City of Keene, New Hampshire. 2012. Active and Passive Recreation Management Plan: Shaping the Future of the Parks & Recreation System, 2013-2023. *City of Keene Parks & Recreation* 1-114.
- Coutts, C., T. Chapin, M. Honer, C. Taylor. 2013. County-Level Effects of Green Space Access on Physical Activity. *Journal of Physical Activity and Health* 10: 232-240.
- Cummins, S., J. Fagg. 2012. Does Greener mean thinner? Association between neighbourhood greenspace and weight status among adults in England. *International Journal of Obesity* 36: 1108-1113.
- Gidlof-Gunnarsson, A., and E. Ohrstrom. 2007. Noise and well-being in urban residential environments: The potential role of perceived availability to nearby green areas. *Landscape and Urban Planning* 83: 115-126.
- Gidlow, C. J., N. J. Ellis. 2011. Neighbourhood green space in deprived urban communities: issues and barriers to use. *Local Environment* 16 (10): 989-1002.
- Jones, A. P., and K. Lachowycz. 2011. Greenspace and obesity: a systematic review of the evidence. *International Association for the Study of Obesity* 12 (5): 1830-189.
- Maas, J., R. Averheij, P. P. Groenewegen, S. Vries, and P. Spreeuwenburg. 2006. Green space, Urbanity, and Health: How Strong is The Relationship?. *Journal of Epidemiology and Community Health* 60: 587-592.
- Miller, L. A. 2003. *The Faulkner & Colony Mill*. Keene: Historical Society of Cheshire County. (Accessed Nov 2013).
- Pretty, J., J. Peacock, M. Sellens, and M. Griffin. 2005. The mental and physical health outcomes of green exercise. *International Journal of Environmental Health Research* 15 (5): 319-337.

- Seaman, P. J., R. Jones, and A. Ellaway. 2010. It's not just about the park, it's about integration too: Why people choose to use or not use urban greenspaces. *International Journal of Behavioral Nutrition and Physical Activity* 7: 78.
- Sherer, P. M. 2003. The Benefits of Parks: Why America Needs More City Parks and Open Space. *The Trust for Public Land*: 1-20.
- Sullivan, W. C., F. E. Kuo, and S. F. DePooter. 2004. The fruit of urban nature: Vital Neighborhood Spaces. *Environment and Behavior* 36 (5): 678-700.
- Takano, T., K. Nakamura, and M. Watanabe. 2002. Urban and Residential environments and senior citizens' longevity in megacity areas: The importance of walkable green spaces. *Journal of Epidemiology Community Health* 56: 913-918.
- Taylor, A., A. Wiley, F. Kuo, and W. Sullivan. 1988. Growing up in the inner city. *Environment and Behavior* 30 (1): 3-27.
- Taylor, A. F., F. E. Kuo. 2011. Could Exposure to Everyday Green Spaces Help Treat ADHD? Evidence from Children's Play settings. *Applied Psychological: Health and Well-Being* 3 (3): 281-303.
- Turrentine, C. 2012. Fall 2012 Enrolment. *Keene State College Office of Institutional Research* 1-4. (Accessed Oct. 2013).
- Turrentine, C. 2012. Keene State College Profile. *Keene State College Office of Institutional Research* 1-2. (Accessed Oct. 2013).

# Appendix

.....



The 3.5 acre parking lot adjacent to the Ashuelot River Park holds great potential as a future greenspace. Creating a child and family-oriented greenspace for recreation would further complement the built environment of nearby neighborhoods. The current vision of this open space is to provide space for physical exercise, play and enjoyment of the outdoors for the community, and access to existing parks and pathways of Keene.

**1. How do you use the parks currently located in Keene? Please mark each activity that you do in each park (if you do not use the park leave it blank).**

	Are you aware of?	Biking	Walking	Kayak/Canoe	Play-ground	Athletic Fields	Swimming	Other (Explain Below)
Ashuelot River Park	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Beaver Brook Falls	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fuller Park	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Robinhood Park	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wheelock Park	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please Explain "other" activities: \_\_\_\_\_

**2. How often do you use Ashuelot River Park?**

☐ Never
 ☐ Sometimes (1-2x a year)
 ☐ Occasionally (1-2x a month)
 ☐ Frequently (>1x a week)
 ☐ Every Day

**3. How do you rate Ashuelot River Park for its variety of recreational activities?**

☐ Very Poor
 ☐ Poor
 ☐ Adequate
 ☐ Good
 ☐ Very Good

Please Explain:

- 4. What form of transportation would you use to get to the proposed Greenspace?**  
(Check all that apply)
- ☐ Car      ☐ Bike      ☐ Walk      ☐ Other \_\_\_\_\_
- 5. How Important is it to have parking space in or adjacent to the proposed Greenspace?**
- ☐ Not Important      ☐ Somewhat Important      ☐ Very Important      ☐ No Opinion
- 6. How Important is river access for loading/unloading Kayaks/Canoes in the proposed Greenspace?**
- ☐ Not Important      ☐ Somewhat Important      ☐ Very Important      ☐ No Opinion
- 7. How often would you use the new Greenspace if it provided the following:**
- A. Area for physical exercise:**
- ☐ Never      ☐ Sometimes      ☐ Occasionally      ☐ Frequently      ☐ Every Day
- B. Play area for children:**
- ☐ Never      ☐ Sometimes      ☐ Occasionally      ☐ Frequently      ☐ Every Day
- 8. How far from Ashuelot River Park do you live?**
- ☐ < ¼ Mile      ☐ ¼ - ½ Mile      ☐ ½ - 1 Mile      ☐ 1 - 2 Miles      ☐ > 2 Miles
- 9. How many children or grandchildren do you have under the age of 12 who also live in Keene?**
- \_\_\_\_\_
- 10. Please list anything you think is missing in Ashuelot River Park for children under the age of 12.**

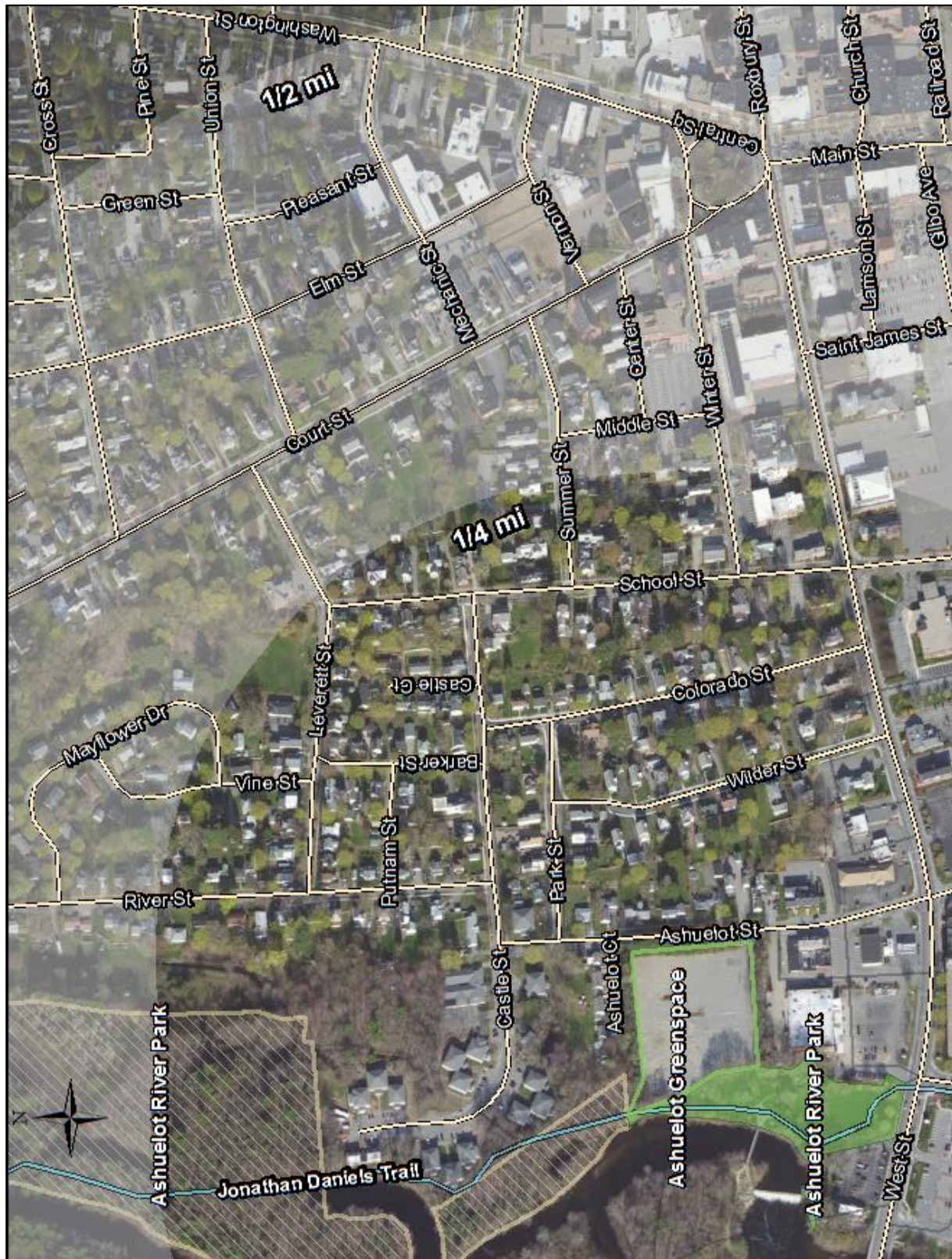
Please Explain:

*Thank you for your time!*

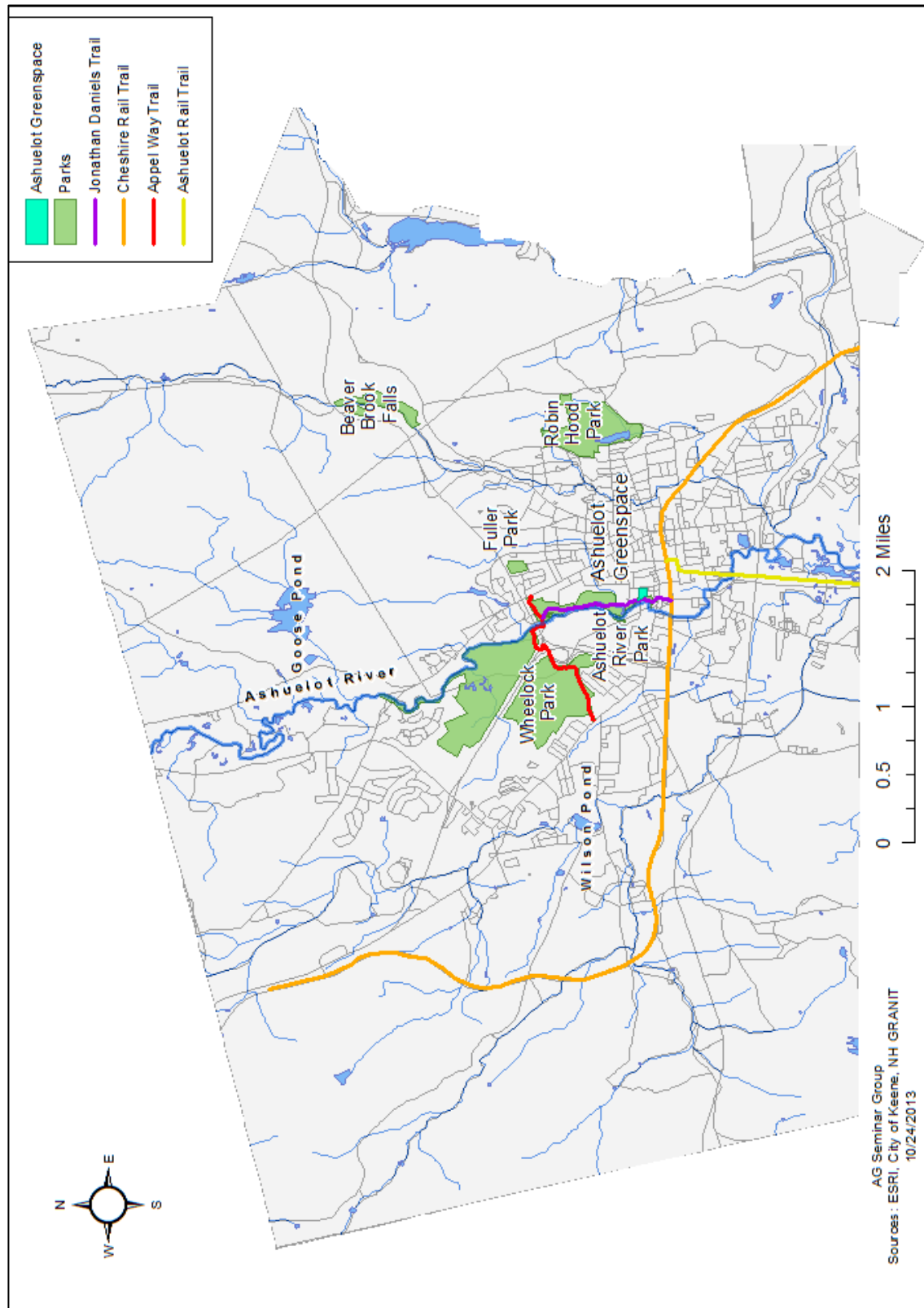


*Geography Department*



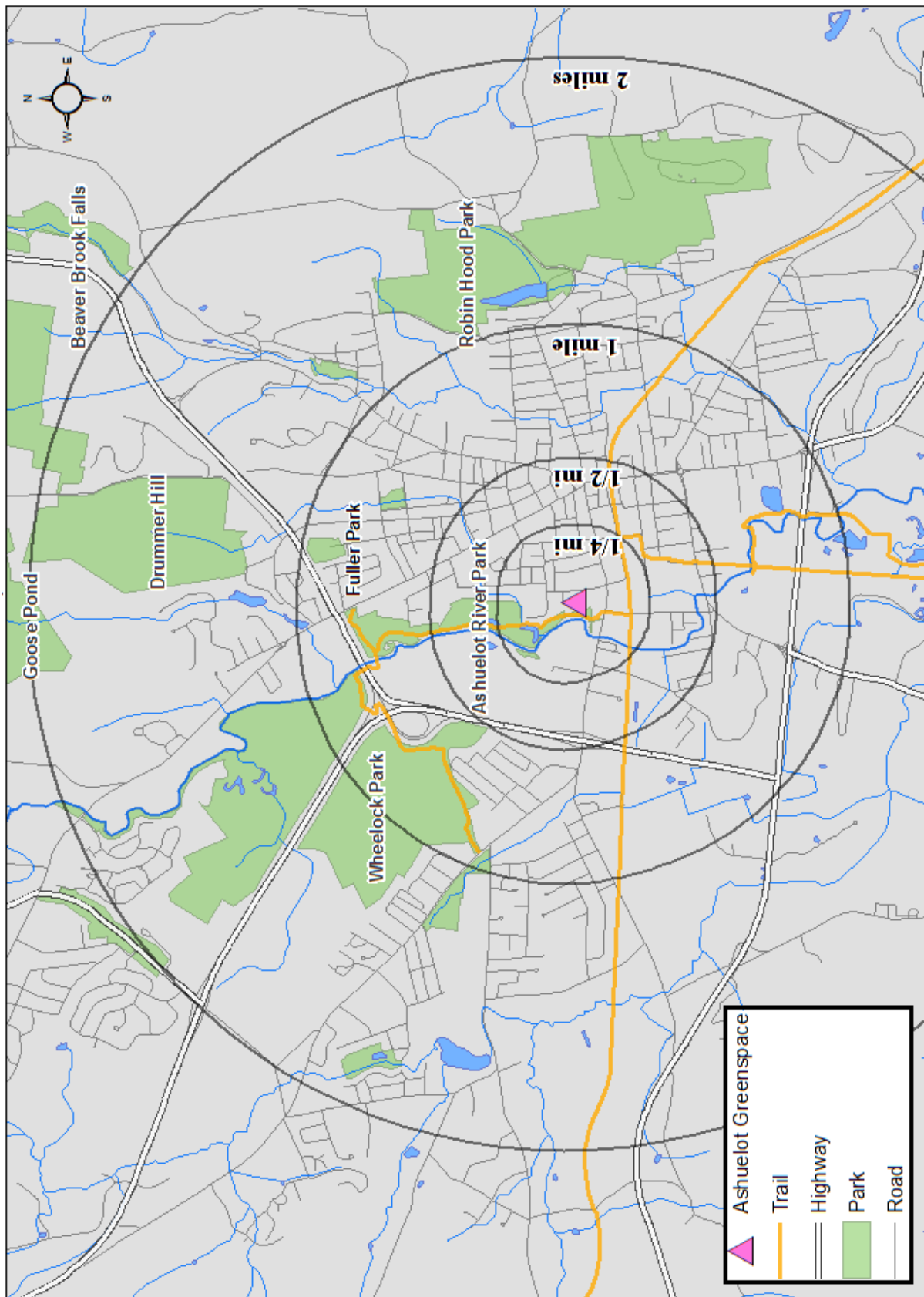


Appendix C: Map of Ashuelot Greenspace and surrounding area

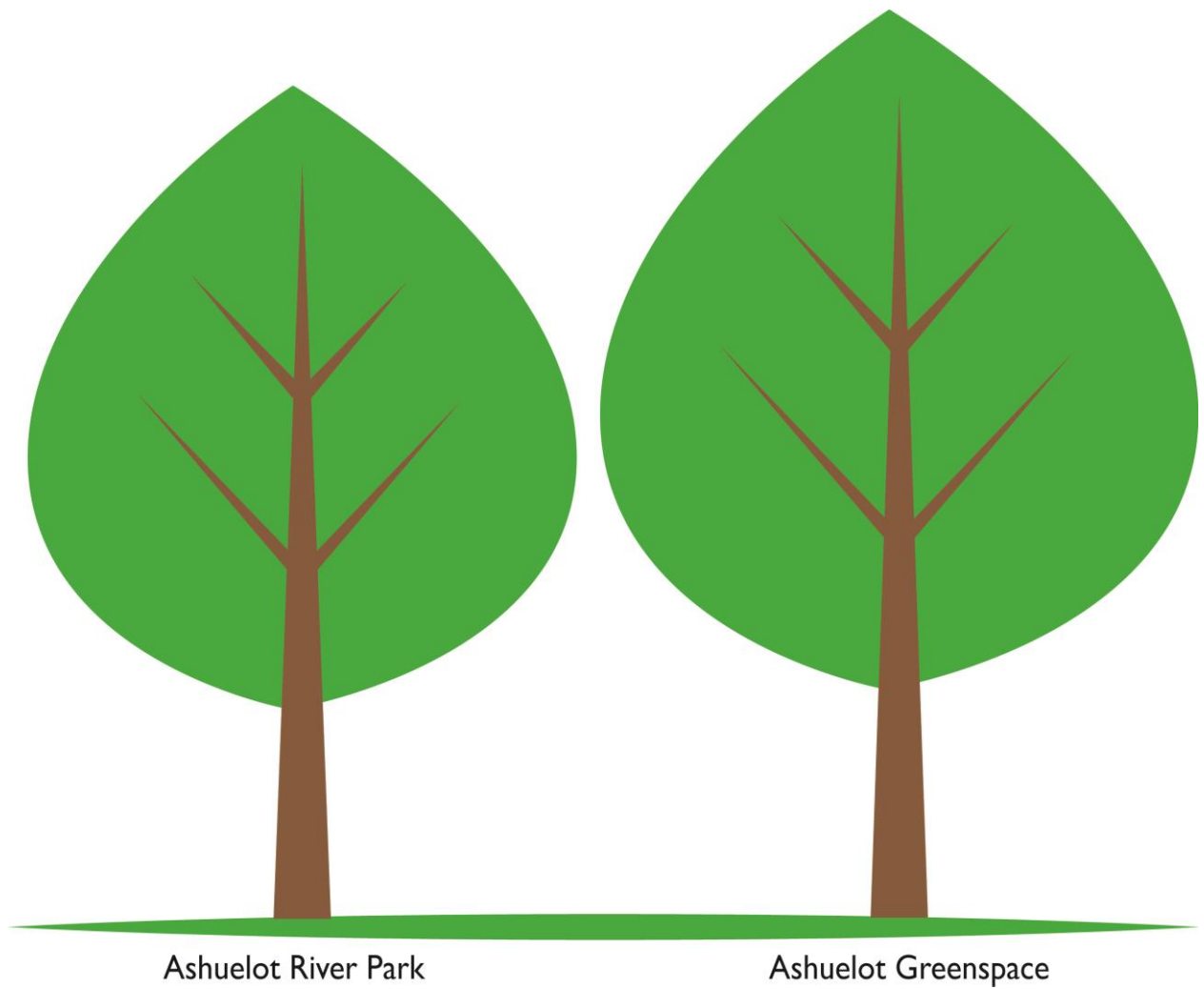


**Appendix D: Map of Park System and Bike Paths**

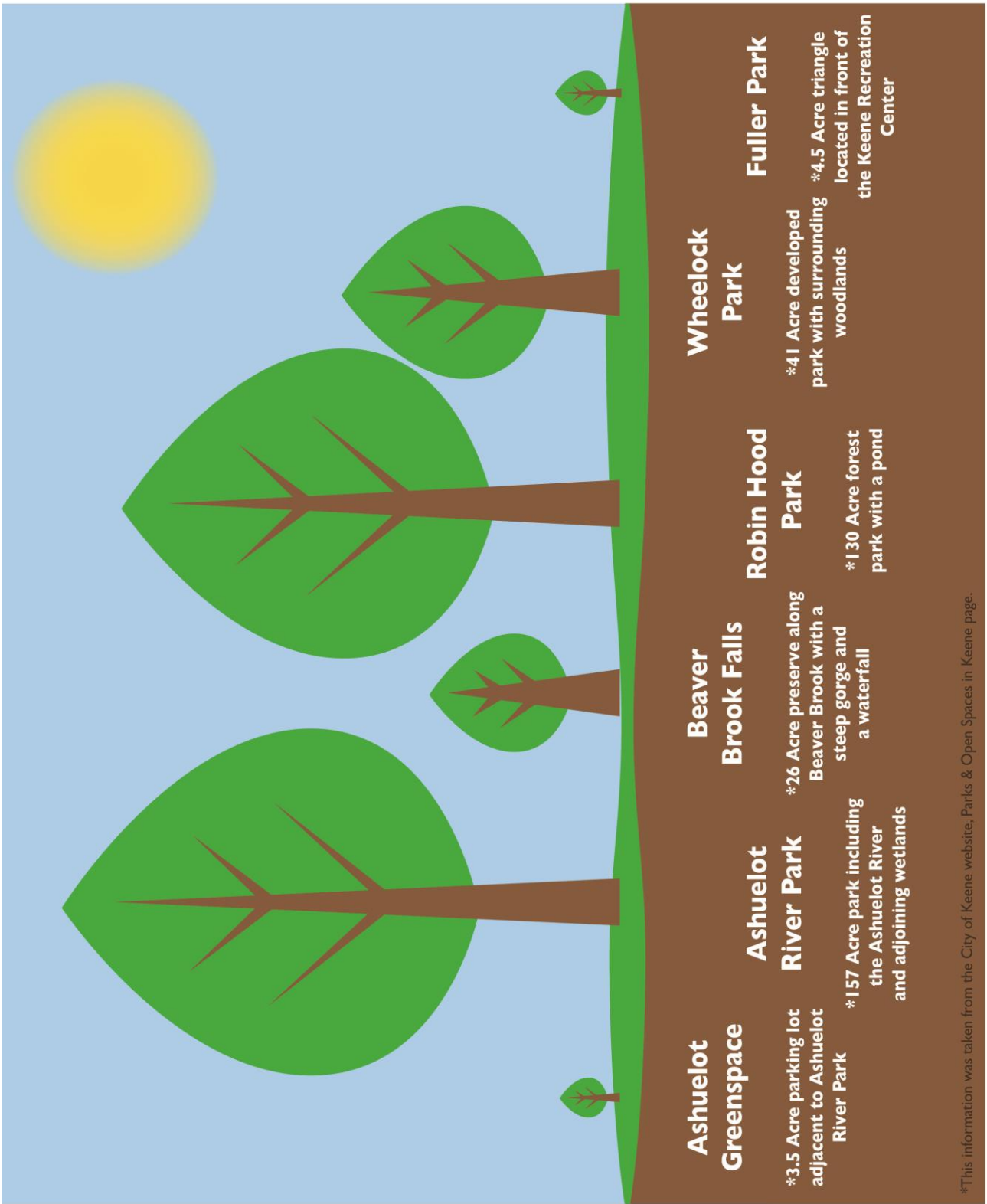




Appendix E: Map showing distance from Ashuelot Greenspace



**Appendix F: Tree graphic – size comparison of Ashuelot River Park and Ashuelot Greenspace**



Appendix G: Tree graphic – size of Keene parks in relation to one another

	American Legion Fields	Ashuelot River Park	Beaver Brook Falls	Beech Hill	Carpenter Street Field	Central Square Common	Cleveland Field	Dinsmoor Woods	Drummer Hill	Edgewood Park	Ellis Harrison Memorial Park	Fuller Park	Greater Goose Pond	Hickey Desilets Park	Keene Forestry Park	Ladies Wildwood Park	North Street Park	Robin hood Park	Sesame Street Park	Skate Park	Sterns Hill	Water Street Courts	Wheelock Park
<b>Environment</b>																							
Educational Experience		✓				✓						✓						✓					✓
Garden Community												✓											
Garden, Display		✓				✓																	
Natural Area		✓	✓	✓				✓	✓		✓		✓		✓	✓	✓	✓			✓		✓
Open Water		✓											✓					✓					
Ornamental Plantings		✓				✓				✓		✓		✓								✓	
Public Art						✓																	
Seasonal Plantings		✓			✓	✓								✓				✓					
Shade		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓		✓		✓
Water Feature			✓			✓						✓											
<b>Sport Facilities</b>																							
Ballfield	✓				✓		✓																✓
Basketball																						✓	
Complex, Horseshoes																							✓
Hockey, In-line																							✓
Horseshoes																							✓
Multi-Purpose Field Lg					✓																		
Multi-Purpose Field, Sm																		✓		✓			
Open Turf		✓								✓	✓	✓		✓									
Skate Park																				✓			
Tennis											✓							✓					✓
Volleyball																							✓

#### Appendix H: First page of Park Inventory

<b>Trails</b>																						
Loop Walk			√								√						√					
Other- Active																	√					√
Trail Connection	√	√		√				√	√				√			√	√		√		√	√
Trail Head																						√
Trail Primitive				√					√				√			√	√			√		
Trail, Multi-use		√																				
<b>Facilities</b>																						
BBQ Grills																	√					√
Bike Parking		√										√					√				√	√
Concessions	√																					
Dog Pick-Up Station	√	√	√								√						√					√
Drinking Fountains						√																√
Event Space																	√					
Park Access	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Parking	√	√	√	√	√	√	√				√	√	√		√		√	√		√	√	√
Passive Node		√															√					
Picnic Grounds																	√					√
Picnic Tables		√			√							√		√			√		√			√
Playground, Destination																	√					√
Playground, Local					√		√				√	√						√				
Restrooms	√	√			√		√					√					√					√
Seating	√	√			√	√					√	√		√		√	√	√	√			√
Security Lighting		√			√	√						√					√		√			√
Shelter, Group		√															√					√
Water Access, Develop																	√					
Water Access, General		√	√								√		√	√								

## Appendix I: Second page of Park Inventory