willard | gateway to the great outdoors

DRURY UNIVERSITY

WILLARD
Parks and Recreation

December 2008
Center for Community Studies
Hammons School of Architecture
Drury University

willard | gateway to the great outdoors

willard | gateway to the great outdoors

December 2008
Center for Community Studies
Hammons School of Architecture
Drury University

Client | Community Members

Willard Park Board

Pat Lloyd, President

Lucille Murray, Vice President

Valorie Simpson, Secretary

Stacee Anderson

Patricia Hall

Jeanna Hood

Blaine Kennard

Katherine Miles

Willard Parks and Recreation Director

Kevin McDonald

City of Willard

Jamie Schoolcraft, Mayor

Kathy Blakemore, Willard City Clerk

Kate Gould, Deputy City Clerk

City of Willard Council Members

Louie Amodeo

Joe Cosby

Dale Duvall

Paul Hood

Richard Simpson

Bryan Vincent

Fig. i Willard Seal

Fig. ii Willard Parks and Recreation logo

acknowledgements

Community Members

Hyrum Adamson
Catherine Bloomfield
Ronald Bryant
Eric Hamilton
Jared Helbig
Dana Kimmons
Morgan Lenz
Guy Morelock
Whitney Morelock
Ronnie Rust
Stephanie Sechler
Sue Smith
Charles Todd
John Wirth

Willard Concerned Citizens Group

Melissa Smith

A special thanks to all community members who made this work possible.

Resource People Utilized

City of Springfield Planning and Development
Ralph Rognstad, Director

Conco Companies
Rob Baird, President/CEO
Chris Upp, Director of Quarry Operations

Great River Engineering
Jerany Jackson, ASLA

MODOT
Frank O. Miller, AICP, District Planning Manager

Ozark Greenways Inc.
Terry Whaley, Executive Director

Springfield-Greene County Library District
Annie Busch, Executive Director
Jim Schmidt, Associate Director of Public Services

Watershed Committee of the Ozarks
Loring Bullard, Executive Director

acknowledgements

Student Team Members

Elyse M. Garlock

Rohit Handa, LEED® AP

Paul J. Peck

Justin W. Petersburg

Patrick A. Thompson

Project Administrator & Facilitator

Mr. Jay G. Garrott, Director, Center for Community Studies, Hammons School of Architecture, Drury University

Drury Faculty

David Beach, Instructor

Michael McCulloch, Assistant Professor

University of Missouri•Extension

Jeff Barber, AIA

Springfield-Greene County Library District
P.O. Box 760 • Springfield, MO 65803
417-883-5366 • thelibrary.org

Fig. iii Library logo

DRURY
UNIVERSITY

Fig. iv Drury University logo

table of contents

The Drury Center for Community Studies (CCS) was approached by the Willard Parks Board to assist them with the preparation of a 20-year vision for the community parks. In collaboration with the Willard Parks Board the 5-person CCS team:

- Prepared a community and regional Assets and Challeges analysis
- Toured and documented all Willard park and recreation facilities
- Researched and prepared precedent studies of similar community efforts related to parks and recreation initiatives and of national trends in "Active Living", Smart Growth, and Livable Cities
- Held four community meetings to discuss park needs and concepts
- Interviewed and engaged groups of middle and high school students in the process
- Interviewed the directors and/or staff of the:
    - Springfield-Greene County Library District
    - Springfield-Greene County Parks
    - Ozark Greenways
    - Watershed Committee of the Ozarks
    - Missouri Department of Transportation
    - Conco Quarry
- Prepared this visioning tool entitled Willard: Gateway to the Great Outdoors

It became obvious early in the parks visioning process that the consideration of the community's future growth needs and patterns was needed before any park and recreation recommendations could be formulated. The Willard community analysis identified several major issues:

- Willard is a "bedroom community" to Springfield
    - most people in Willard work and shop outside the community
    - this makes the local economy dependent upon the automobile and vulnerable to fluctuating energy costs
- The Highway 160 corridor bisects the community parks, schools and governmental services
- That the Frisco Highline Trail and the Rocky Barrens Conservation Area are important community assets that are underutilized and unappreciated by the community
- The community is not adequately protecting its floodplains and sinkhole areas

delete

- Willard is not adequately following the Willard Comprehensive Plan and enforcing its zoning and building ordinances — delete
- Willard has no cohesive intra-city sidewalk and trail network, which necessitates the excessive use of the automobile for community trips — debatable
- That Willard lacks a civic and social city center and identity

The analysis of the community's assets and challenges also identified several opportunities:

- The Willard school system is one of the best in the State of Missouri
- The Willard parks and recreation facilities and programs are very successful
- Willard has many natural features and amenities within and in close proximity to the community that can be used to promote the concept of **Willard: Gateway to the Great Outdoors**
- Willard's "small town rural" character has attracted many people to move to the community and needs to be preserved
- The Willard community is poised for significant growth over the next 20 years

Emerging from this study was the belief that the Willard Parks Board and the Willard parks and recreation activities could serve a major role in:

- Shaping and guiding the growth of the community — contribute to
- Providing the basis for a community ethos that embraces the concepts of "Active Living", smart growth and environmental stewardship
- Selling an economic strategy that promotes Willard as the "Gateway to the Great Outdoors"

This report provides the community with a discussion of these issues and concerns and suggests recommendations for the development of the city of Willard and the Willard parks, trails and open spaces in the years ahead. This report is a visioning tool, not a vision. It still remains for the community to come together to review this report and to formulate the community's vision for the Willard parks system.

This collaborative process has been a great educational experience for all involved and the Center for Community Studies looks forward to working with the community on this and other community initiative in the future.

TRIPLE BOTTOM LINE

The term "Triple Bottom Line" was first coined by John Elkington in reference to business accounting. In practical terms, triple bottom line accounting means expanding the traditional reporting framework to take into account ecological and social performance in addition to financial performance; this was first used by Shell as "People, Planet, Profit".

The concept originated from the 20th century urbanist Patrick Geddes's notion of 'Folk, Work and Place'. "People, Planet and Profit" is used to succinctly describe the triple bottom lines and the goal of sustainability.
http://en.wikipedia.org/wiki/Triple_bottom_line

In this report, we have applied the concept of the Triple Bottom Line to the Willard parks' visioning process by referring to **Community, Environment and Economy**. We believe that this concept of sustainability should inform all individual and communal actions and activities and be utilized in all of the City of Willard's and Willard Park Board's planning, design, implementation and management decision-making.

In the Figure v, the center of the diagram formed by the three overlapping areas of consideration is the City of Willard logo. In normal use the diagram's center represents sustainability. In our application of this concept we see the center of the diagram as representing **IDENTITY**. Our belief is that your identity is a reflection of your response to these considerations.

COMMUNITY + ENVIRONMENT + ECONOMY = SUSTAINABILITY

It is through this balanced and sustainable approach
to the evolution of the City of Willard
that we believe a new community culture and lifestyle
will evolve and help form
a new identity for Willard as the

GATEWAY TO THE GREAT OUTDOORS

Fig. v The Triple Bottom Line

INTRODUCTION

This summary is a collection of the main issues identified by the community and the Center for Community Studies project team during the Willard parks' visioning process. Following the "Triple Bottom Line" concept outlined on page 9, these issues are discussed with specific regard to their *Environmental, Economic* and *Community* considerations. The recommendations presented seek to delineate a strategy for achieving the goal of the Triple Bottom Line concept; *the balanced and sustainable relationship between the environment, economy and community.* It is through this balanced and sustainable approach to the evolution of the City of Willard that we believe a new community culture and lifestyle will evolve and help form a *new identity for Willard as the* ***Gateway to the Great Outdoors.***

Implementation Strategies

With the preparation fo the report entitled Willard: Gateway to the Great Outdoors the first step in the community visioning process comes to an end. The community process used to develop this report was intended to identify the community's goals and objectives, to propose innovative and creative ideas for how those goals and objectives might be met and to educate the community about the challenges and opportunities that the Willard community will confront as it grows and changes. With the dissemination of this report, the second phase of the process begins; the creation of the community's vision for the future of Willard. The Willard: Gateway to the Great Outdoors report is not the "community vision" rather *it is a tool that the community may use to develop* ***its own vision.***

> **The Process** we recommend the community use to create its own community vision involves the public review and discussion of the Willard: Gateway to the Great Outdoors report. This will help to develop a broader community understanding, consensus and "ownership".

• Review, Modify and Affirm

Upon receipt of the Willard: Gateway to the Great Outdoors report, the advisory committee and city officials should formulate a community process for the systematic review of the issues, concerns and recommendations presented herein. After the community review the advisory committee and city oficials should modify or affirm the Willard: Gateway to the Great Outdoors report's long-term vision to fit the consensus of those involved.

• City Council Resolution

The advisory committee should prepare a resolution outlining the Willard parks' vision and the principles that will guide its implementation. This resolution should be presented to the Willard City Council for ratification.

• Respect the Visions' Principles and Guidelines

The Willard: Gateway to the Great Outdoors report outlines the principles and guidelines for the consideration of future city goals and objectives related to the evolution of the Willard park system. As long as the principles and guidelines that have been ratified are respected, then the incremental implementation of the vision will remain cohesive and allow for flexible response to future opportunities and circumstances.

• Review, Modification and Reaffirmation Every Five Years

To keep the vision fresh and relevant, we recommend that as part of the resolution presented to the City Council it state that the city is charged with orchestrating a community review of the Willard parks vision's implementation at least every five years for the purpose of either modifying or reaffirming the Willard parks' vision principles and guidelines for the Willard park system.

PARKS, TRAILS AND OPEN SPACES

This Willard parks' visioning process considered the Willard parks system from the broad perspective of parks, trails and open spaces and the principles of "Active Living".

Willard Park System:

The Willard park system is currently comprised of four parcels: the City Park adjacent to the City Hall, the Recreation Center, the Soccer fields and the undeveloped 20-acre parcel adjacent to the proposed school. Willard park staff provides recreational programming and facilities and cosponsor community education activities for the Willard community.

Suggested Enhancements to the Park's Roles and Responsibilities

Promotion of the concept of Willard: Gateway to the Great Outdoors

- We recommend that the Willard Parks Board and staff accept the concept and marketing tag of Willard: Gateway to the Great Outdoors and seek to promote a community ethos that embraces "Active Living" and environmental stewardship. Willard: Gateway to the Great Outdoors must become more than just a title or marketing slogan; it must become a concept that informs and guides all community decisions and actions.

Promotion of an "Active Living" Lifestyle

- Research has shown that an "Active Living" lifestyle promotes better physical and mental health. This research has also shown a direct correlation between **the design of a community and the physical and mental health of the community residents.**
- The Willard Parks Board and staff should become advocates for the development of an "Active Living" lifestyle in Willard. This would require that the board and staff accept a broader definition of what constitutes community parks and recreation and assumes a more direct and active role in the planning and design of the Willard community.
- We recommend that the Willard Parks Board and staff begin the process of promoting this approach to "Active Living" by studying the literature and joining the Active Living Network.

http://www.activeliving.org/
http://www.activelivingresources.org/partners.php
http://www.activelivingbydesign.org/events-resources/resources/north-carolina-rural-economic-development-center-inc

Active and Passive Recreation

- The Willard Parks Board and staff offer a good range of active and passive recreational programs and opportunities, but we would recommend that the range of active and passive activities be broadened. We specifically see opportunities to develop more passive activities, for example: nature walks and interpretive trails, greenway trails, bike trails, conservation areas, bird watching areas and programs, butterfly gardens, aroma and texture gardens for the visually impaired, demonstration gardens and gardening center and Xeriscapes.

Educational Programs

- We suggest that the Willard Parks Board and staff seek to offer an even greater range of educational programs. We specifically see opportunities for programs in passive recreational pursuits, for example: bird watching, flora and fauna recognition, star gazing, gardening, sustainable principles and practices, nature painting and photography.

Promotion of Partnerships

- We suggest that the Willard Parks Board and staff seek even greater community partnerships for the purpose of promoting parks and recreation programs, community-wide "Active Living" lifestyles, community beautification efforts, land conservation and community marketing.

Community Beautification

- We suggest that the Willard Parks Board assume an even greater role in the promotion and implementation of community beautification. The Tree City program is a great start. We encourage the board to explore opportunities for how the parks system can become a catalyst for community-wide beautification, not just within the parks but within the entire public realm: streets and streetscapes and public properties and facilities.

Sustainable Principles and Practices

- We recommend that the Willard Park Board and staff embrace the principles and practices of sustainability. The advocacy of sustainable principles and practices must extend beyond the concerns of Willard Parks Board's parks and properties to the application of sustainable principles and practices throughout the community. For example, the preservation of floodplains and sinkholes would not only help to improve water quality, minimize flood damage and safe guard habitats it could provide the community with additional parks and open space for active and passive recreation and educational opportunities.

Willard Parks, Recreation Facilities and Open Spaces:

Parks

Environmental Concerns:

The city park adjacent to the City Hall serves the community well. The continued development of this park as a primary community gathering space is advised. However, its separation from the population center of the community diminishes its full effectiveness and necessitates the utilization of the automobile.

The undeveloped 20-acre parcel of land on the southern edge of the current residential district is in a prime location to be developed as a new city park and play field and is a good first step towards distributing park and recreation resources throughout the community.

Economic Concerns:

The Willard Parks Board, city officials, developers and citizens should work cooperatively to identify the proper location of future parks and playing fields and acquire and land bank those sites for future development.

Community Concerns:

The community needs additional parks, playing fields and recreational facilities located throughout the community.

Recommendation:

We recommend that the Willard Parks Board in collaboration with city officials, developers and citizens develop a long range parks, recreation and open space vision that:

- Seeks to evenly distribute the parks, recreation and open space resources throughout the community
- Seeks to anticipate the future growth of the community and acquires and land banks property for future parks, recreation and open space use
    - Particular attention should be given to the acquisition of environmentally sensitive floodplains and sinkholes and important habitats and landscapes
- Sets as its goal the development of community parks, recreation and open spaces within a 15-minute walk or 5-minute bike ride of every residence in the community
- Seeks to establish a community-wide network of sidewalks and trails

Recreational Facilities

Environmental Concerns:

The current recreation building is serving the community well, but due to the success of the Willard parks and recreation system's programming and the community's continued growth the facility needs to be expanded and additional facilities built within the community.

The location of the park facility away from and across the Highway 160 corridor from the residential district of town and the lack of a sidewalk and trails system necessitates the use of the automobile to use the recreation facility. Not only does this further promote the use of the car, the consumption of energy resources and the production of pollutants it contradicts the concept of "Active Living" that the community should be embracing.

Economic Concerns:

The economy of having a centralized recreational facility is diminished when you factor in the cost of driving to the facility.

Community Concerns:

Although there is constant pressure from the community to expand facilities and programming, the Willard Parks Board and staff are doing a commendable job with their current resources.

Recommendation:

As part of the Willard parks long-range visioning we recommend that the Willard Parks Board and staff work closer with city officials and developers to anticipate the location of future park facilities well in advance of the future need. The inadequacies caused by the segregation of the recreational facilities from the population center needs to be addressed by the location of future facilities and the development of a city-wide sidewalk and trail network.

Playing Fields and Open Spaces

Environmental Concerns:

Just like the park building, the locations of the city's playing fields are segregated from the population center by distance and the Highway 160 corridor. The soccer complex is even more remote.

Community Concerns:

The community desires more athletic fields and open space free play fields.

Recommendation:

As part of the Willard parks long-range visioning we recommend that the Willard Parks Board and staff work closer with city officials and developers to anticipate the location of future athletic and open space free play fields well in advance of the future need. These areas should be land banked and reserved for future development.

Willard Trails

Frisco Highline Trail

The Frisco Highline Trail is a 35-mile long regional recreational spine that links Springfield, Willard, Walnut Grove, Wishart and Bolivar. Intersecting the Frisco Highline Trail at Walnut Grove is the Trans-America Trail.

The Frisco Highline Trail is a community asset of great historic, economic and environmental significance that is currently underappreciated and underutilized by the community.

Environmental Concerns:

The Frisco Highline Trail is a gravel recreational trail that follows the old Frisco Railroad line that runs parallel to Highway 160 and Jackson Street through the Willard community. Within the Willard "downtown" area there is a 3-mile section of the trail that has been paved with asphalt. Although the Frisco Highline Trail is the second longest recreational trail in the State of Missouri and intersects the important Trans-American Trail little has been done to develop this community asset as part of a community-wide trail network, a Safe Route to School trail, an integral part of the Willard parks and recreation program or a historic and environmental interpretive trail.

The Frisco Highline Trail should be the principle organizing component of Willard's parks and recreation program and community-wide "Active Living Initiative". The trail should become the spine of a regional and community-wide multimodal trail network for pedestrian, cyclist and park-n-ride commuters. Such a trail network could help to reduce the Willard community's dependence upon the automobile, promote an "Active Living" lifestyle and become a symbol of the community's environmental consciousness as "The Gateway to the Great Outdoors".

Economic Concerns:

Although the trail runs through Willard's downtown, it is not being used to its fullest potential. The trail has the potential of becoming a positive economic catalyst for Willard's downtown renewal. The development of the Frisco Highline Trail's regional potential as a recreation resource and Willard's trailhead as a unique destination for the trail users should be a primary focus for the renewal of Willard's downtown.

Community Concerns:

The Frisco Highline Trail is a positive community amenity that should be better integrated into the Willard community physically, socially and symbolically. Symbolically the trail is the spine that links the community and region together. A network of community and regional trails and linear parks should emanate from the Frisco Highline Trail and be intertwined throughout the Willard community. This network of trails and linear parks should be a part of the Willard parks system and be used to create a more sustainable and "Active Living" lifestyle.

Recommendation:

The Willard community should seek opportunities to develop the Frisco Highline Trail as a community recreational and economic asset. Its location within the community is ideal for helping to renew the "downtown" district economically and symbolically. A key to this development and renewal is the marketing of Willard's Frisco Highline Trailhead as a unique destination for both the trail users and community alike. The development of the Frisco Highline Trail as a linear park and the Willard trailhead as a city center park with regularly scheduled community and park activities could help to promote the trail and Willard as an interesting and exciting destination for family outings. Possible activities and features that could be developed along the trail or at the city center trailhead are:

- Activities:
  - Weekly trail walks and rides
  - 3K, 5K and 10K races
  - The Tour Missouri Bike Race
  - Equestrian trail rides
  - Willard festivals
- Features
  - Informational kiosks that describe the natural features and historic points of interest along the trail
  - A linear outdoor "environmental art museum" along the trail
  - Rest areas at scenic locations
  - Interpretive trails

Willard should promote adopt-a-trail activities to help maintains the trail and foster a sense of pride in and "ownership" of the Frisco Highline Trail within the community.

Lack of Sidewalks and Community Trail Network

The inadequate, inconsistent to nonexistent sidewalks and bike trails within the city of Willard creates a serious safety hazard and a dependence upon the automobile. The development of an interconnected multimodal sidewalk and trail network should be a high priority for the community. Such a network of sidewalks and trails requires, at a minimum, the collaboration of the offices of city government, Willard Parks Board, Ozark Greenways, school district and developers.

Environmental Concern:

The lack of sidewalks and trails within the community inhibits the free movement of the residents, especially the young and the elderly, and increase the dependence upon the automobile for both short and intermediate community trips. This is most apparent with regard to taking children to school or activities; where the parents or the school system has to provide transportation.

The development of an interconnected sidewalk and trail system would have a positive effect upon the community and environment by diminishing the dependence upon the automobile within the community and fostering a more "Active Living" lifestyle.

Economic Concern:

The lack of convenient and independent movement of the residents and the dependence upon parents, guardians and automobile decreases the number of people trips within the community. The decrease in people trips correlates to a decrease in possible sale opportunities.

Community Concern:

The lack of sidewalks and trails within the community creates a safety hazard for school children. Efforts to create Safe Routes to School should become a high priority within the community.

The community should make sure that all sidewalks and trails comply with the Americans with Disabilities Act (ADA) requirements.

The current lack of sidewalks and trails and the physical and psychological barrier created by Highway 160 impedes the free movement of people within the community. The Highway 160 corridor segregates the predominately residential section of the community to the west from the recreation, school and public amenities and services to the east. When the sidewalk and trail network is established the crossing of the Highway 160 corridor will be a major, but crucially important, design challenge to resolve.

Recommendations

The city of Willard should commit itself to the development of an interconnected multimodal sidewalk and trail network throughout the community and extending into the surrounding areas. This network should be more than a ribbon of concrete beside the street. This network should provide safe and pleasant paths through the community. This network of sidewalks and trails should incorporate all streets, public open spaces and easements and the Frisco Highline Trail.

The Frisco Highline Trail should be the spine of the network. All community sidewalks and trails should ultimately link up with the Frisco Highline Trail and create an interconnected system that allows free movement throughout the community and region. Trailheads and activity nodes should be developed at key intersection points within the system.

The goals of this sidewalk and trail network should be the:

- Development of a safe, convenient and attractive non-vehicular transportation system that connects the community's educational, recreational, cultural and economic centers.
- Development of a transportation system that provides all members of the community an accessible and independent means of using the community's resources.
- Development of a trailhead or activity node within a 15 minute walk or 5 minute bike ride from any home in the community; that is within one-mile.
- Development of a system that promotes and stimulates an "Active Living" lifestyle.

We believe that the Willard Parks Board and staff must become the principal advocates of the community's interconnected multimodal sidewalk and trail system. The Willard park system's commitment to the development of an "Active Living" lifestyle is directly intertwined with the development of the sidewalk and trail network.

We believe that it is in the interest of the business community to support the development of the sidewalk and trail network because it will stimulate the free movement of all people within the community and enhance the use and importance of the Frisco Highline Trail through Willard's "downtown".

We believe that it is necessary for the Willard community and city government to reaffirm and more stringently enforce the ideals expressed in the Willard Comprehensive Plan in general and the sidewalk and open space requirements specifically. Better enforcement of the community's building and development ordinances is needed to assure that developers adequately provide sidewalks, trails and open space within their developments that integrate seamlessly with the city-wide sidewalk and trail network.

Highway 160 Corridor

The Highway 160 corridor is a major link between Springfield and Willard. Since most of the residents of Willard work in Springfield this Highway 160 corridor handles a great deal of commuter traffic daily. MoDOT's long-range plan calls for converting this corridor to a four-lane divided highway. Either as a two-lane or four-lane highway this corridor creates serious problems for the Willard citizen's intercity mobility. Highway 160 divides the community physically and psychologically into two separate zones:

- The newer and predominately residential zone to the west
- The older and predominately recreation, school and public amenities and services zone to the east

Currently three of the four Willard park properties and recreational facilities and the Frisco Highline Trail are located on the east side of Highway 160. Since the majority of the residents of Willard live on the west side of Highway 160 this means that anyone using the Willard park facilities must drive.

Environmental Concerns:

The Highway 160 corridor presents a major and serious obstacle for intercity movement. Because of the lack of a safe and convenient non-vehicular intercity transportation network the youth of Willard must rely upon their parents and the school district to take them from the residential section to the recreation and school section of town. This creates a dependence upon the automobile and decreases free movement of pedestrians and bicyclist. This hinders the development of an "Active Living" lifestyle within the community.

Economic Concerns:

As stated, the lack of convenient and independent movement of the residents and the dependence upon parents, guardians and automobile decreases the number of people trips within the community. The decrease in people trips correlates to a decrease in possible sale opportunities.

Community Concerns:

The community needs to establish a safe and convenient sidewalk and trail network that is not impeded by the Highway 160 corridor. It is of great importance to the community to eliminate the segregation of the residential section from the service sector of the community.

Recommendation:

The Highway 160 corridor must be crossed by the Willard sidewalk and trail network in a safe, convenient and attractive manner. This crossing is crucial to the success of the sidewalk and trail network because of the current locations of the public amenities and services to the east and the residential area to the west. As the community grows and the public amenities and services become more evenly distributed throughout the community this Highway 160 corridor issue will remain a major planning and design challenge.

The Willard sidewalk and trail network will need to cross the Highway 160 corridor at several locations. These crossings can be a combination of surface crossings at key intersections, below grade crossings at convenient topographic locations and above grade crossings:

- The least expensive and least safe way to cross the corridor is by developing highly controlled surface level crossing points at key intersections. These crossings must be well signed and striped and have pedestrian crossing signal lights.

- The below grade crossings would be safer and relatively inexpensive if proper topographic crossing points can be identified. The locations where such below grade crossings could occur without having to do significant excavation and tunneling is very limited due to the flat terrain. Consequently, the below grade crossing points will require excavation and tunneling and significant cost. Discussion of where and how these below grade crossing points might be constructed should beginning immediately with MoDOT so that they can be considered in conjunction with the planned future Highway 160 improvements.
- The above grade crossings would be the safest and most expensive option. Again, discussion of where and how these above grade crossing points might be constructed should beginning immediately with MoDOT so that they can be considered in conjunction with the planned future Highway 160 improvements. We recommend that these above grade crossings occur where the Highway 160 corridor and Jackson Street join.

We recommend that the community and MoDOT seek to develop the above grade crossings and to use those crossings as "gateway" into the Willard community. These above grade crossings should be artistically designed and have landscaped structures that accommodate:

- Pedestrian and bicycle paths only
- Pedestrian and bicycle paths within a broader greenway connector or linear park so as to blend the two-halves of the city together more aesthetically and seamlessly
- Pedestrian and bicycle paths and street crossing

We recommend that the section of the Highway 160 corridor that runs through the Willard city limits be carefully considered to minimize its intrusiveness. The development of a highway beautification plan is needed. This beautification plan should consider the use of native trees and shrubs, the aesthetic of the road structure and the design and placement of signs and billboards.

Willard Open Spaces

Land Banking, Preservation and Conservation

Land banking floodplains and conservation easements need to be established so that these naturally critical areas are not developed. The community needs to be "sensitive to the quality of the natural and built environments" (Willard Comprehensive Plan, p. 2.1).

The city of Willard has become a "bedroom community to Springfield" primarily because of it rural setting and excellent school system. The community has seen significant growth in recent years, with more anticipated. Yet the natural, rural qualities that have drawn people to the community are being lost by the manner in which those people have chosen to construct their community. The "rural, small town" character is being consumed by the spread of strip commercial and suburban residential developments. The beauty of the natural environment has been converted to the sameness of housing sprawl. The community is covering up and converting the natural assets that drew the people to the community in the first place.

The city of Willard needs to reconsider its planning, zoning and building practices and convert its codes and practices to support a more environmentally responsible and sustainable community concept and lifestyle.

Environmental Concerns:

The community's developmental approach is seriously weakening the qualities that drew the people to the community in the first place – a "rural, natural and small town" setting. The spread of suburban residential developments is replacing the natural beauty of the area with nondescript sameness. The rural beauty of the open land keeps being pushed further and further to the periphery.

Willard needs to aggressively challenge the status quo and find ways to protect and preserve its rural character. Key to this is the preservation of the natural beauty of the open spaces and environmentally sensitive habitats; including the sensitive watershed areas, floodplains and sinkholes.

Economic Concerns:

Development has already occurred within the floodplains. This has direct economic impact upon those homes and establishments and upon the homes and establishments down stream; this practice lowers the property value, increases insurance cost.

Community Concerns:

Willard must seek to avoid the weakening or destruction of those community qualities that drew people to settle here in the first place. People value the openness, natural beauty and charm of the "rural and small town". The "indiscriminant" development of the land that transforms the rural landscape into suburban sameness needs to be checked before it is too late.

Recommendation:

We recommend that through the practices of land banking, preservation and conservation that the city of Willard protects the environmentally sensitive areas of the community: floodplains, sinkholes, important watersheds, areas of great beauty and open space. These areas should be withheld from development and preserved for the common good of the community. These areas should have easement controls set to restrict the types of land use permitted in close proximity to these preserves.

We recommend that the Willard Parks Board play an integral role in the identification, management and utilization of these preserved lands. These areas would be excellent for the development of educational and recreational activities: greenways, interpretive trails, recreational trails, outdoor classrooms, habitat protection, bird watching, picnicking, ball fields and parks.

Rocky Barrens Conservation Area

Missouri bladderpod is presently found in the following Missouri counties: Dade, Greene, Christian, and Lawrence. Protected populations are being managed at Wilson's Creek National Battlefield (National Park Service), **Rocky Barrens Conservation Area (Missouri Department of Conservation)**, Greenfield Glade (The Nature Conservancy), and Bois d'Arc Conservation Area (Missouri Department of Conservation). Nearly all of the remaining sites are on privately owned land. *http://mdc.mo.gov/nathis/endangered/endanger/bladder/*

Environmental Concerns:

The Rocky Barrens Conservation Area is one of four protected areas for the Missouri bladderpod - Lesquerella filiformis.

Economic Concerns:

The Rocky Barrens Conservation Area is not well advertised and utilized. The city of Willard should utilize this natural resource more effectively and promote it as an environmental, educational and recreational destination.

Community Concerns:

The Rocky Barrens Conservation Area could be better utilized by the community as an education and interpretive trail amenity.

Recommendation:

We recommend that the Missouri Department of Conservation and Willard Parks Board develop a partnership to explore strategies for preserving and expanding the area and utilization of the Rocky Barrens Conservation Area. It would be advantageous to determine if there are ways that the conservation area could be:

- Better marketed locally and regionally to attract more visitors to the community
- Better utilized by the Willard community as an education and recreation area
    - Would it be possible to develop linear parks or trails out to and through the Rocky Barrens site?

We recommend the placement of an informational kiosk on the Frisco Highline Trail explaining and directing people to the Rocky Barrens Conservation Area.

We recommend discussions between the Missouri Department of Conservation, Conco Quarry, Willard Parks Board and the city of Willard concerning strategies for expanding and combining conservation land with the Conco buffer area to establish a larger and contiguous land conservation and recreational area for the community and region.

Conco Quarry Conservation, Reclamation and Partnership

The Conco Quarry is a major force in the Willard community due to the size of its operations and land holdings. The limestone quarried from this site is used throughout the region. Currently, Conco plans to continue quarrying at this site for another 80-100 years. Therefore, the city of Willard and Conco Quarry must find a way to work harmoniously for the betterment of both.

Environmental concerns:

The Conco Quarry has set aside a large natural buffer around most of the quarry site. This visual and safety buffer seeks to protect the surrounding community from the distractions caused by the quarry. Even with this buffer, the neighborhoods located near the quarry complain of the noise and dust created by the mining operations.

Located within the quarry is the habitat for the Painted Bunting bird; its sole remaining refuge in southwest Missouri. The owners of the quarry are seeking to do what it can to protect the bird's habitat.

Even though the quarry is anticipating another 80-100 years of operations at this site a reclamation plan has been developed and is evolving.

The Conco Quarry is located immediately adjacent to and is visible from the Frisco Highline Trail.

Economy Concerns:

The Conco Quarry is the largest industry in Willard and the surrounding area. The management of this quarry has a major economic influence upon the community.

Community Concerns:

The community would like to find ways to preserve and expand the buffer zone around the quarry as further protection from the noise, dust and view of the operation. In recent years the relationships between the community and the quarry owners have become strained; it is in everyone's best interest to repair the relationship. With renewed relations the possibility of utilizing parts of the buffer zone as a conservation and community recreation area should be explored.

Recommendation:

We recommend that the city of Willard open discussions with Conco Quarry pertaining to the improvement in relationships, the expansion and utilization of the buffer zone surrounding the quarry, the ongoing reclamation planning and the establishment of a community "partnership".

We encourage the quarry owners and Willard Parks Board to develop a partnership to explore strategies for preserving the habitat for the Painted Bunting.

We would encourage the quarry owners and Willard Parks Board to explore opportunities whereby the community could utilize portions of the quarry buffer for passive recreation and educational activities: outdoor classroom and interpretive trails, flora and fauna conservation, bird watching, strolling and jogging.

We would encourage the quarry owners and Willard Parks Board to explore strategies for expanding the Conco Quarry buffer and the Rocky Barrens Conservation area to create a larger and contiguous nature preserve. This large nature preserve would be an excellent location for educational activities related to land stewardship and could become an important destination for regional schools and universities and environmentalist.

We would encourage the quarry owners and Willard Parks Board to explore strategies for the improvement of the Frisco Highline Trail adjacent to the quarry. It is the recommendation of this report that the primary connector across the Highway 160 corridor for the city-wide sidewalk and trail network would connect to the Frisco Highline Trail at the Conco Quarry location.

DEVELOPMENT OF CITY CENTER, CIVIC PLAZA AND PARK

The Willard community lacks an identifiable city center for economic, civic, social and recreational activities. The utilization of the Willard park system's parks, trails and open spaces to assist in the creation of a renewed city center is advised.

Current Downtown Lacks Distinction and Utilization

Environmental Concerns:

The linear layout of "downtown" along the west side of Jackson Street lacks cohesion and upkeep. Directly across Jackson Street are several scattered buildings and the Frisco Highline Trailhead. The vegetation in the area is predominately open green spaces with a few trees. This vegetation lacks coordination and upkeep.

The physical space between the storefronts along the west and the Frisco Highline Trail along the east of Jackson Street is very large and ill-defined and does not assist in denoting arrival into the downtown area.

Economic Concerns:

The economic vitality of the "downtown" area is limited and functions only as an 8am to 5pm business zone.

Community Concerns:

The perception of "downtown" is an area that is uninviting and a non-distinctive remnant of the past. The "downtown's" nondescript linear character does not create a "sense of place" or destination and no longer serves its original purpose as the physical, social, civic and cultural center of Willard.

Recommendation:

We recommend the creation of an overlay district for the downtown area that encourages the innovative development of mixed-use activities. This district should extend from Main Street to Perryman Street and from Robberson Street to Mill Street. This will allow the Frisco Highline Trailhead to become a more central organizing feature and economic catalyst for an expanded downtown overlay district. The area to the west of Jackson Street would remain primarily mixed-use commercial and residential and the area to the east of Jackson Street might have limited mixed-use development intertwined with a city center civic plaza and park. By placing the Frisco Highline Trailhead at the heart of the city center this optimizes the multimodal interconnectivity between the city center and the outlying community areas.

An integrated development of the mixed-use commercial and residential activities with the civic plaza and trailhead park would create a distinctive destination and recognizable city center in close proximity to the middle school and high school. We further recommend that the community consider the relocation of the City Hall and the Willard Public Library to the civic plaza. The synergy developed by the creation of a combined economic, civic, cultural and recreational activities zone could redefine Willard's downtown and make it a destination with a strong sense of place.

Parking

Environmental Concerns:

The "downtown" parking areas' lack of order creates an unattractive presence along Jackson Street.

Economic Concerns:

The unattractive and inadequate parking does not assist in creating a memorable and welcoming "sense of place" or destination for the business and Frisco Highline Trailhead district.

Community Concerns:

The "downtown" area does not promote a comfortable and recognizable community space due to the limited connectivity between the businesses, Frisco Highline Trail and parking.

Recommendation:

We recommend that the downtown parking be redesigned to create a visually pleasing and coordinated plan that responds to both the needs of the downtown businesses and the Frisco Highline Trailhead and park. The downtown parking should:

- Be located on both sides of Jackson Street
- Should have curbs and sidewalks that "bump out" to define the city center district and provide safe, well marked pedestrian crossing points
- The parking area should be landscaped with trees and lower plantings to beautify the city center and to help shade and cool the large expanse of parking
    - This landscaping should be an extension of the city center park and streetscape improvements
- The parking area should be paved with a pervious material to allow storm water runoff to percolate into the soil

City Center Civic Plaza and Park

Environmental Concern:

The current "downtown" is dominated by undefined and free flowing open spaces with limited landscaping. The Frisco Highline Trailhead is located across from the remaining downtown establishments but fails to create a distinctive recreational node.

Economic Concern:

The lack of planned landscaping and upkeep of the open spaces has created an unattractive and uninviting downtown area. Additionally, the lack of development of the Frisco Highline Trailhead as a recognizable recreational node has contributed to a lack of economic vitality in downtown.

Community Concern:

The undeveloped open spaces in the downtown area do not attract people to congregate and linger or help to create an identifiable and memorable public space.

Recommendation:

We recommend that the community consider acquiring the property between the Frisco Highline Trailhead and Mill Street and from Main Street to the school and develop it into a city center civic plaza and park. To further strengthen the civic importance of this community space we recommend that the City Hall and the Willard Public Library be relocated to this area.

This city center civic plaza and park would have many benefits:

- It would take advantage of the Frisco Highline Trailhead and integrate it into the city center community space. The integration of the Frisco Highline Trail would be advantageous because of its linkage to a community-wide and regional trail network. This would help promote greater pedestrian and bicyclist access to the city center.
- The plaza and park should accommodate both passive and active recreation activities suitable for all members of the community.
  - The plaza would be used to establish monuments and memorials and to host formal public ceremonies and community events.
  - Between the plaza and the recreational side of the park would be a gently sloping area with an "amphitheater" focused upon the plaza space. This area could be used for outdoor community musical and theatrical performances, movies and community observances, such as the Fourth of July.
  - Also within the civic plaza would be the relocated City Hall and Willard Public Library and a Frisco Highline Trailhead facility.
  - The section of the park beyond the civic plaza area would be developed for seasonal passive and limited active recreation activities. This park could provide spaces for sitting and reflection, picnicking, Frisbee Golf, sledding and free play activities.
  - The civic plaza and park would have both formal and informal landscaped areas.
- Such a city center civic plaza and park would create a strong "sense of place" and destination, reestablish the downtown area as the social and cultural center of the community, promote mixed-use economic renewal, attract people looking for a small town city center housing option and provide Willard with a recognizable and marketable community identity.

Street Side Pocket Parks

Environmental Concern:

The introduction of street side pocket parks would help to visually unify the city center civic plaza and park with the mixed-use business and residential area and add to the distinctiveness of the downtown. The pocket park's landscaped lawns will provide needed pervious surfaces for water runoff filtration, help to cleanse the water and air and cool the surrounding area.

Economic Concern:

The development of street side pocket parks will help to beautify the city center by adding a variety of colors, textures, aromas and settings for the residents and visitors. This more pleasant, inviting and distinctive city center will help to draw people to the downtown.

Community Concern:

The street side pocket park(s) could provide a cool and quiet oasis in the city center for people to rest and socialize. These parks would help to soften the appearance of the city center, provide needed areas for socializing and encourage patrons of the downtown establishments to linger in the area. A renewed and beautified downtown would not only attract shopper, but also new residents to the Willard "village center".

Recommendation:

We recommend the introduction of street side pocket parks in the city center district to help create a more inviting and comfortable public space. These pocket parks should be conceived of as an extension of the proposed city center civic plaza and park between Jackson Street and Mill Street. The character of these landscaped areas should also be reflected in the sidewalk landscaping.

We believe that the incorporation of landscaped sidewalks and parks in the city center will make it a more inviting destination and desirable place to visit and live. The combination of the Frisco Highline Trailhead and proposed city center civic plaza and park and pocket parks could provide the foundation for creating a distinctive and memorable identity for the Willard's city center and community.

Streetscape

The streetscape is the public area between the opposing facades of the buildings lining a street. The design and upkeep of the streetscape determines the character of an area and forms the foundation for establishing an area's identity. Often this is referred to as the street's "livability". The stronger the "street livability", the stronger the area's social and economic vitality.

Environmental Concern:

Numerous environmental factors need to be considered when designing the streetscape:

- The incorporation of natural vegetated features make the streets more pleasant and inviting
- Vegetation helps to cools and cleanses the air
- Sun shading should be provided along the sidewalk: trees, awnings and shelters
- Protection from inclement weather
- Control of storm water runoff

In addition to these functional environmental concerns, consideration needs to be given to the psychological (perceptual) and social environmental concerns: safety, sociability, inviting, relaxing and understandable.

Economic Concern:

The current city center's streetscape has not been carefully considered and, consequently, presents an unorganized and unpleasant appearance and space for the user and passerby. The lack of a distinctive city center can partially be attributed to the lack of streetscape beautification; no one wishes to linger in the current city center area.

The development of an identifiable and distinctive city center would assist in encouraging people to visit the "downtown" area to shop, socialize and live. The Willard community is in need of such a distinctive public location. Willard's lack of "identity" can be attributed to this lack of public space. Willard requires an identity other than Springfield's "bedroom community" near the air port.

Community Concern:

The establishment of a city center that has a vibrant "livable" streetscape would assist in attracting people to the historic downtown and foster civic pride. The community needs a distinctive and identifiable city center that the residents are proud of and want to visit. The combination of the city center civic plaza and park and the integrated streetscape improvements could be the public feature that provides the foundation upon which such a city center can be rebuilt.

Recommendation:

We recommend that the community consider a phased development of a city center streetscape plan that is conceived and implemented in conjunction with the proposed city center civic plaza and park area. The creation of a city center that is distinctive, inviting and vibrant would help the community economically and perceptually.

The comprehensive city center plan should seek to unify the space along both sides of Jackson Street, promote a mixed-use civic and retail center that is unique and establishes a physical and perceptual experience that is memorable and "livable".

HISTORY

In Louisiana Territory, the Osage Indians claimed all of the land west of the Mississippi River to the Rocky Mountains and south of the Missouri River to the Arkansas River. Prior to the Louisiana Purchase, eastern tribes were moving west of the Mississippi River. Groups of Delaware and Shawnee had received Spanish land grants in southeastern Missouri in 1793. By 1800, Osage territory in Missouri had been reduced to the southwest quadrant of the state. The Osage were having difficulties protecting their region from other tribes, particularly the Kickapoo, who had established small villages along the Osage River. The Kickapoo also lived in villages on the prairie that still bears their name.

Prior to 1820, early Euroamericans had moved into the watersheds in what is now Taney, Christian, and Greene counties. The first written description of Greene County is probably that of Henry Rowe Schoolcraft in 1818–1819 (5).

The community was named "Willard", after William Willard of Lebanon, Missouri. According to his mother," He was a surveyor working for the railroad determining where the rail beds should be. He was working in the area of what is now Willard, where the Frisco was wanting to put in a station. When the question of a name for the station and community came up and it was learned that the residents of the area wanted to name it Robberson for Dr. E.T. Robberson who had platted the town. But there was already a town named Robberson in the state and for want of anything else, Bill Willard gave the town his name" (Farmer, 1976).

In 1922, the Willard Consolidated School District was formed and the Willard High School

Fig. vi Cler-Mont, first chief, by George Catlin 1834

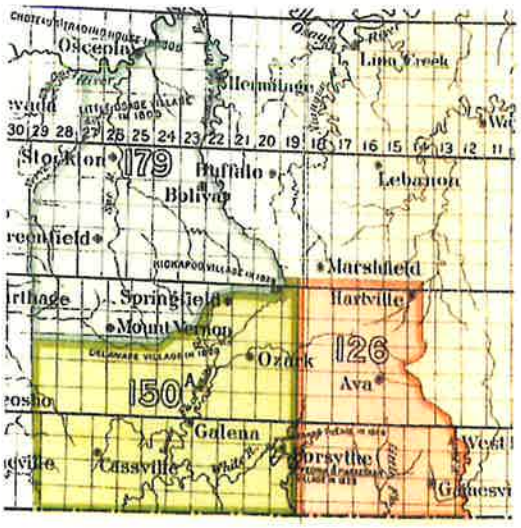


Fig. vii Osage Indian Treaty Boundary

was built. Constructed of red brick, it was the first of its kind in the area besides Central High School in Springfield.

Willard has grown from a rural agricultural settlement in the mid-1800's into a community with over 3100 residents in the early 2000's. Although time and urbanization pressures have brought many changes to the community, Willard continues to retain the best qualities of small town life.

One indicator of the life and vitality of a community is the participation and involvement of its residents. The Willard Parks and Recreation Department had an enrollment of over 3000 youth between the ages of four and thirteen in one or more of the following activities: basketball, soccer, baseball, softball, volleyball, swimming, and dance. In addition, there are adult and senior programs. These programs have been expanded or enhanced by the opening of a new recreation center. This 18,000 square foot building includes two gymnasiums, houses Cox Fitness Center-Willard, and has a community room, classroom and other amenities. This facility has been tremendously successful and is the home to all indoor park activities.

Popular annual events include the Easter Egg Hunt, and the day long 4th of July Celebration, the Frisco Highline Trail Run and SAFE Halloween. In 1998 and each year thereafter, Willard has been designated "Tree City USA" by the National Arbor Day Foundation.

Fig. viii Early 1900's Passenger Train

Fig. ix Harry Truman on the Frisco Highline, 1948

DEMOGRAPHICS

Willard was laid out in 1884 by the late Dr. E. T. Robberson. It is located in Murray Township, 9 miles from Springfield, on the Bolivar line of the Frisco Railroad. It occupies a fine location upon Grand Prairie, on Sections 23 & 26, Township 30 N, Range 23 West. Many beautiful homes are in or near Willard, at the junction of Highways 160, O, & Z. (--Fairbanks & Tuck, Vol. 1, p. 210; Gen. Highway Map.)

As of the census of 2000, there were 3,193 people, 1,154 households, and 909 families residing in the city. The population density was 575.2 people per square mile (222.1/ km^2). There were 1,226 housing units at an average density of 220.9/sq mi (85.3/ km^2). The racial makeup of the city was 97.75% White, 0.16% African American, 0.66% Native American, 0.09% Asian, 0.22% from other races, and 1.13% from two or more races. Hispanic or Latino of any race were 0.53% of the population.

There were 1,154 households out of which 45.7% had children under the age of 18 living with them, 64.8% were married couples living together, 11.3% had a female householder with no husband present, and 21.2% were non-families. 18.7% of all households were made up of individuals and 9.8% had someone living alone who was 65 years of age or older. The average household size was 2.76 and the average family size was 3.14.

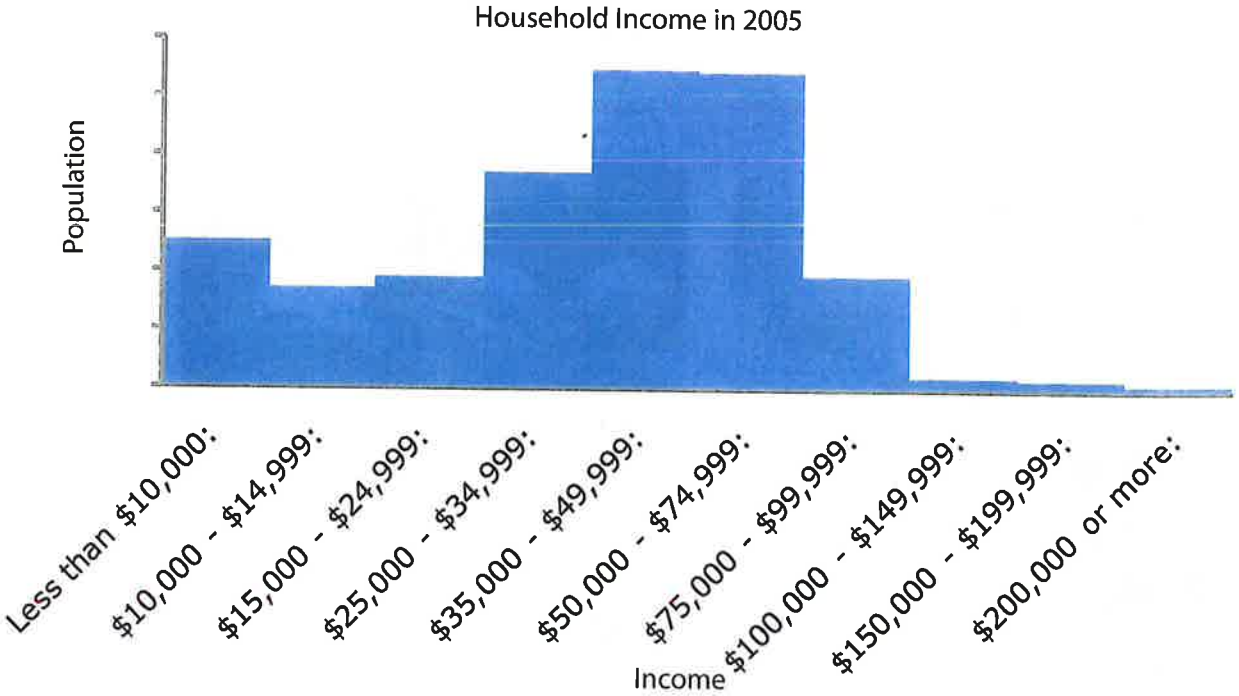


Fig. x

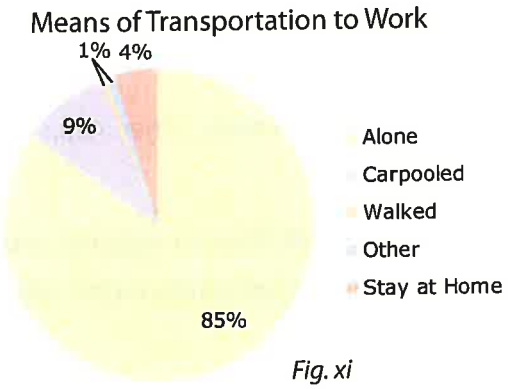


Fig. xi

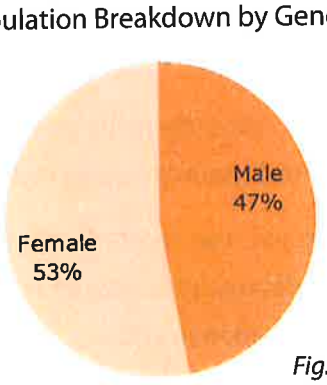


Fig. xii

In the city, the population was spread out with 32.5% under the age of 18, 7.5% from 18 to 24, 33.0% from 25 to 44, 17.0% from 45 to 64, and 10.1% who were 65 years of age or older. The median age was 32 years. For every 100 females there were 89.9 males. For every 100 females age 18 and over, there were 86.5 males. The median income for a household in the city was $39,565, and median income for a family was $43,646. Males had a median of $29,420 versus $20,370 for females. The per capita income for the city was $15,253. 9.3% of families and 9.6% of thepopulation were below the poverty line, including 10.6% of those under age 18 and 12.6% of those age 65 or over.

Theschooldistricthasastudentenrollment of about 3,852, is organized on four levels: K-4, grades 5 and 6, grades 7 and 8, and grades 9-12, and has an accredited rating given by the Department of Elementary and Secondary Education. Willard South Elementary, houses 343 students in grades K-4, is located near the edge of the city limits of Springfield on Division Street. Willard Central Elementary serves 377 students, K-4, and is located on Farm Road 101, north of EE Highway. Willard East Elementary, grades K-4 serves 390 students and is located on Kime Street in Willard. Willard North Elementary, grades K-4, serves 392 students and is located in Willard, Missouri, at the junction of Highway AB and 160. All four elementaries are participating in the Accelerated Schools program. The Intermediate School, grades 5 and 6, compromised of 548 students, is situated on the same campus as Willard North, but the students are separated from elementary students.

The Middle School houses 662 students in grades 7 and 8. In August of 2006, the new Willard High School, located on Jackson Street, opened it's doors with an enrollment of 1,125 students in grades 9-12. The Alternative School has an enrollment of around 15 students. If quality is measured in personnel, then the Willard Schools rank high with 44% of the 286 certified staff members having Master's Degrees or higher.

REGIONAL AND LOCAL FACTORS

Transportation

Highway 160 is the major point of access to Willard itself. However, other major roads are located around the area including I-44.

Airports are also located around the area, with Springfield-Branson regional airport accomodating the largest amount of travellers. The other airports in the region cater to general aviation needs.

Recreation and Historic Sites

In close proximity to Willard, recreation facilities to be noted include the Willard Baseball Field, Ritter Spring Park, Fantastic Caverns, Clear Creek Park, and the Willard Recreation Center. However, some assets of the area which may be overlooked are the Bois d'Arc Wildlife Refuge and the Bladderpod Conservation area to the west and north of Willard respectively.

In a larger scope, the Historic State Sites and the State Parks provide for many of the recreational needs for the area. Activities occuring in these areas include fishing, boating, swimming, trails, picnic, and interpretation activities.

Community Center

The major community centers in Willard include Willard Elementary, Middle and High Schools, the city parks and pools as well as the recreation center. The location of the Frisco Highline Trail takes advantage of the landscape and furthermore, provides a naturally surfaced trail to accommodate horse back riding as well as bicycling, jogging and walking. Areas of community use around the city of Willard include airports, hospitals, academic institutions, conservation areas and all state and city parks.

Economic Centers and Activity

Due to the nature of it's size, Willard relies on the surrounding area to provide its economic foundation. Willard maintains its own Green Hills Country Club, a training center and shooting range. For larger scale fairs, shopping and general activity, Willard can turn to large metropolitan areas such as Springfield, which is within a 15 minute drive. Other economic centers in the region are Branson, Joplin, Lebanon and Osage Beach.

Land Features

The City of Willard spans approximately 5.6 square miles. There are various and assorted springs and creeks within 5 miles of the city limits, including Clear Creek Spring, Brower Spring and McDaniel Lake. While the land is generally considered to be predominantly plains, there is a shallow valley to the east named Big Hollow.

The 100 mile radius around Willard is home to various lakes and streams, vast amounts of flat farmland and lake areas, including Lake of the Ozarks. There can also be found approximately 2,500 sinkholes throughout the Greene County area. Accompanying the large number of sinkholes is a landscaped defined by karsts, "Characterized by the presence of caves, springs, sinkholes and losing streams, created as groundwater dissolves soluble rock such as limestone or dolomite." (http://dnr.missouri.gov)

Demographics

The demographics of the area inform the scale of the project and certain design decisions. The Willard area is conducive to the larger Ozark region and also the state of Missouri which facilitates the idea of the Triple Bottom Line and Willard's new identity as The Gateway to the Great Outdoors. The emphasis within Willard and the surrounding area on education and recreation is represented in the number and types of family groups that are found in this region. The common thread that connects all the residents of Willard then can become the Parks and Recreation Department. The trails and emerging national trends can also facilitate this relationship through environmentally friendly design, economically stimulating planning, and the continued social interaction of the community.

LIVABLE CITIES

The purpose of making Cities Livable is to enhance the well-being of inhabitants of cities and towns, strengthen community, improve social and physical health, and increase civic engagement by reshaping the built environment. (http://www.livablecities.org)

Public Realm

Contact among inhabitants, and the dialogue that ensues in the city's public places is the "ultimate expression of life in the city". A well-functioning public realm serves multiple important functions: It builds social capital by cementing social relations through repeated contact among inhabitants in multiple overlapping role relationships. The public realm at its best is an incomparable teacher of social skills and attitudes; children and youth learn to relate and behave with a diversity of others. In bringing inhabitants together the public realm encourages all to linger, share observations and perspectives, and thereby humanizes all who participate.

Squares and Marketplaces

The marketplace is still the heart of most cities and towns, the center of economic, civic, social and cultural life, providing multiple reasons for people to talk to each other, to work together, to coordinate activities, to prepare for community festivals, and to celebrate together. The square is a public space, an inclusive space – no one can be kept out - so unlike shopping malls, the square is fundamentally a democratic space. The square that functions as a market place in the morning, a place for outdoor cafes and restaurants through the afternoon and evening, quiet and peaceful on some days, and on other days the setting for festivals, street musicians and theatrical performances, a ceremonial civic stage, and a playground for children --- this is a square that brings all the diverse members of the community together in one place.

Outdoor Cafes and Restaurants

Outdoor cafes and restaurants encourage people to spend more time in public spaces, facilitating meetings and extended conversations in the public realm, even into the night. These also require traffic free public places where children can safely play.

Farmers Markets

The farmers market is important not simply because it brings fresh produce into the city and provides an incomparable aesthetic experience: in fact, the farmers' market is one of the most powerful generators of social and economic life and must be given a place on the main square. The farmers are well skilled in interaction and act like "hosts" in the public space; they know their regular customers and make people feel recognized and valued.

Fig. xiii Farmer's Market

Community Festivals

True community festivals instill in the individual a sense of joy and well-being. They promote a shared sense of identity and pride in community. Community festivals are both the expression of a sense of community and a mechanism for the development of community. They bring together the diverse population, people of different ages, social and economic groups, ethnic backgrounds, and enable them to work together to achieve a common goal – the celebration of the community as a whole.

Fig. xiv Community Festival

Mixed Use Shops/Houses

In a town or city structured on principles of Livable Communities the primary building block is the "shop/house", with shop, workshop or restaurant at street level, and residential dwelling above. The close proximity of living, working, socializing, of the private and the public realms, are what makes the public realm so hospitable, and the private dwelling so convenient. This fine textured community fabric makes the traditional city not only socially healthy, but also ecologically sound, eliminating unnecessary travel.

Fig. xv Mixed Use building

Fig. xvi Pedestrian & Bike Path in MN

City of Short Distances

To reduce distances traveled everyday to work, shops, school, etc. the city must have a cellular structure: the town center and each neighborhood district must contain diverse work opportunities, shopping, housing, and all necessary infrastructure – schools, medical services, etc within a short radius. Only then does it become possible for people to walk or bike to work, school or shops. This goal is called, the "City of Short Distances". There are social and health benefits as well as ecological advantages to this: commuting by foot through one's neighborhood permits people to begin to recognize strangers as "familiars", makes possible greetings, conversation among friends, and play among children under the eye of adults all micro-social events that help to build community. Commuting by automobile has the opposite effect, destroying the social fabric.

Balanced Transportation Planning

The transportation planner sees more clearly that their job is not about movement of vehicles, but about people and accessibility. They consider all members of the population and the varied trips that they need to make and makes

Fig. xvii Safe Routes to school in NM

Fig. xviii New square in Copperopolis, CA

these trips as pleasant, economical, safe, comfortable, simple and autonomous as possible. The emphasis on the trips people make instead of movement of vehicles has led planners to practice "balanced transportation planning"; that means that, since in the past there has been an overemphasis on movement of vehicles, planning for the "softer" and more ecological modes of transportation must now receive priority – that is, trips made by foot, by bicycle and by public transportation. And the trips made by children must be considered as seriously as those made by working adults.

Pedestrian Networkds

Hundreds of cities have closed central areas around their main square to traffic, creating pedestrian zones, and these traffic free zones are gradually being extended by traffic-free or traffic tamed streets out into surrounding neighborhoods, creating a continuous network of pedestrian routes throughout the city. Where pedestrians and vehicles cross on these networks it is the pedestrian who is given priority – for example by raised table crossings at the height of the sidewalk. (Pedestrian bridges and underpasses that give priority to vehicular movement are unsatisfactory for pedestrians).

Bicycle Networks

The bicycle is a more sociable – as well as ecological form of transportation and is encouraged in the town center. Some cities have already created a continuous city-wide network of dedicated bicycle lanes so that it is possible to bicycle from residential neighborhoods into the heart of the city, or out into the surrounding countryside without having to fight for space with motorized vehicles.

Traffic Quieted Streets

Cities pioneered in techniques to reduce the volume and speed of vehicular traffic. Their methods include the ("living street"), where pedestrians, including children have equal rights to use of the full width of the street as do vehicles. Vehicles must proceed at walking speed, they cannot use the street for through traffic, or park there if they do not live there or deliver there. By now most large and small streets in ("living street") cities have been redesigned to "calm" traffic and reduce traffic volume. These techniques include "necking", jogging traffic lanes, "roundabouts" or "circles", repaving and raising crosswalks, reducing traffic lane widths, and number of traffic lanes, paving traffic lanes with cobble stones, planting islands, etc.

Fig. xix Stimulating sculpture in Canadian Park

Fig. xx City Center Park in MA

Fig. xxi Fountain creates focal point in IA

Public Transportation

Strategies to reduce the use of the automobile can only work if a better alternative exists. To compete with the private automobile public transportation has to be more convenient, faster, less expensive, and at least as comfortable as the car – and many cities have achieved this, in part because they have insisted on maintaining the traditional compact,

mixed use community fabric. The network of routes is very extensive, minimizing the walking distance to a stop; the frequency of service is every 7 – 10 minutes; buses and trains are designed to be light, comfortable and easy to step into; and the fact that the public transportation travels through the center of the city which is closed to cars means that access to destination points is better than by car. In addition, the funds that used to support infrastructure for cars have been redirected to improving and subsidizing public transportation. Of course a public transit system cannot work without an appropriately compact built community fabric. The wisest transportation planners now say that the best transportation system is the one that requires the least transportation.

The DNA of the City

Many cities have developed their unique identity over hundreds of years, building on their best loved features. We have proposed the metaphor that for the city, as for every living thing, we can determine a genetic code, or DNA structure. The DNA is expressed in those architectural and spatial characteristics best loved by the city's inhabitants. These may consist of certain building materials and colors, a typical arrangement of scale and architectural forms, building lot size, roof lines, scale of public and semi-public spaces. In order to fit into the context, new buildings have respected this "genetic code", reflecting at least some existing patterns, or interpreting them in a contemporary form. These early design guidelines specified, for example, that paving for the square, and the surrounding marketplace should be of brick; they defined the scale of buildings and size and proportions of windows; and they made the point that the façade of every building in the city should be considered as a "gift" to the city as a whole. When inhabitants themselves are able to recognize what fits and what does not fit, what violates the unique character of the city, and what is appropriate or not appropriate, there is general consensus that the British playwright Peter Shaffer called the "communal eye".

Children and Young People

If we want to make our cities healthy and livable for all, then we must first make them livable for children. If our cities are unhealthy or lack livability, children are the first to suffer. Every aspect of the city's community design, built fabric, organization of streets, or

pattern of transportation impacts on children. Robbed of the natural exercise of walking or biking to school, afterschool activities, visiting friends, etc. by the sprawling auto-dependent character of suburban developments child obesity has become a national problem. Robbed of the impromptu social interaction in community life that can accompany autonomous walking and biking to school in a "city of short distances" children are failing to develop a sense that they are included in their community. For excitement some young people turn to the most pathogenic environment of all – the world of violent video games. An important emphasis of the IMCL "International Making Cities Livable" effort is to identify how the design of the physical environment can support inclusion of children in the public social realm, and how this can educate them to become valued community members and citizens. Good public spaces facilitate the social development of children: they learn how to talk to adults other than their parents and teachers. In good public spaces the conversations among varied adults present a model for children to emulate. Children grow up assuming that they are the kind of person that their physical environment tells them they are. They see their environment as a portrait of themselves; an ugly, brutal environment has a deadening effect, seeming to justify brutal and violent reactions.

The City as a Work of Art

For hundreds of years the city was considered a work of art. The pleasure that inhabitants and visitors experience in a city that is beautiful is translated in the body into "endorphins" that increase mental and physical well-being. A beautiful city is a city that is aesthetic as a whole, in the relationship of buildings to one another, and in the design of individual buildings and places. The image of the city as a whole becomes difficult to grasp as we permit our cities to sprawl into mega-cities. We need smaller, more cellular cities with clear green boundaries, centers and focal points. The view or the idea of the city as a whole – or the neighborhood as a whole – should provide a sense of pleasure. To create a beautiful composition of buildings that complement each other around a shared public place used to be a goal of city making The interconnection of greenways and open spaces within the built environment often complement the natural setting in which the city lies. *(http://www.livablcities.org/TrueUrbanism.htm)*

ACTIVE LIVING

Active living by design promotes environments that offer choices for integrating physical activity into daily life. Not only do active living communities provide a source of physical activity, but to rural towns in particular, active living contributes to revitalization by marketing historic, cultural and local attributes. (http://www.activeliving.org)

Preparation

Preparation is a critical first step in creating a physically active community. This includes developing and maintaining a community partnership. This strategy also entails collecting relevant data to inform program planning and pursuing financial and other resources.

Fig. xxii Family activities facilitate Active Living

Promotion

Effective promotion or communications efforts are vital to the success of any active living program. Communications are the means by which the project connects with the public. Specific messages include the benefits of active living and the importance of community environments in promoting healthy living. As part of this process, presentations, news releases, fact sheets, and other forms of communication are evaluated to determine whether they truly connect with the intended audiences. Promotion strategies should also help to ensure that other policy, programmatic and infrastructure goals are successfully achieved.

Fig. xxiii Community events provide interaction

Programs

Programs are organized on-going activities that engage individuals in physical activity either directly or indirectly. Active living programs provide direct access to physical activity opportunities. Other programmatic approaches reward individuals for adopting more active habits through incentives or other encouragements, such as benefits for employees or students who walk or bicycle to work or school.

Policy

Policy development is the key to health-supportive environments. Active living partnerships should identify and attempt to influence changes in public policies and standards as well as organizational practices. Educating policy makers - as well as citizens, professionals and advocates - about the need for local environments that support active living -- is an essential component of this strategy. In general, policy tactics are those that end with a policy change (e.g., adoption of greenway master plan, pedestrian friendly street design guidelines).

Fig. xxiv After school activities promote health

Physical Projects

Finally, physical projects are strategies to directly impact built environments, removing barriers to physical activity and enhance safety (e.g., trails, pedestrian improvements at intersections). While the built environment is heavily determined by public policies, active living partnerships should also look for opportunities to improve physical spaces that do not rely on a policy decision per se. Physical projects include a wide range of sizes from community trails to sidewalks to signage pointing out active living opportunities on taking the stairs.

Active Living developed as a response to growing numbers of people with common chronic diseases. This program, and others like it, have successfully addressed these issues and contributed to happier and healthier community development.

Fig. xxv Gardening is good for the environment

The Effects of Parks, Trails and Greenways on Physical Activity

In a Missouri survey, 55.2 percent of people using trails reported an increase in walking since they began using the trails. Women and people with a high school education or lower were more than twice as likely to have increased their amount of walking since they began using the trails. People with access to neighborhood parks were nearly twice as likely to be physically active as those without access to parks.

Not only can active living positively impact physical health, it can also improve the overall well-being of a community mentally and physically.

Linking parks and trails to destinations of interest would allow more people to walk. As the community focus is mainly on the school age population, there are specific tools that can be use to involve kids.

Parks and Playgrounds

Activities involving parks, playgrounds, gardens and sidewalk systems will foster the youth and keep them in the community.

While building—and maintaining—safe and accessible places for kids to play is no small task, pioneering efforts are underway. National organizations, such as the National Recreation and Park Association (NRPA) and Trust for Public Land (TPL), as well as local ones, have launched massive efforts to create healthy places for children and families to have fun and be physically active. TPL, for example, has helped complete more than 420 park projects in some 190 cities across the country.

These and other coordinated efforts are establishing everyday recreational opportunities, promoting healthy behaviors in kids and revitalizing communities.

Community Gardens

Community gardens have great potential to be health-promoting places for kids. Fruit and vegetable gardens can provide opportunities for routine physical activity, as well as access to healthy food.

Traffic Calming Measures

Walking and bicycling are basic means for kids to get essential physical activity while getting from place to place, either in their neighborhood or on the way to school. Yet unlike 20 years ago, walking and bicycling to school are more the exception than the norm in many places. Many neighborhoods lack sidewalks, bike lanes and safe paths, or have dangerously fast traffic.

Successful initiatives, such as Safe Routes to School programs and International Walk to School Day, are bringing national attention to how built environment changes can positively affect children's health and well-being.

For the Rural Community

In respect to the entire community of Willard and other rural communities, active living principles respond to haphazard development, particularly in traditional town centers. Abandoned main streets and employment centers lead to dispersed development and even community disintegration. To reverse this, rural towns have begun to identify assets that draw growth back to town centers. By marketing historic, cultural, locational attributes, as well as the school community, Willard can attract public support and financing for redevelopment and new development.

Examples of successful rural development, revitalization, and conservation illustrates two characteristics:

A critical mass of committed citizens determined to enhance their community's growth and quality of life.

The recognition and use of the area's assets — location, natural resources, natural attractions, and historic and cultural value.

(http://www.activeliving.org)

Fig. xxvi Family events can also be educational

SMART GROWTH

Proponents of smart growth advocate comprehensive planning to guide, design, develop, revitalize and build communities that: have a unique sense of community and place; preserve and enhance natural and cultural resources; equitably distribute the costs and benefits of development; expand the range of transportation, employment and housing choices; value long-range, regional considerations of sustainability over a short-term focus; and promote public health and healthy communities.

In communities across the nation, there is a growing concern that current development patterns -- dominated by what some call "sprawl" -- are no longer in the long-term interest of our cities, existing suburbs, small towns, rural communities, or wilderness areas. Though supportive of growth, communities are questioning the economic costs of abandoning infrastructure in the city, only to rebuild it further out.

The features that distinguish smart growth in a community vary from place to place. In general, smart growth invests time, attention, and resources in restoring community and vitality to center cities and older suburbs. New smart growth is more town-centered, is transit and pedestrian oriented, and has a greater mix of housing, commercial and retail uses. It also preserves open space and many other environmental amenities. (http://www.smartgrowth.org)

Principles

Create a range of housing opportunities and choices providing quality housing for people of all income levels is an integral component in any smart growth strategy.

Walkable neighborhoods and communities are desirable places to live, work, learn, worship and play, and therefore a key component of smart growth.

Encourage community and stakeholder collaboration. Growth can create great places to live, work and play -- if it responds to a community's own sense of how and where it wants to grow.

Foster distinctive, attractive communities with a strong sense of place. Smart growth encourages communities to craft a vision and set standards for development and construction which respond to community values of architectural beauty and

distinctiveness, as well as expanded choices in housing and transportation.
Make development decisions predictable, fair and cost effective. For a community to be successful in implementing smart growth, it must be embraced by the private sector.

Mix land uses - smart growth supports the integration of mixed land uses into communities as a critical component of achieving better places to live.

Preserve open space, farmland, natural beauty and critical environmental areas. Open space preservation supports smart growth goals by bolstering local economies, preserving critical environmental areas, improving our communities quality of life, and guiding new growth into existing communities.

Provide a variety of transportation choices. Providing people with more choices in housing, shopping, communities, and transportation is a key aim of smart growth.

Strengthen and direct development towards existing communities. Smart growth directs development towards existing communities already served by infrastructure, seeking to utilize the resources that existing neighborhoods offer, and conserve open space and irreplaceable natural resources on the urban fringe.

Take advantage of compact building design. Smart growth provides a means for communities to incorporate more compact building design as an alternative to conventional, land consumptive development.

Issues

Smart growth offers a framework to build community and create and preserve a sense of place. It does this through housing and transportation, urban green spaces, recreational and cultural attractions, and policies that promote mixed-use neighborhoods.

Smart growth creates communities that offer health, social, economic, and environmental benefits for all. It achieves this by promoting resource-efficient building and community designs, green building practices, low-impact development, and mixed-use and walkable neighborhoods.

Smart growth encourages community-based small business investment and development, adds to the variety of local employment opportunities, and helps attract new businesses and industries. More efficient government services are key to this, as are

public and private investments that focus on quality of life improvements.

Many of our current environmental challenges — air and water pollution, global warming, habitat fragmentation and conversion — are due in part to the way we have built our neighborhoods, communities, and metropolitan areas during the past half-century.

Smart growth reduces health threats from air and water pollution and indoor air contaminants through resource-efficient building design and offering transportation options such as mass transit, bike lanes, and pedestrian walkways. These engage residents and workers in a more active, healthy lifestyle.

Smart growth promotes housing options for diverse lifestyles and socio-economic levels. It does this through mixed-use, affordable housing and compact development that revitalizes neighborhoods and provides an alternative to automobile-dependent communities.

Smart growth protects public health and environmental quality, conserves energy, and improves the quality of life in communities by promoting new transportation choices

Fig. xxvii LEED neighborhood design in Bozeman, MT

COMMUNITY MEETINGS

The purpose of the community meetings were to gain input from the parks board members and determine what recreation needs the community had and what would be necessary to create a successful parks and recreation system in Willard. To begin with we were given the location of four parks that are currently owned and operated by the parks board and were asked to expand on these locations. A list of needs, wants and concerns was brought up by the community and parks board members that included several issues:

- A skate park
- Parks and schools joining together to promote more activities
- Enhance greenway trails and better connectivity within city
- Expand recreation center to include another gym
- Lighted fountain|water feature at entrance of city park
- Adult activities (horseshoes, pickle ball, senior citizens, indoor pool)
- More trees
- More community involvement
- Community education classes, computer classes
- Soccer complex to include conservation area or recycling area
- Sponsored golf tournament at the country club
- Two more baseball/softball fields – more room for adult activities
- Tennis courts
- What to do with 20 acres of bare land?
- Adult gym expansion
- Willard history follows rail line – incorporate
- Keep open spaces for frisbee, football, etc
- Frisco Highline Trail is the spine of the community
- Depot for public use and historical significance
- Parks|Schools|City connectivity through linkages of safe routes
- Festival – weekends in summer to create economic stimulation
- More bike paths with greenways|open space|parks

- Create city center to emphasize focal point within the city
- 160 beautification as well as safe crossing – pedestrian bridges
- Natural resources in area – connect with trails and greenways
- Sculpture garden along 160
- Green|sustainable|renewable resources community
- Recreation and education emphasis
- Rework infrastructure
- Create better working relationship within city|schools|parks

After listening to the park board and community concerns it became apparent that the scope of the project would have to include looking at a larger context and creating a master plan that encompasses a wide variety of issues. This would require cooperation within Willard's community and city leaders to reevaluate what it would take to create a community that could be singled out as having a unique and impressive identity.

To assist with our understanding of the needs of a responsible parks and recreation plan we contacted several people with expertise in a range of different fields that could better inform our recommendations.

Loring Bullard: Springfield Watershed Executive Director

The meeting with Loring Bullard supplied much valuable information on the impacts of residential and commercial development on the water resources and environment surrounding Willard. Because Willard gets its water from wells any new development will put additional strain on the aquifers that supply not only Willard but other communities in the surrounding area. Creating developments that use less water and incorporate methods to store and reclaim rainwater are important methods to lessen the town's reliance on well water. Another topic discussed was the impact of stream erosion due to runoff. Incorporating permeable surfaces in parking lots and sidewalks would greatly reduce the amount of excess water running into the streams and thus lessen erosion.

Jerany Jackson: Great River Engineering, ASLA

Jerany Jackson discussed different organizations that could be contacted for parks planning, transportation and precedents of similar situations. The Statewide Comprehensive Outdoor Recreation Plan (SCORP) is prepared periodically by New York State Parks, Recreation and Historic Preservation (OPRHP) to provide statewide policy direction and to fulfill the agency's recreation and preservation mandate. "SPARK (sports, play and active recreation for kids) is a research-based organization dedicated to creating, implementing, and evaluating programs that promote lifelong wellness. SPARK strives to improve the health of children and adolescents by disseminating evidence-based physical activity and nutritional programs that provide curriculum, staff development, follow-up support, and equipment to teachers of Pre-K through 12th grade students. SPARK strives to achieve outstanding customer satisfaction through timely delivery and exceptional service." These are a couple of the programs discussed that could benefit Willard in terms of implementing programs that could promote healthy living and getting involved with the environment.

Terry Whaley: Ozark Greenways Executive Director

The meeting with Terry Whaley focused mainly on the individual aspects of what makes a successful park and recreation system within a town. Budgeting, operating costs, and capital costs are at the bottom line of what a park board should consider. To allow a park board to stretch what they have landbanking is a successful method of accomplishing a long term goal. Purchasing land at a low cost as the city can acquire it and holding on to it is an effective way of purchasing large amounts of land at lower costs. Terry also discussed the simplicity of starting small with share the road signs for cycling routes on paved roads. This is for safety and also the future of possible safe route expansion within the city. Once the Willard Park Board adopts an identity that satisfies the values of the community, emphasis can be facilitated through planning and development, community events, and recreational amenities.

Annie Busch: Springfield-Greene County Library Executive Director

While talking with Annie Busch, she stated that for the future growth of Willard, a building of 12,000 to 15,000 square feet would be ideal. Annie Busch was enthusiastic toward the idea of placing the library at the proposed city center and thought that the Willard branch could have a theme based on nature and the environment. The building itself could be LEED certified to push the idea of sustainable building methods and could be an example for developers. Ideas were discussed for the support of the Frisco Highline Trail users including public facilities, a café, meeting rooms, bike storage and rental, and resting areas for people to relax and read. The library is no longer a quiet place to read, research, or study but a place for residents to come together and interact. Within this digital age, the world is becoming smaller and more isolated. Libraries can facilitate a learning atmosphere as well as a place of social interaction.

Rob Baird: Conco Quarry President | CEO

When current quarry operations started the trend of safety and environmental concerns began to take hold in the country and Conco has always worked with this in mind. They have won every award a quarry can win for safety and responsible management. Although the quarry administration has had several issues with the surrounding residents and city, they are very adamant about resolving those issues and trying to create an environment that will allow the quarry to continue operation smoothly and make the residents happy.

The quarry would like to have more involvement in the Willard community and with the schools. What they would like is partnerships to responsibly develop the buffer zones around the quarry so that future housing development do not have to deal with the negative aspects of quarry production. The Willard high school has a Vocational Agriculture program which the quarry would like to be involved with, as well as possibilities for re-establishing the 160 Parkway project.

WILLARD GATEWAY OVERVIEW

Willard is in close proximity to many natural amenities such as the Bois D'Arc Wildlife Area, the Little Sac Woods Wildlife Area, Ritter Spring Park, Rocky Barrens Conservation Area, Fantastic Caverns, and an abundance of unique natural landscape. In addition, Willard is also located near many historical sites, such as the Nathan Boone Homestead, as well as being near the TransAmerica Trail which sees a large amount of cyclists each year. Due to Willard's prime location between Springfield and these amenities, Willard becomes a hub that citizens of Springfield, as well as travelers in the area, must cross through in order to access these amenities. Willard has an opportunity to become The Gateway to the Great Outdoors. By doing so, Willard will begin to formulate an identity autonomous of Springfield to which its citizens can relate and take pride in. Willard will be able to showcase itself as an environmentally responsible community with a special appreciation of the natural world. This strategy will also have tremendous economic stimulus potential as many local businesses will be able to cater to the patrons passing through the Gateway, both on Highway 160 and on the Frisco Highline Trail.

Willard also has an opportunity to redefine the great outdoors by allowing the little things in nature to be realized and appreciated for their inherent qualities. The great outdoors will be everything from the large conservation areas and wildlife parks, to the smallest streams and vegetation native to the area. The region can become a place to explore, unwind, and escape the frenzied lifestyle of the city.

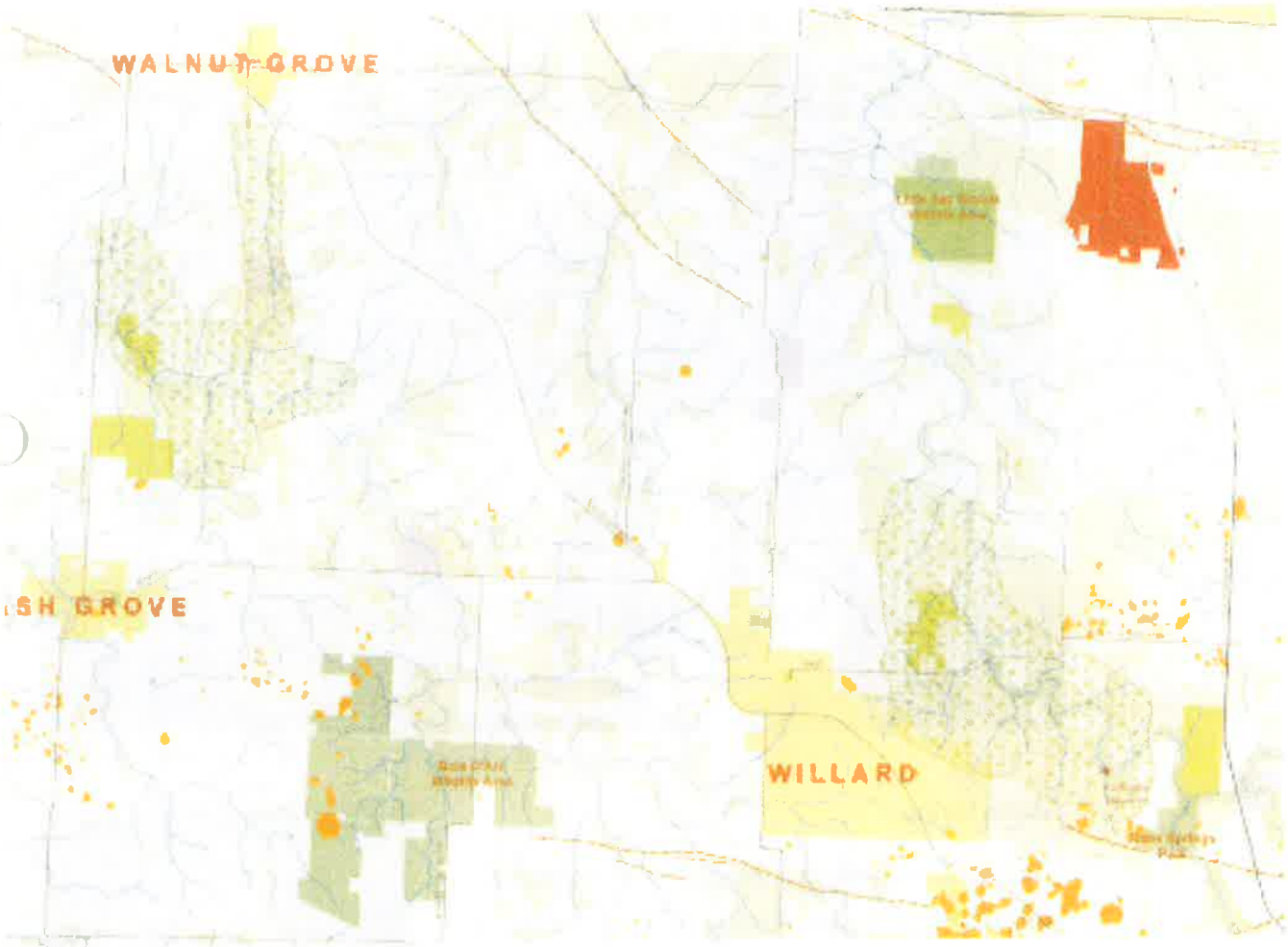


Fig. xxviii Willard Regional Map of Amenities

FRISCO HIGHLINE TRAIL

Underutilization

The Frisco Highline Trail can be considered the spine of the Willard community. The underutilization of the trail is the main concern for the realization of the Triple Bottom Line. The utilization of the trail would facilitate environmental consciousness, economical stimulation and community interaction.

Fig. 1.1 Utilization of trails

Active Living

The first step to better utilizing the Frisco Highline Trail is to promote the principals of active living and provide safe routes. Willard as a community needs to understand the nature of physical health and how it pertains to everyday activities. The nation as a whole is in need of becoming more active, and Willard has an opportunity in the heart of the community to facilitate this need. Families should become more active as a unit which will promote family values, social interaction, and physical health.

Fig. 1.2 Cyclists on a nature trail

Fig. 1.3 Potential view of the Frisco Highline Trail

Fig. 1.4 Potential view of the Frisco Highline Trail

Maintenance

The city does all the maintenance of the trail presently, to economically facilitate the advancement of the trail and its future tributaries, a community organization should be created that volunteers can give time for basic maintenance. This organization can start to establish a community pride and identity that starts with the basic ownership of the trail and its resources. Parts of the trail could be set up for an adopt-a-trail program.

Kiosks

Informational kiosks should be integrated into the nodes along the trail for the general education of the community. Major kiosks could be set up for the announcement of the trail head and other significant points along the trail. These act as smaller gateways that inform and announce the surrounding natural resources. Historically significant plaques and signs should be located at nodes and possible tributary trails.

Fig. 1.5 Hammock Trail Kiosk University of Florida

Fig. 1.6 Cumberland trailhead Nashville, TN

Fig. 1.7 Example of a trailhead sign

Signage

The department of transportation should be contacted for the completion of signs along the trail and other "share the road" paths. Any path, sidewalk, trail, or networking possibility that needs signage for the information and education of the public should be considered.

Share the Road

Signs need to be established for the safe passage of bicycle traffic within city limits and extending out into the immediate rural areas. The future establishment of separate bike paths are high on the list of active living, livable community, and smart growth priorities.

Informational Signs

Establishing signs along the trail and the surrounding community will inform the residents and visitors as to the significant natural features of the area, the historical significance of certain individuals and places, and the location of prominent individuals within the community and their accomplishments. These signs add to the communities pride and helps to establish an identity to the area.

Frisco Highline Trail Gateway

As a prominent piece of the historic downtown area, the trailhead is the perfect location to place signage that emphasizes the significance of the Frisco Highline Trail and the surrounding features as a gateway. Informing the public about locations of natural resources is the best way to begin to emphasize the identity of Willard and educate its residents of the pride that is evident in the area.

Fig. 1.8 Signs along a nature trail provide insight to visitors

Fig. 1.9 Nara Trail signs Houghton, MI

Trail Events

The Willard Park Board should create community events that utilize the Frisco Highline trail. Free events such as nature hikes and walks, community biking days or evenings, and educational field trips through the schools can be established during the year

Fig. 1.10 Example of an advertisement for trail events

Fig. 1.11 Family reunion being held at a Trailhead

with seasonal changes in program. The trail can be used for walking, biking, hiking, rollerblading, horse riding, jogging, and many other activities. Fundraising opportunities can also be available for the Park Board to take advantage of as economic possibilities. Sponsors can be provided and events can start to become annual. As a part of festivals and other events, competitions should be created that use the Frisco Highline Trail.

Fig. 1.12 Potential Willard park scenario

Networking

The Frisco Highline Trail is the beginning of a long community | regional trail system. There are so many activities that can already be done on the trail; weekly, monthly, and annual events should be established. The trail system should expand into the community and beyond. The connectivity of existing residential and commercial areas with schools, the library, and the trail needs to be emphasized and reworked.

Fig. 1.13 Natural buffers and benches facilitate pedestrians

Pedestrian

The Frisco Highline Trail already is set up perfectly for walking, jogging, and hiking. The connectivity to the rest of the community is fairly poor and should be established more prominently. Sidewalk networking should be a first priority and from there a network of paths to and from the trail can be established for the safe passage of children and adults. With the networking comes the addition of safe crossings and proper signage to facilitate Willard as a more livable city.

Fig. 1.14 Orange Township, OH network concept

Bicycle

The bicycle is by far the best alternative transportation that can be utilized within the city limits and beyond. Willard should focus attention on the positive effects that bicycling has on the physical health of the individual, environmental health of the city, and physiological health of the community. Across the nation laws are being adopted that allow incentives through businesses to employees that are biking to work. Road laws are also being established with changes like: treating stop signs as yield signs, treating stop lights as stop signs, and allowing bikers the right of way on trails.

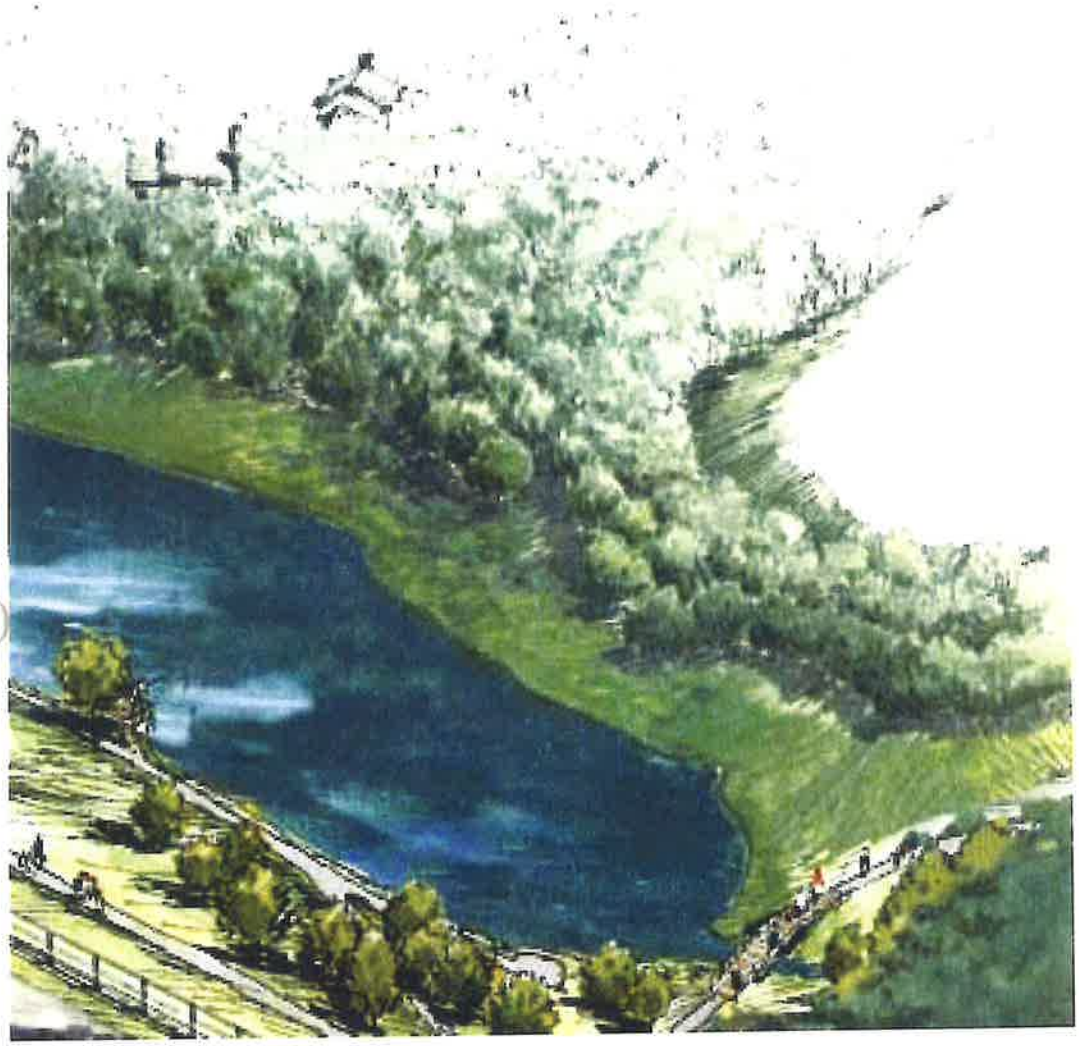


Fig. 1.15 Skull Creek Trail Fayatteville, AK

Fig. 1.16 Pedestrian network West FL

Automobile

The automobile will remain one component of an expanding local | regional multi-modal transportation system. The combined network of roads, sidewalks, bike paths, and trails are essential to the smart growth or livability of any community. With these networks in place, Willard can lower the reliance on the automobile for some activities. As the automobile becomes less essential the environment will become healthier, as well as the community. The economy can be stimulated locally with the money saved from not buying as much fuel.

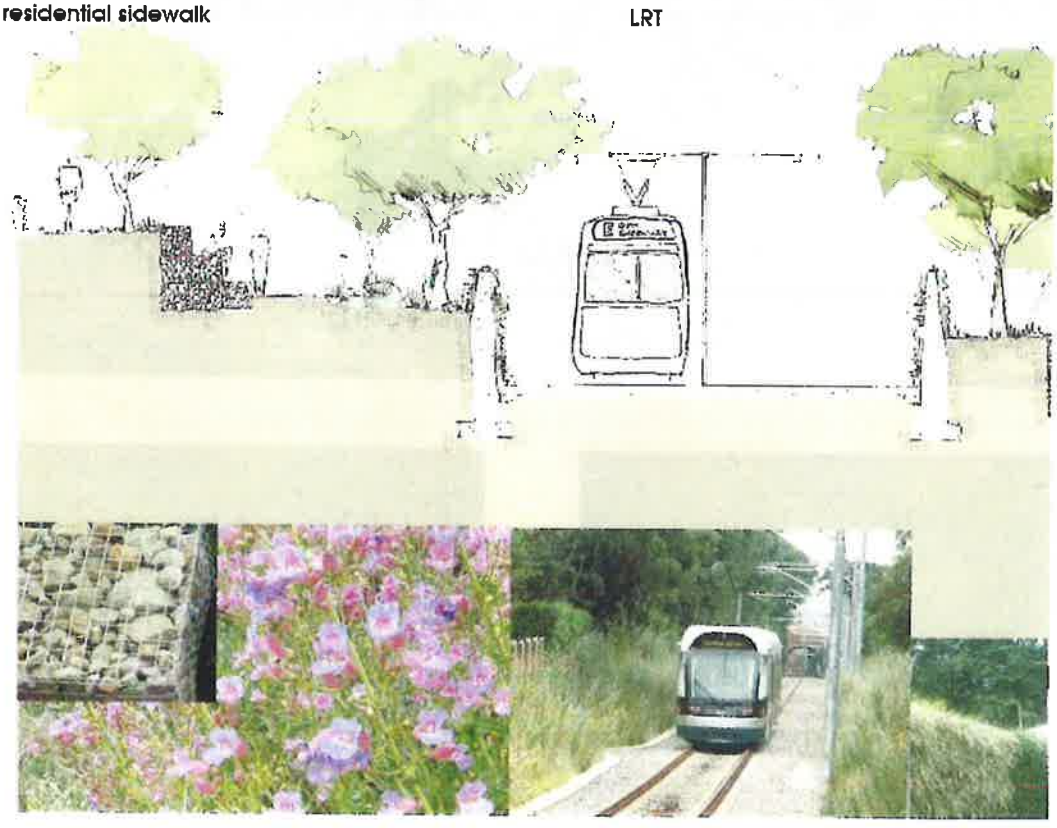
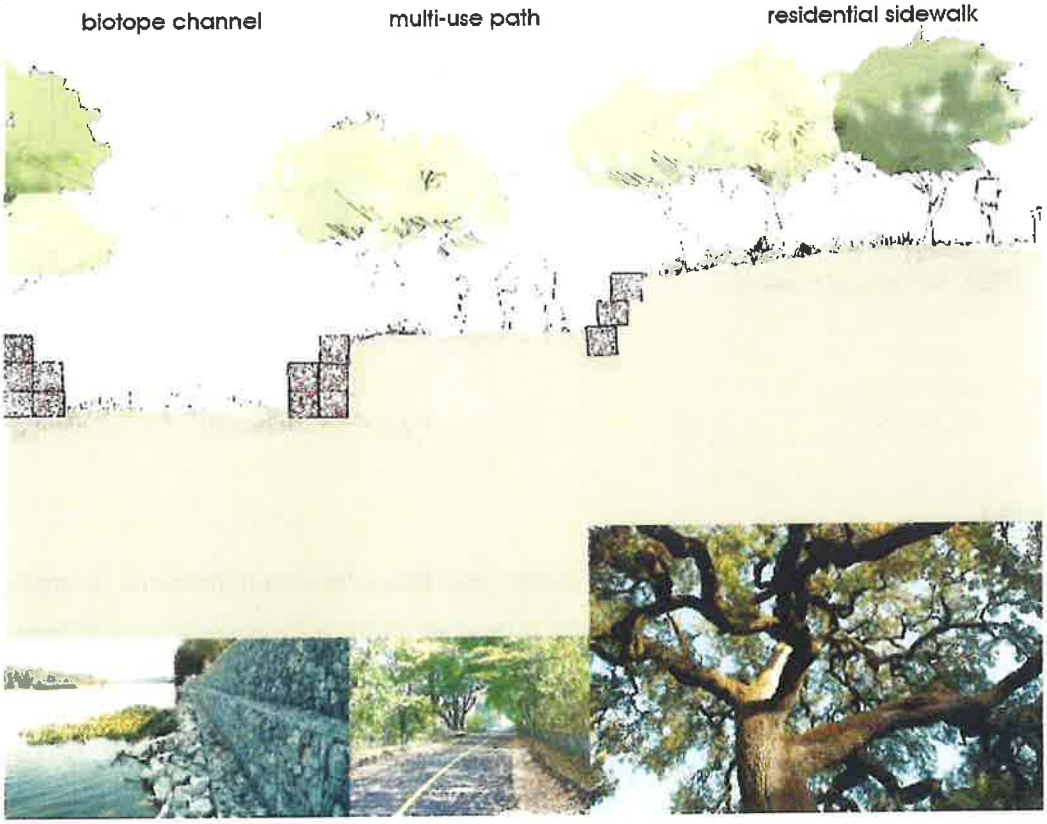


Fig. 1.17 Greenway section for Rail Transit

Fig. 1.18 Natural buffer in Pheonix, AZ



CITY CENTER

Overview

The zoning and placement of built features within a city center or downtown area requires careful consideration of users and utilization. Creating a flexible center that incorporates both open green space and businesses allows for year round activity and economic stimulation.

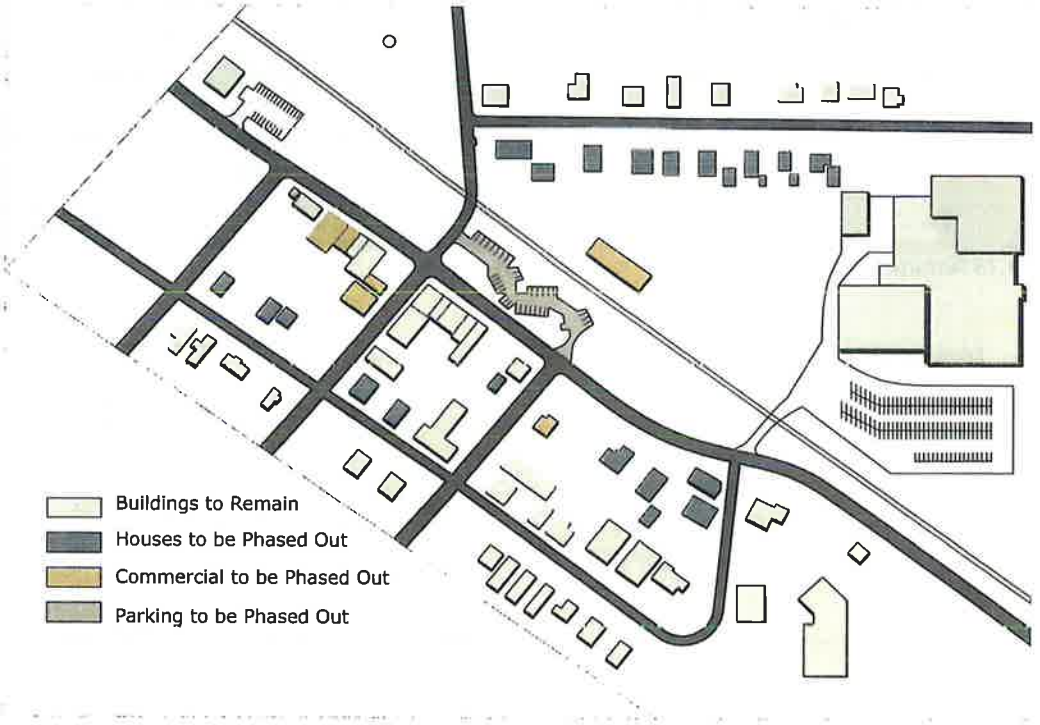


Fig. 2.1 Existing layout of the city center

Zoning

Grouping commercial, residential, and public use zones together promotes a more cohesive city center. A mixed use overlay district coupled with economic incentives should be established in the historic downtown area that encourages creative development and renewal.

Infill Sites

Some lots of the existing historic district are either empty or do not support the character of a prosperous economic center. Infill sites are usually less expensive to obtain and renovate and provide an already established connection to utilities. Creating new or renovated structures that fit the character of the "historic district" would help to establish a more economically prosperous and socially and symbolically significant city center.

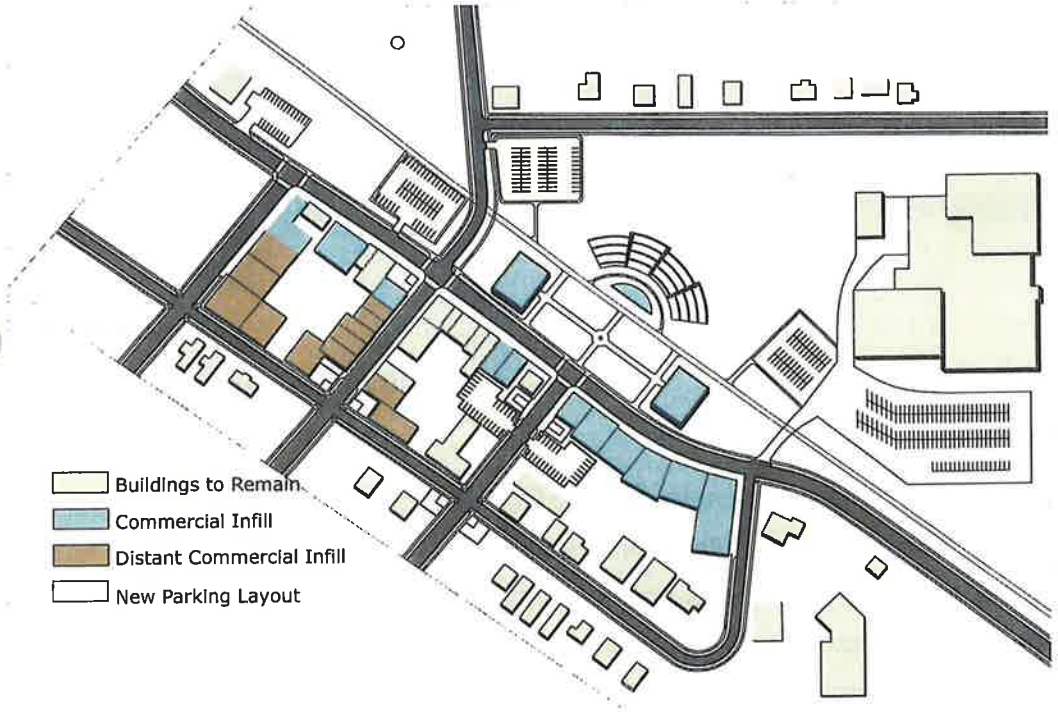


Fig. 2.2 Potential city center layout

Open Space

Open space located within the city center allows for a more flexible mixed use area. The amount of green space should accommodate large scale events and festivals yet have areas of a quiet and restful nature. Splitting the available green space into two areas by the amphitheater creates a large open space for mixed use and a more formal and intimate space for relaxing, while creating several inviting landscaped views. This green space would serve as both the "City Square" and trailhead for the Frisco Highline Trail .

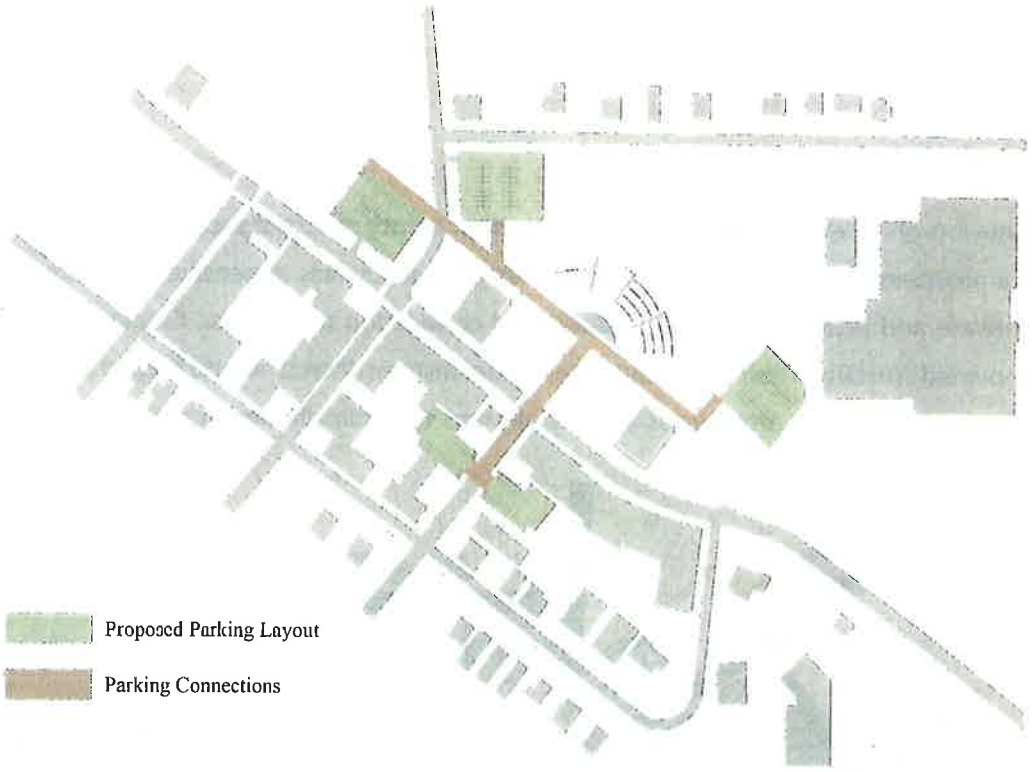


Fig. 2.3 Potential Willard parking system for the city

Parking Overview

Parking is an essential element to a successful economic and social area. Residents should be able to reach their destination with as little trouble as possible. There needs to be an adequate amount of parking to service all of the businesses and public centers as applicable. By spreading out individual parking areas, the environmental impact is lessened along with the use of alternative solutions to the traditional parking surface of concrete or asphalt. Although parking is essential, the city center needs to interconnect with the multimodal network by upgrading sidewalks, bike paths and trails.

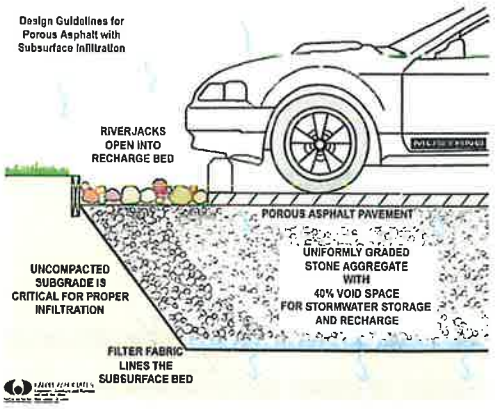


Fig. 2.4 Pervious asphalt section

Parking Connections

The layout of the individual parking areas provides residents with the ability to park close to their destination. By spreading out the individual lots on both sides of Jackson Street and on either side of the public use area residents area able to quickly and easily get to their destination. From there residents can then walk to any other location within the city center.

Fig. 2.5 Pervious walking trail Glenwood, IA

Sustainable Parking Surfaces

An important consideration for parking areas is its permeability and the manner in which it deals with water runoff. Water is not able to drain through the paving material whether it is asphalt or concrete so water is drains across the surface and then to a storm water collection system which then discharges into the nearest stream. This system of drainage can overflow a storm water system and cause flooding both in town and in

Fig 2.6 Green parking solution

the rivers resulting in damages to buildings and erosion of the river system. This can be lessened by surfacing parking areas with permeable materials such as porous concrete and asphalt or reinforcing mats that allow grass to grow and not be hurt by the weight of a vehicle. By using these surfaces water is easily able to drain through allowing the water to discharge directly into the ground. Using permeable surfaces on parking areas can greatly reduce storm runoff and prevent flooding. Other methods of controling water runoff is through the use of bioswales, small depressions filled with vegetation to capture water runoff or retention basins.

Fig. 2.7 Brick and gravel stabalizer system

Fig. 2.8 Open park space

Fig. 2.9 Open park space

Fig. 2.10 Opportunities for festivals

Fig. 2.11 Oppotunities for festivals

Open Space Overview

Creating a large area of open space will allow for a mixed use center that can accommodate festivals, events, and neighborhood activities that can help to foster a sense of community. This becomes the heart of the community within the symbolic city center. A public commons such as this can facilitate Willard's values of environmental consciousness, promoting community interaction, and providing economic stimulation.

Vegetation

The placement of vegetation within the park area should be based on creating large open areas for events with dense areas of vegetation around the perimeters to create more private and shaded areas. Vegetation size should vary from large trees such as oaks and maples to small plants such as euonymus and yews that can be used as hedging.

Maintenance

The most important aspect of creating a large open space with large amounts of vegetation is maintenance. Because of the large size of the area either a grounds keeping crew must be hired or volunteers must be found who will routinely provide

maintenance to ensure that the health and beauty of the landscaping is preserved. If the vegetation's health declines the attractiveness of the entire area will decline and residents will not be inclined to utilize the space.

Hardscape

Throughout the open space there should be adequate walkways. The choice of materials should be based on financing. There is a range of paving materials that can be used. Concrete is the least expensive alternative, other materials include brick, concrete pavers, asphalt and as discussed in sustainable surfaces pervious materials. The same pervious materials used in parking areas could be used for walkways reducing the amount of water runoff.

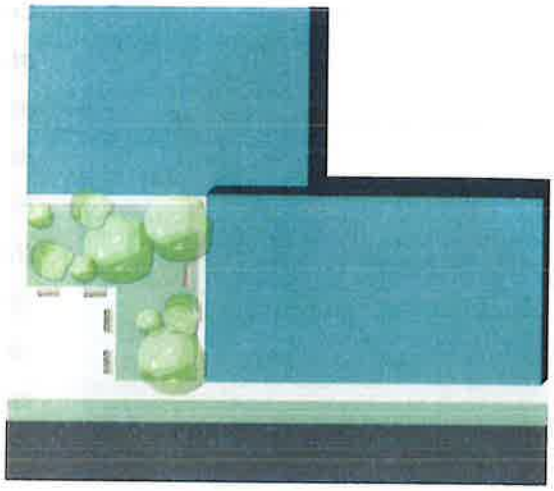


Fig. 2.12 Streetside park plan

Fig. 2.13 Streetside park Youngstown, OH

Street Side Parks Overview

Street side parks provide a resting place within a business district where people can stop and sit in a quiet and relaxing environment while at the same time be surrounded by businesses and people.

Fig. 2.14Streetside park Mansfield, NJ

Vegetation

The small space of the park limits the amount and size of plantings that can be incorporated. Only a couple of larger trees should be placed in the park while medium size trees would be better suited for the space. Smaller plantings can be used to soften the space along the ground and around seating areas.

Seating

Seating within the park should incorporate several benches placed in different areas to allow individuals and small groups a place to sit and relax.

Fig. 2.15 Brown-Forman Amphitheater Louisville, KY

Public Built Spaces Overview

The public built spaces within the proposed city center incorporates an amphitheater, library and city hall. These public spaces can be located on the north side of Jackson Street and provide an activity anchor that could draw people to the city center at all times of year. These proposals provide public facilities for users of the Frisco Highline Trail and provide for community interaction and promote identity.

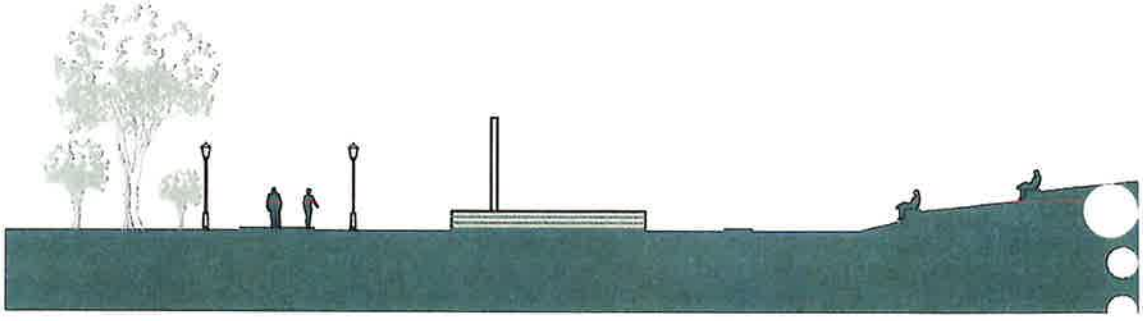


Fig. 2.16 Amphitheater section

Fig. 2.17 Brown-Forman Amphitheater

Fig 2.18 Sledding at Hospital Hill Beloit, WI

Amphitheater

The amphitheater could be a green space with rows of concrete seating and a concrete stage, minimally incorporated for the promotion of the environment. The design would require minimum maintenance and could be used for a wide variety of activities from movie in the park to outdoor theater performances. On the back side of the seating the ground could be sloped to provide an elevated setting where people can relax in the summer or use it as a sledding hill in the winter.

Library

Bringing the Willard library to the city center and linking it to the nearby schools and businesses would greatly enhance the public activity within the space. Modern public libraries do not just provide a place to read books; they provide group meeting rooms, technology centers, reading rooms and cafés. The library could become the main activity center that draws people to the city center.

City Hall

Moving City Hall back to the city center provides a focal point for the civic importance of the community. Having the city hall in the middle of a high use recreation and business center could provide the opportunity for more people to attend public meetings and become more involved in the community. Creating a civic center tied to the businesses and open greenspace creates a richer and more useful city center.

Open Green Space

In addition to the public built structures in the city center there is also the built landscape. Providing an interesting and appealing park for public use is essential to the success of the public buildings.

Fig 2.19 Current city center streetscape

Streetscape Overview

The streetscape encompasses the area between the street and the building fronts. The development of a streetscape creates a functional zone that people can use to socialize, rest and dine and still be within the business district. A streetscape uses plantings, seating and materials to create a pedestrian zone that is an interesting feature for any business area.

Fig. 2.20 Streetscape planters

Vegetation

Vegetation should be made up of medium size trees placed at regular intervals either in planters or in street level soil that would provide shade in the summer making the space more pleasant, and smaller plantings and hanging plants that would soften the building facades at eye level.

Fig. 2.21 Streetscape project Chassell, MI

Pedestrian Zone

The pedestrian zone encompasses the clear walkable space between the trees planted near the street and the building fronts. Creating a wide walkway that can accommodate many people allows a less restrictive and more attractive space for people to move about the businesses.

Fig. 2.22 Pedestrian zone Roanoke, VA

Fig. 2.23 Concrete sidewalk Tampa Bay, FL

Fig. 2.24 Brick sidewalk example

Signage

Sign ordinances should be established to promote size and aesthetic compatibility of local business advertising. Providing attractive, yet scale appropriate, signage helps businesses to improve the streetscape while improving their own image.

Infill

Infill sites can be usable possibilities for street-side parks or open space. These lots can also provide for future development that may provide unique opportunities for economic stimulation. The maintenance of these lots is important for the overall aesthetic of the city center.

Lighting

Lighting fixtures can greatly improve the look and safety within a streetscape. Placement of lighting is important for the functionality of the streetscape. Tall post lights can be placed near the street to provide lighting for cars and pedestrians while smaller fixtures can be placed on the buildings at lower levels to create a more directed and intimate light for pedestrians and businesses.

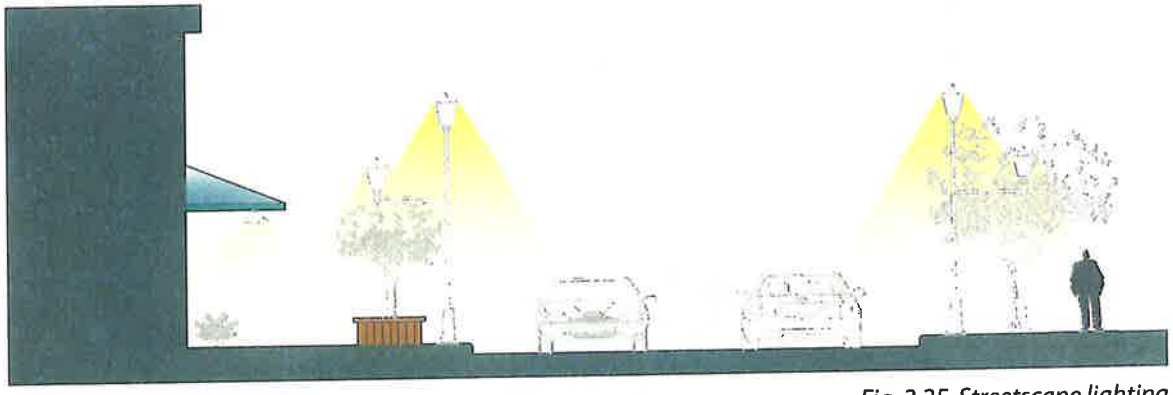


Fig. 2.25 Streetscape lighting

Façade Study

The façade study looks at the possibilities of infill sites and renovated buildings between South and Jefferson Streets along Jackson Street.

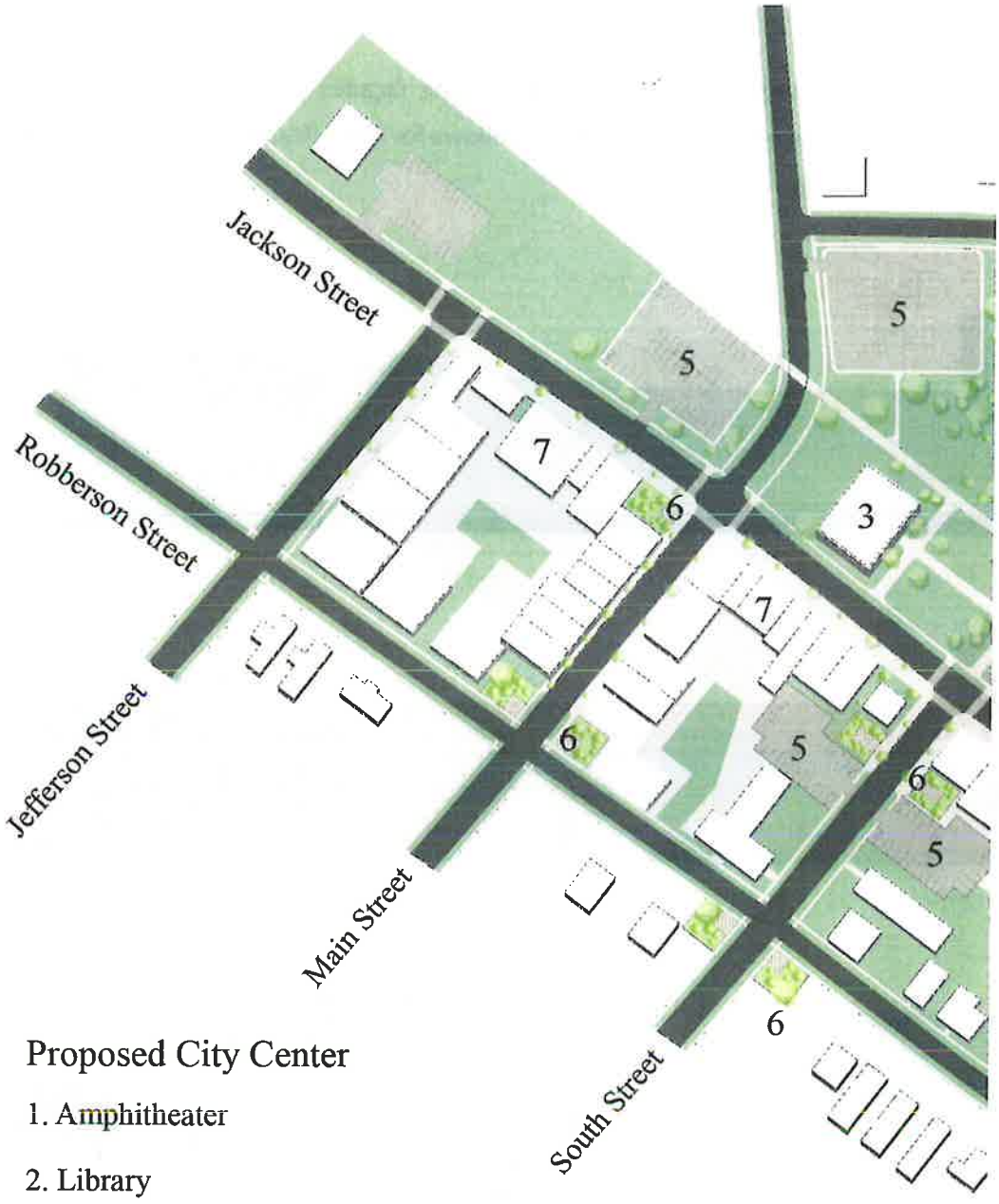
Fig. 2.26 Existing facade 1

Fig. 2.27 Proposed facade 1

Fig. 2.28 Existing facade 2

Fig. 2.29 Proposed facade 2

The use of common materials throughout the façades can facilitate a consistent architectural theme. This common theme allows for more flexibility in material, design and functionality.



Proposed City Center

1. Amphitheater
2. Library
3. City Hall
4. Open Space
5. New Parking
6. Street Side Park
7. New Development
8. Existing Middle School

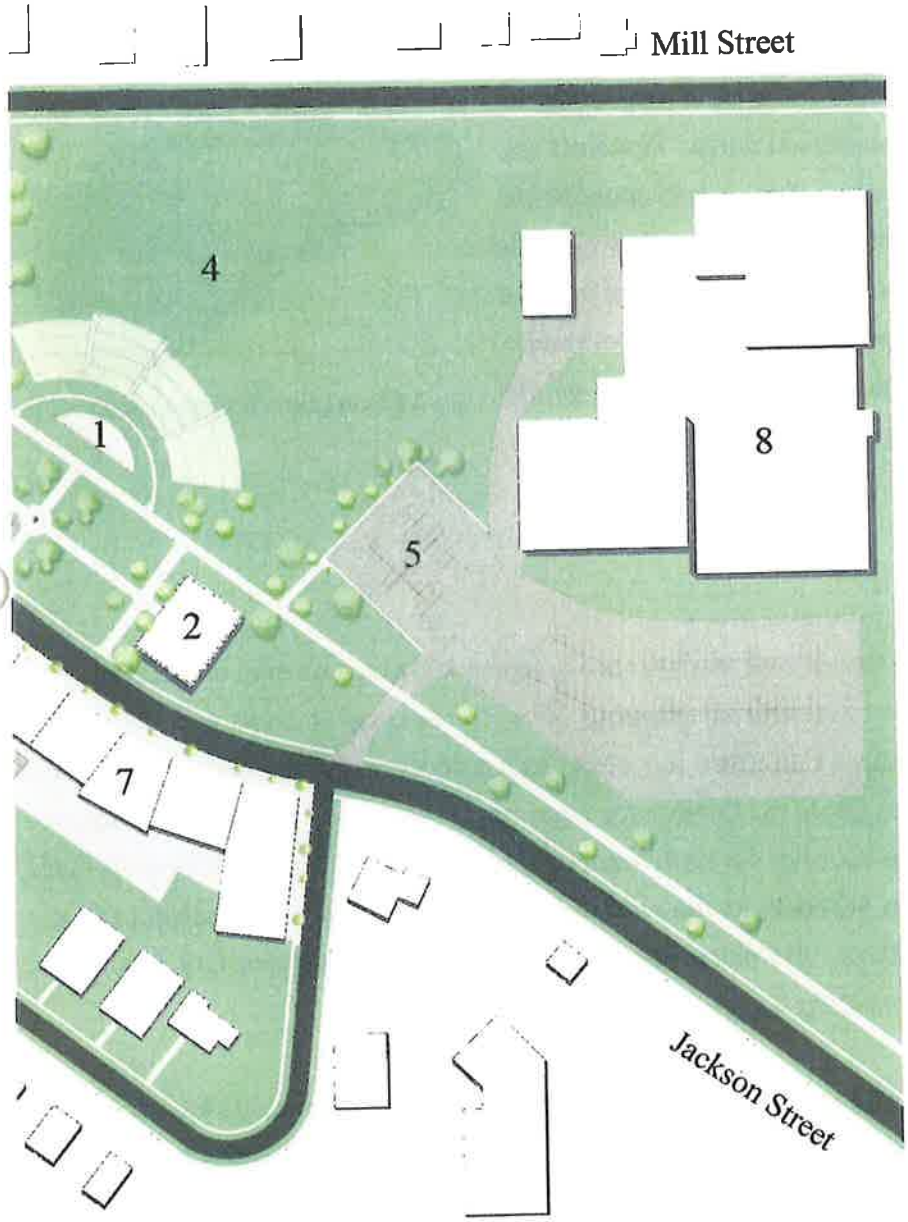


Fig. 2.30 Proposed City Center Plan

PARKS, RECREATION AND OPEN SPACES

Additional Parks

The public has indicated that they would like more parks. Voters have repeatedly shown their willingness to raise their own taxes to pay for new or improved parks. Residents see that parks provide a diverse and quantifiable range of benefits that improve their quality of life. Willard can vastly improve the present conditions of the Park and Recreation system by effectively planning for the future of the community as a cohesive unit.

Fig. 3.1 Twin Lakes Park Westmoreland, PA

In Missouri and Illinois, civic leaders have used the 2004 bicentennial of the Lewis and Clark Expedition to launch an ambitious effort to revitalize St. Louis and the nearby region, in a program called St. Louis 2004. As a cornerstone of the plan, Missouri and Illinois worked to create the Confluence Greenway. The Greenway covers a 200-square-mile area in five counties on both sides of the Mississippi River, stretching 40 miles from downtown St. Louis to the confluence of the Missouri and Mississippi Rivers near Grafton, Illinois. *(For more information on St. Louis's revitalization visit http://www.lewisandclarkexhibit.org/4_0_0/).*

At a regional level, a great park system can be identified as a community focal point and a symbol of its vitality and character. The city's overall health and well-being can also be affected by a great park system. Willard can achieve this quality of life by the efficient planning, development and connectivity of future parks.

More Parks

Willard needs to provide residents with immediate accessibility to a variety of amenities in neighborhood parks. By enhancing and enforcing laws already in place, Willard could assure that green space is set aside in neighborhoods that would provide space for such neighborhood parks. These neighborhood parks can facilitate passive and active recreational possibilities.

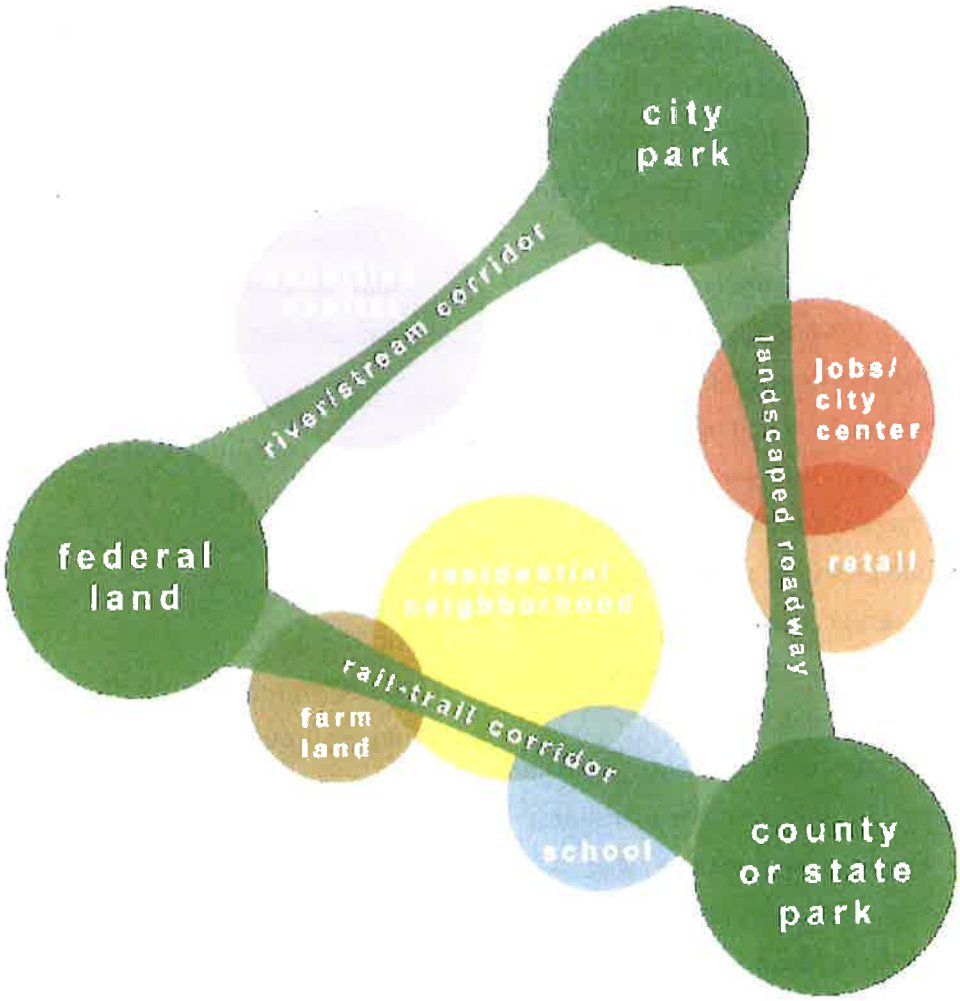


Fig. 3.2 Park Diagram Durham, NC

Fig. 3.3 Benches in New Orleans, LA park

Fig. 3.4 Gilbert Park Yorkville, IL

Pocket, neighborhood and community parks should to be developed though out Willard and the surrounding area. The following guidelines can be used when developing future parks:

- Include spaces for social and cultural exchange where people can sit, talk or walk on a daily basis.
- Create memorable public spaces with flowering gardens, well designed spaces for entertainment and people-watching.
- Protect unique open spaces, archeological and historic sites.
- Create inviting and fulfilling spaces for senior citizens, persons with disabilities, and teenagers with their unique needs.
- Include walk-able and jog-able places in and around new facilities.
- Develop partnerships that will bring evolving adventure sport facilities to Willard.
- Develop facilities and programming for teens, particularly in areas of high youth populations and schools.
- Development of future facilities should be communicated intensively, and in a timely manner with the residents in the immediate service area through a City-staffed interdepartmental site planning team.
- Develop an open space system that is environmentally sensitive and self-sustaining.

These are a few guidelines to keep in mind for the sizes of land to consider for specific populations:

- Neighborhood parks should equal around 1.75 acres per 1000 residents.
- Community parks should equal around 1.5 acres per 1000 residents.
- Regional parks should equal around 3 acres per 1000 residents.
- The amount of open space in the community should equal around 10 acres per 1000 residents.

Pocket Park

Pocket parks are the smallest park classification and their purpose is to serve the recreational needs of the immediate surrounding neighborhood. They are generally maintained by the homeowners association and are considered private parks.

Typical amenities located in a pocket park include: Open irrigated turf play areas, lighted basketball court, volleyball court, picnic pavilions, barbeque grill and water fountain area, children's play area (with safety surface), on-street parking, paths and trails (connecting to neighborhoods and open space), trail heads (if adjacent to trail system).

Fig. 3.5 Pocket Park concept in Arizona

Size and Location

Parks less than 5 acres are technically considered a pocket park. Walking distance from residential areas to surrounding parks should be minimal. These parks should be accessible via trails, sidewalks and low-volume residential streets.

Fig. 3.6 Landscape concept in Arizona

Site Criteria

Ideally, pocket parks are designed to serve a population between 1,000 and 1,500 and have a service area radius of ¼ mile. The park site should exhibit the physical characteristics appropriate for active play and passive recreational uses. Since one of the primary reasons people go to a park is to experience a pleasant outdoor environment, the site should exhibit some innate aesthetic quality as well. The desirable amount of topographical change and vegetation is dependent upon intended uses. Usually, these sites are fairly level. Vegetation (natural or planted) should be used to enhance the aesthetic qualities rather than impede areas of play and recreation. Ideally, pocket parks should have adjacency to other park system components, most notably the trail system.

Neighborhood Park

Neighborhood parks serve as the basic unit of a park system and act as the recreational and social focus of neighborhoods.

Typical amenities located in a neighborhood park include: Multi-use fields and open turf play areas, baseball and softball fields with backstops, lighted basketball court, soccer field, picnic pavilions, barbeque grill and water fountain area, children's play area (with safety surface), restroom facility, on-street parking, and paths and trails that connect to neighborhoods and open space.

Fig.3.7 Movie in the Park

Size and Location

The minimum area usually considered for neighborhood parks is five acres. Accessibility in terms of walking distance is critical in locating a neighborhood park. Typically a central location within a specific neighborhood is prefered. These parks should be easily accessed throughout its service area via trails, sidewalks and low-volume residential streets. Additionally, neighborhood parks may be located in conjunction with a proposed or existing school site.

Site Criteria

Typically, neighborhood parks are designed to service an approximate population of 5,000 with a recommended service area of ½ mile; thus keeping it within walking distance of the surrounding residences. In neighborhoods of lower densities or hilly areas in Willard, special accommodations may be recognized to adjust the service radius while still maintaining the serviceable population.

As a neighborhood destination, off-street paths and trails should be provided to connect the park to the neighborhood and city trail system. The park site should exhibit the physical characteristics appropriate for active play and passive recreational uses. Since one of the primary reasons people go to a park is to experience a pleasant outdoor environment, the site should exhibit some innate aesthetic qualities as well. "Left-over" parcels of land that are undesirable for development are generally undesirable for parks and should be avoided. Considering the importance of location and function, neighborhood parks should be selected before a subdivision is platted and acquired as part of the development process.

Fig. 3.8 Gardening as Recreation

Fig. 3.9 Community Garden in Tacoma, WA

Fig. 3.10 Neighborhood Park Concept

Fig. 3.11 Community event in Darien, IL

Fig. 3.12 Overall Park Concept Dallas, TX

Fig. 3.13 Recreation in Channahon, IL

Fig. 3.14 Park in Roseville, CA

Fig. 3.15 Camp Tanako Hot Springs, AR

Neighborhood parks can be public or private. The City of Willard should work with developers to determine which parks will become public and which can remain private. Developers shall be expected to develop and maintain any neighborhood parks to city standards and specifications.

Neighborhood parks give opportunities to children to develop physical, mentally, and socially. It is evident in observing Willard that Willard is very proud of their school system. Developing neighborhood parks is not just an investment in the community, it is also an investment in the youth that make up Willard's great school system.

More than just the youth benefit from neighborhood parks. Green spaces build community as a whole. Residents of neighborhoods with green belts or neighborhood parks are more likely to enjoy stronger social ties than those that live without. *(For more information on park types and requirements see Appendix: Parks, Recreation and Open Spaces: Parks).*

Fig. 3.16 Pavilion concept in Missoula, MT

Case study

A 2003 study conducted by the University of Missouri-St. Louis for the community development organization Gateway Greening found that St. Louis neighborhoods with community gardens were more stable than other neighborhoods. In a city that lost nearly 50,000 residents between 1990 and 2000, neighborhoods with gardens did relatively better, losing 6 percent of their population over the decade compared with 13 percent for the city as a whole. The study also found that between 1990 and 2000, monthly rents for apartments immediately around the gardens rose a median of $91, compared with no change in the larger U.S. Census areas surrounding the gardens and a $4 drop for St. Louis as a whole.

Fig. 3.17 Volunteering in Southern CA

Neighborhood parks increase residents' sense of community, ownership and stewardship, provide a focus for neighborhood activities, expose youth to nature, connect residents, reduce crime by cleaning up vacant lots, and build community leaders. *(For more information on gateway greening see http://actrees.org/files/Research/.*

Fig. 3.18 Park concept in Missoula, MT

Community Park

Community parks are larger in size and serve a broader purpose than neighborhood parks. Their focus is on meeting the recreation needs of several neighborhoods or larger sections of the community, as well as preserving unique landscapes and open spaces. These parks accommodate group activities and offer recreational opportunities that are not feasible at the neighborhood level.

Typical amenities located in a community park include: multi-use fields, open turf play areas, athletic fields that can include three to six youth baseball or softball fields (lighted and fenced with covered dugouts and spectator seating) as well as three to six youth sized soccer and football fields. Community parks can also include two to four volleyball courts, four to eight basketball courts, two to four tennis courts, picnic areas, children's play areas, a skateboard or BMX park, off-leash dog park, community center or recreation center (w/ gymnasium, handball or racquetball courts, and fitness area), restroom and concession facilities, off-street parking, jogging and walking trail around the perimeter of the park, and paths or trails that connect to the neighborhood trail system.

Fig. 3.19 Riverfront Park in Memphis, TN

Size and Location

Community parks typically require a 25 acre minimum site. Community parks should be accessible to many neighborhoods and their service area to provide parking, safe bike and pedestrian access and intensive recreation opportunities. The sites should be easily accessible from major arterial roads in the community and buffered from residential areas. These parks usually include all of the uses contained in neighborhood parks but have additional acreage for athletic fields, courts, and special use facilities such as urban lakes and fishing ponds, skate parks, large group picnic facilities, recreation centers, etc. Community parks typically serve a larger area and population. A central trail system should link the community park to other community facilities.

Fig. 3.20 Passive & Active Recreation

Site Criteria

Population and recreation demand play a significant role in site selection, with emphasis on sites that preserve unique landscapes within the community and provide recreational opportunities not otherwise available. Ease of access from throughout the service area, geographically centered, and relationship to the park and trail system are also key concerns in site selection.

Fig. 3.21 The Active Oval in Atlanta, GA

The site should exhibit physical characteristics appropriate for both active and passive recreation use. It should have suitable soils, positive drainage, varying topography and a variety of vegetation. Depending upon their individual character and use, lakes, ponds and rivers may be associated with community parks. *(For additional information on community parks see Appendix: Parks, Recreation and Open Space: Park Specifications).*

Active Recreation

The overall success of a park system depends on the diversity of recreational amenities that are provided. This overall concept can allow for all ages to participate in some type of activity. Active recreation is more popular within the middle range of ages including playgrounds for elementary aged children, courts and fields for organized sports to facilitate the widest range of ages, and trails for the older generations to actively participate.

Some types of activities that make up active recreation include:

- Baseball or Softball
- Soccer
- Frisbee or Disc Golf
- Football or Flag Football
- Running or Jogging
- Walking
- Basketball
- Tennis or Pickleball
- Skateboarding and Rollerblading
- Raquetball or Handball
- Bowling or Bocce ball
- Playing on the Playground or Tag
- Capture the Flag
- Hiking
- Walking the Dog
- Bicycling

Fig. 3.22 Coed Sports, great for entire family

Fig. 3.23 Children & active recreation

Fig. 3.24 Open Space with shade & benches

Fig. 3.25 Open Space & Active Recreation

Open-space

Open space can increase property value as well as provide opportunities for all types of active and passive activities. Open space can provide environmental sanctuary within city limits which produces more efficient watershed and pollutant control. These same spaces can also provide the community with opportunities to hold events and festivals to stimulate the local economy.

Effects on Commercial Property Values

Economically, parks benefit the individual, home owner, and the commercial realm of the community. For example, New York's Bryant Park underwent a 12-year renovation from 1980 – 1992. The park reopened in 1992, becoming the site of major fashion shows, a jazz festival, outdoor movies, and an outdoor café, and attracting thousands of visitors each day. Within two years of the reopening, leasing activity on neighboring Sixth Avenue had increased 60 percent over the previous year, with brokers referring to the park as the "deal-clincher."

Fig. 3.26 Nature Trail in Ontario, Canada

Case Study

Between 1990 and 2000, rents for commercial office space near Bryant Park increased between 115 percent and 225 percent, compared with increases of between 41 percent and 73 percent in the surrounding submarkets, according to a study conducted by Ernst & Young. The same report, which analyzed 36 neighborhood parks in all five boroughs of New York City, concluded that "commercial asking rents, residential sale prices, and assessed values for properties near a well improved park generally exceeded rents in surrounding submarkets."

Fig. 3.27 Conserved Open Space in Texas

Economic Revitalization

The green space surrounding Portland, Oregon, helped build its reputation as one of the country's most livable cities. Companies like Hewlett-Packard, Intel, and Hyundai have been drawn to the region by the forests, orchards, and creeks on the outskirts of Portland's urban area.

Quality of life is a determining factor in real estate values and economic vitality. A 1998 real estate industry report calls livability "a litmus test for determining the strength of the real estate investment market.... If people want to live in a place, companies, stores, hotels, and apartments will follow." *(For additional information on economic revitalizaition see http://www.tpl.org/content_documents/tx_H-GBenefits.pdf).*

Environmental protection

We recommend that environmentally sensitive land be preserved for natural habitats and open spaces for future generation. The creation of such open spaces in Willard should include recreational and interpretive multi-use trails and paths; trailheads with amenities, signage, and parking; as well as acquiring sufficient, useable land areas for future recreational development.

The following criteria establishes the threshold for lands that should be preserved as open space:

- Lands that have slopes above 24% are generally restricted from development. Slopes between the range of 16-24% are restricted for most developments and sustainable site planning practices should be adopted for such sites.
- 100 year flood plains should always be restricted.
- Master planned communities are to dedicated percentage of land for usable open space.
- Known cultural resources sites and power line corridors should also be restricted.

Fig. 3.28 Wildflower Preservation

Fig. 3.29 Conservation Subdivision

Fig. 3.30 Wildlife Preservation

Fig. 3.31 Agricultural Zoning

The tools for acquisition of open space lands include:

- land banking
- easements
- direct purchase of lands from private ownership or Missouri State Lands Department
- lease agreement through a recreation and Public Purposes Permit/Lease (RP&P).

The Willard Park Board should take steps to acquire lands that represent the best remaining examples of Willard's natural heritage by purchase, gift or bequest. The board can either acquire the land outright or in some instances, may acquire a perpetual conservation easement covering the property instead. A conservation easement is a legal agreement between the landowner and the board that permanently restricts the use of the property in such a way as to preclude development or other activities that would harm or impair its natural condition. Actual ownership of the property, however, remains with the landowner.

For example, the owner of a natural area may donate their property or a conservation easement covering the property to the board. Such contributions can serve as permanent memorials, and donors can be assured that the land's natural values will be permanently preserved and protected. Donations of either land or a conservation easement to Willard qualify as a charitable gift for federal income tax purposes.

Passive Recreation

Passive recreation is more popular with the older age groups, although is great for the entire family and can facilitate an educational, historical, or natural experience. Through observation and careful consideration residents can passively recreate within the natural environment and even watch others as they actively recreate. Psychology tells us that our highest rate of learning comes through basic observation and imitation. The environment around us holds an immense diversity of natural processes that can be observed at all times of day and through all seasons of the year.

Fig. 3.34 Pavilion in Perry County, AL

Fig. 3.35 Farm Fest in Albuquerque, NM

Fig. 3.33 Pavilion in Perry County, AL

Some common activities that are considered passive recreation include:

- Nature hiking through the woods
- Observing plants and animals in their natural habitats
- Walking
- Bird watching
- Identifying specific trees and flowers in the wild
- Picnics
- Family get-togethers and barbecues
- Field Trips
- Historic hikes
- Hunting for mushrooms, berries, or rocks
- Photography
- Painting, drawing, or sketching

ZONING AND LAND USE

Conventional Overview

Conventional zoning follows rigid standards for lot size, road frontage, and other requirements. This strategy tends to create a uniform, grid-like development that consumes most of the available open space. Zoning this way tends to ignore important Smart Growth planning principles and promotes suburban sprawl; this limits the amount of open space being preserved, destroys natural habitats, impedes the establishment of community parks, and increases the amount of impermeable surface and stresses the natural watershed and runoff processes.

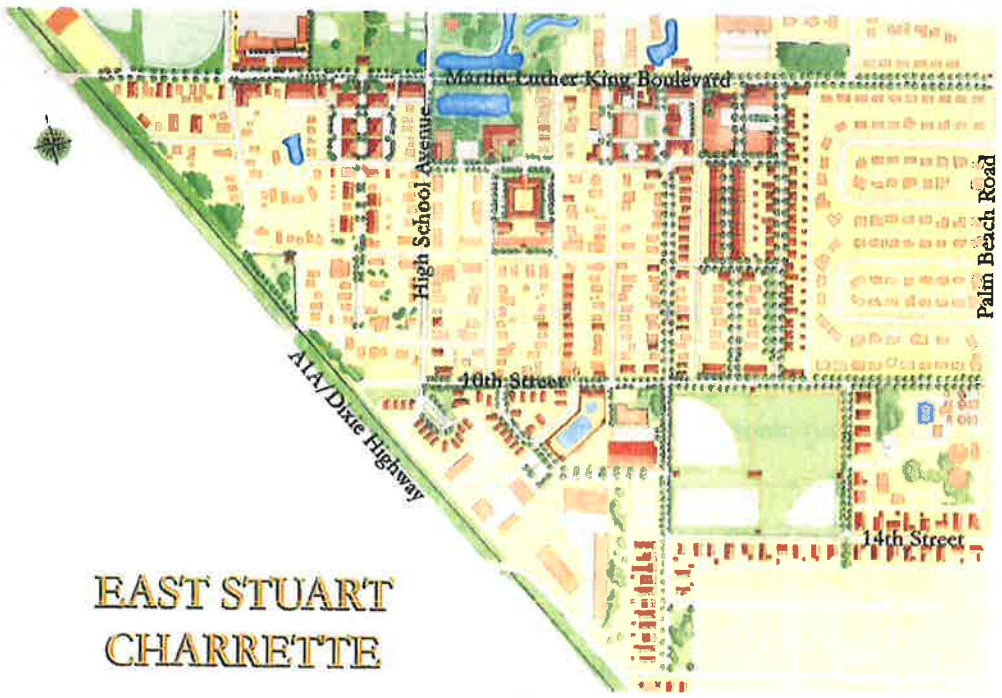


Fig. 4.1 Conservation Redevelopment in Florida

Fig. 4.2 Rhode Island Rural Sprawl

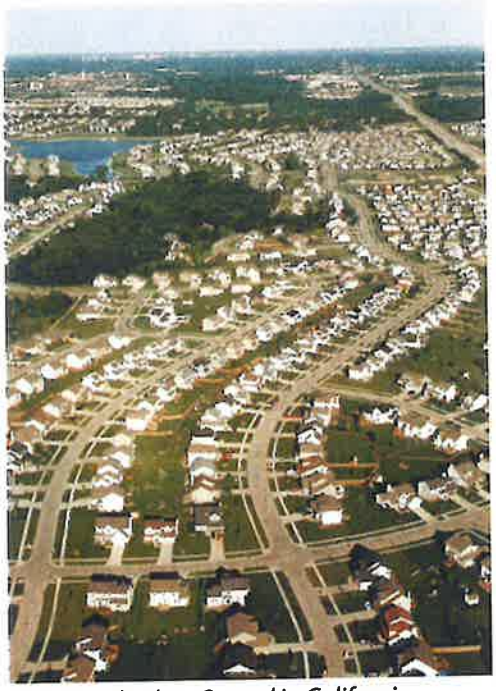


Fig. 4.3 Suburban Sprawl in California

Fig. 4.4 Extremely bad sprawl in Ontario

Conventional Redevelopment

The East Stuart community is a 100-acre neighborhood adjacent to the Orlando, FL downtown area. The neighborhood master redevelopment plan was created during a 2004 seven day public design charrette (an intense period of design activity). The objective of the charrette was to create a master framework plan to facilitate development and investment in private land and public infrastructure, preserve the community's heritage, and enhance its livability and sense of unity. The intent of the plan was to enhance the neighborhood's small town attributes and good physical structure by rectifying problems related to the damaging effects of speeding traffic, social problems, neglected buildings, and lack of a neighborhood retail main street center. *(For more information on the East Stuart charrette and Redevelopment Plan, go to www.tcrpc.org.) (Florida Planning Toolbox, Public Involvement and Education Tools: Charrettes)* Willard can utilize this case study and others like it to understand the problems of conventional zoning. Many communities in the nation are experiencing similar bedroom community situations and problems that need to be dealt with in a manner condusive of their values and inclusive of future growth patterns.

Suburban Sprawl

Suburban sprawl is an epidemic that is happening all over the country. A family of four can be expected to drive 40 more miles per day in a bedroom community or high sprawl area than a family in a low sprawl or mixed use area. This is dangerous for the environment and stressful on the economy. Where sprawl is inevitable residents drive more, breathe more polluted air, face a greater risk of car fatalities, and have to own more cars, and walk and use transit less. The average person in these types of suburbs tends to weigh eight pounds more than someone who lives within mixed use development.

Suburban sprawl has created cookie cutter communities with an emphasis on the garage as a symbol of status instead of emphasis on the front yard and the social interaction between neighbors. Whole communities have become places for individuals to commute to and from just as businesses are. In the future alternative energy sources will be unable to facilitate these areas because of lack of infrastructure and whole communities may become abandoned. Through better established planning and developing Willard can combat this sprawl that is indicative of conventional zoning with

Fig. 4.5 Traditional Sprawl in Florida

conservation techniques that utilize open space, parks, and trails.

Cluster projects like the one in Figure 4.7 were successful in creating permanent open space, but the usefulness of those areas were diluted by several factors, including a required buffer strip around the perimeter of the project, lack of coordination with neighboring properties, and a fragmentation of both natural habitat and potential recreation areas into many small unusable pieces. Conventional zoning (also known as Euclidean zoning), Planned Unit Development, suburban sprawl, and lack of holistic community planning all contribute to cluster. The only way to destroy the old conventional way of planning and developing is to adopt a new conservational view while facilitating the principles of livable communities, active living, and smart growth. These principles encompass an idea of planning for the future with adequate facilities to allow communities to become self-sustaining. Sustainable communities are environmentally friendly, economically productive and have socially interactive residents. With a community focused on education, Willard should be in an appropriate position to combat this conventional way of development.

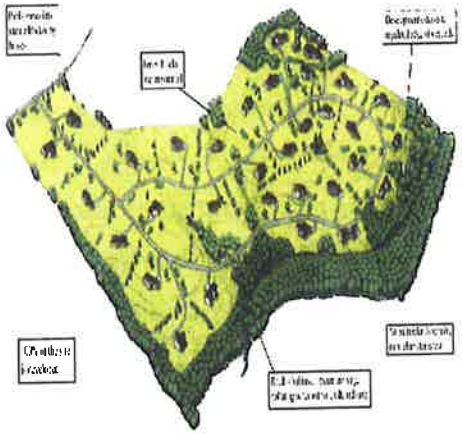


Fig. 4.6 Conventional Zoning Plan

Fig. 4.7 Cluster Zoning Plan

Conservation Overview

Willard zoning ordinances should be reexamined with an emphasis on conservation and preservation standards for natural resources, open spaces, and livable community principles. The goal of any zone ordinance project should be to develop standards for housing development and preservation, growth management, environmental protection and agricultural uses. The principle goals should focus on: residential development based on regulations, building envelope standards, architectural standards, agricultural practices including water resource standards, individual septic systems, floodplains, woodlands, residential development and associated development standards.

An example of Conservation zoning: The Babcock Ranch in Florida is one of the largest remaining undeveloped tracts of privately owned land at 91,000 acres. Because of responsible land management and environmental stewardship, the ranch contains a diverse stretch of habitat-friendly cypress domes, swamps, mesic flatwoods, and open pastures. When the Babcock family decided to develop part of the land, they took the necessary steps to ensure that important environmental resources were protected. In 2006,

Fig. 4.8 Mixed Use Concept in Clark County, WA

Fig. 4.9 Mixed Use Building in Liverpool, UK

the family sold the land to Kitson and Partners because of their commitment to sustainable land stewardship. 80 percent of the land was in turn sold to the state of Florida and will be conserved as publicly-owned lands. Ten percent of the land will be placed in conservation use (trails, greenways, and restored wetlands), which means that the last ten percent will be all that is developed. The habitat design

Fig. 4.10 Zoning Standards for Winona, MN

approach to the development means that wildlife habitat is actively conserved and integrated within and around the human settlements, and that residents are involved in the management and maintenance of the conserved lands and in learning how to be good neighbors to plants and wildlife. Residents will be able to walk or bike to jobs, recreation, and nature. Another feature is the use of green building techniques. *(Additional information on the Babcock Ranch is available from www.babcockranchflorida.com. Information on functional habitat design is available from cals.arizona.edu/pubs or www.myflorida.com.)*

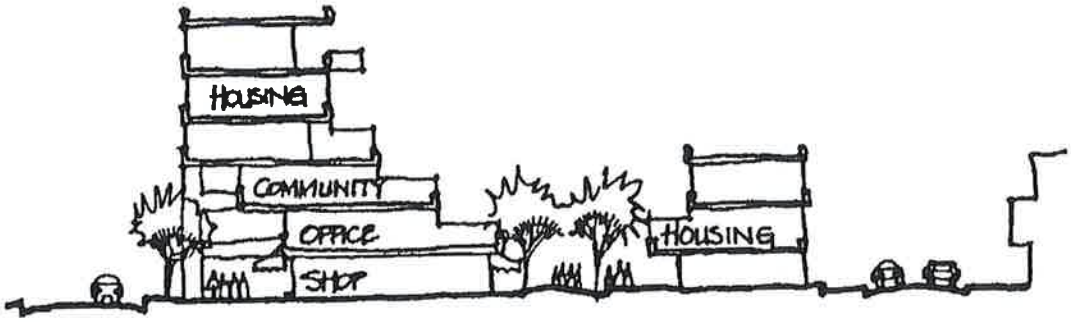


Fig. 4.11 Mixed Use Section Concept

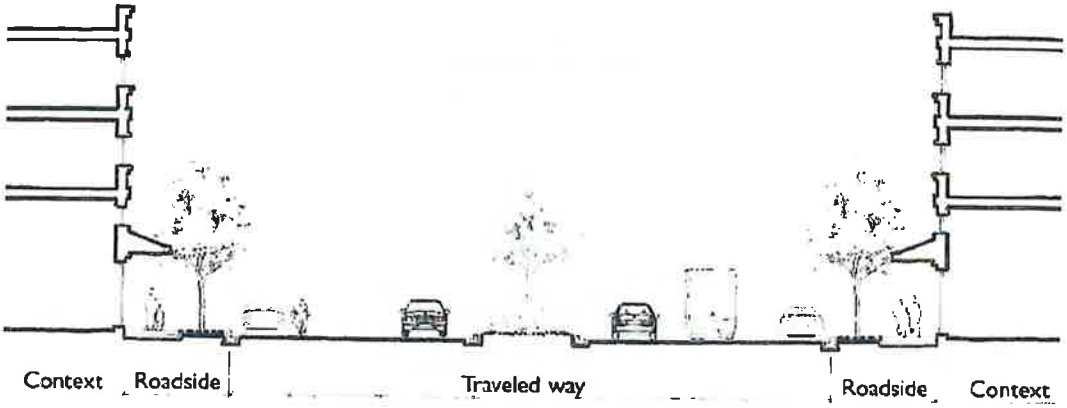


Fig. 4.12 Mixed Use Public Realm Section

Livable Roadways

A joint Hillsborough County Metropolitan Planning Organization and Planning Commission project, the Livable Roadways Guidelines promote the cohesive redevelopment of the community's roads which are characterized by strip commercial development that has eroded community character and, in older areas, has created a condition of blight and deterioration. To promote cohesive development, the guidelines provide for context-supportive site and building design. They also recognize the importance of connecting adjacent land uses and balancing the road right-of-way to equitably accommodate uses. *(For more information, go to www.hillsboroughmpo.org.)*

The Livable Roadways principle uses natural buffers to segregate urban

Fig. 4.13 Natural Buffer in Franklin, TN

design and the negative aspects of transportation: the car, asphalt, concrete, and other materials that make up roads, streets, and highways. Together these two aspects of transportation facilitate water runoff problems, impermeable surfaces, production of pollutants, and physical inactivity. Conservation principles, parks and open spaces are the solution to making roadways and communities more livable. The simple ratio of pervious to impervious surfaces is higher to better facilitate the water runoff and filtration processes that are natural and successful.

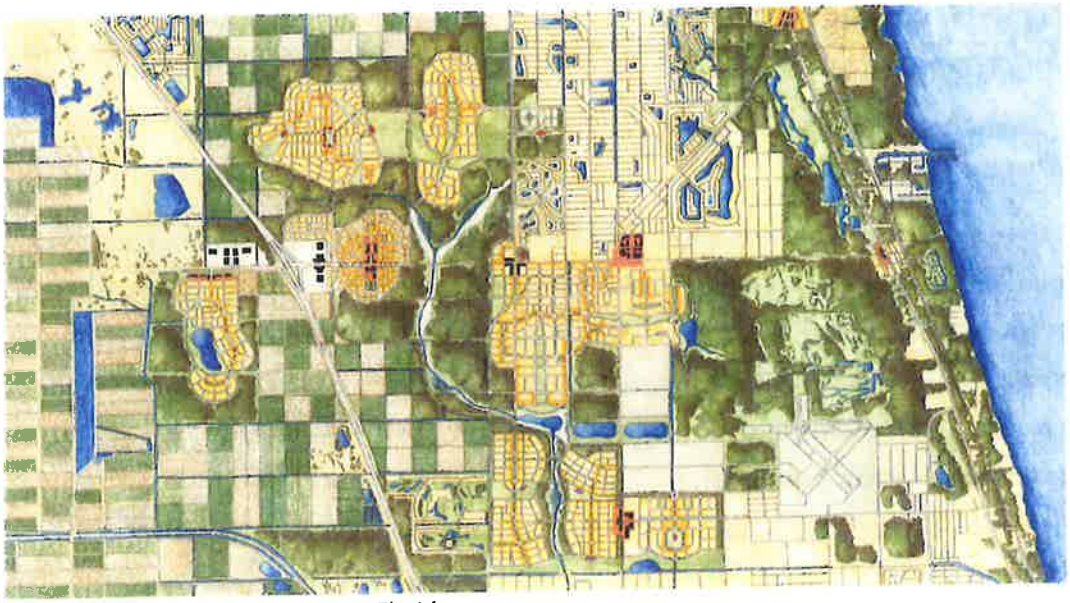


Fig. 4.14 Conservational Zoning in Florida

Town, Village, and Countryside Plan

The TVC plan for the 28-square mile North St. Lucie County area will replace the current planning instructions with a new model that shapes future growth into sustainable towns and villages and uses the market forces of growth as a tool. This will:

- retain large areas of the countryside
- comprehensively plan for water management
- address traffic and infrastructure needs
- maintain the urban service boundary in its current location
- accommodate the next 50 years of growth in a predictable manner that ensures the preservation of the residents' quality of life

(For more information on the TVC plan, go to www.tcrpc.org.)

Fig. 4.15 Conservation Trail in St. Johns, MI

Fig. 4.16 Zoned open space in Orlando, FL

FLOOD PLAINS

What is a floodplain?

A river, stream, lake, or drain may on occasion overflow onto the surrounding banks and inundate adjacent land areas with flood water. The land that is inundated by water is defined as a floodplain. Nationally, the term floodplain has come to mean the land area that will be inundated by the overflow of water resulting from a 100-year flood - a flood which has a 1% chance of occurring any given year. (http://www.deq.state.mi.us/)

Fig. 5.1 Flood Plain in the Distance

Fig. 5.2 100 year floodplain

Fig. 5.3 Flood plain wetland Rocheport, MO

Preserving Flood plains

Land within the 100 year flood plain boundary should be preserved to facilitate the natural processes of the environment such as watershed, runoff and collection of storm water. The city of Willard should land bank and set easements to control the use of ecological sensitive floodplains. Land banking is the easiest and most cost effective way of developing a natural reserve in these sensitive areas. If the floodplain areas are not land banked, Willard will have to go back at a later date, as Springfield has, and reclaim the land that has already been divided, plotted, or developed. Failure to properly protect the floodplain is much more expensive and damaging to both the environment and community in the long term. Floodplain areas should be preserved and used for natural habitat preservation and passive recreation. The Willard Park Board in collaboration with the Missouri Department of Conservation should establish restrictions and guidelines for each identified floodplain area. A buffer of low density housing should surround each protected area to reduce the impact on the watershed.

Fig. 5.4 Wildlife preservation at floodplains

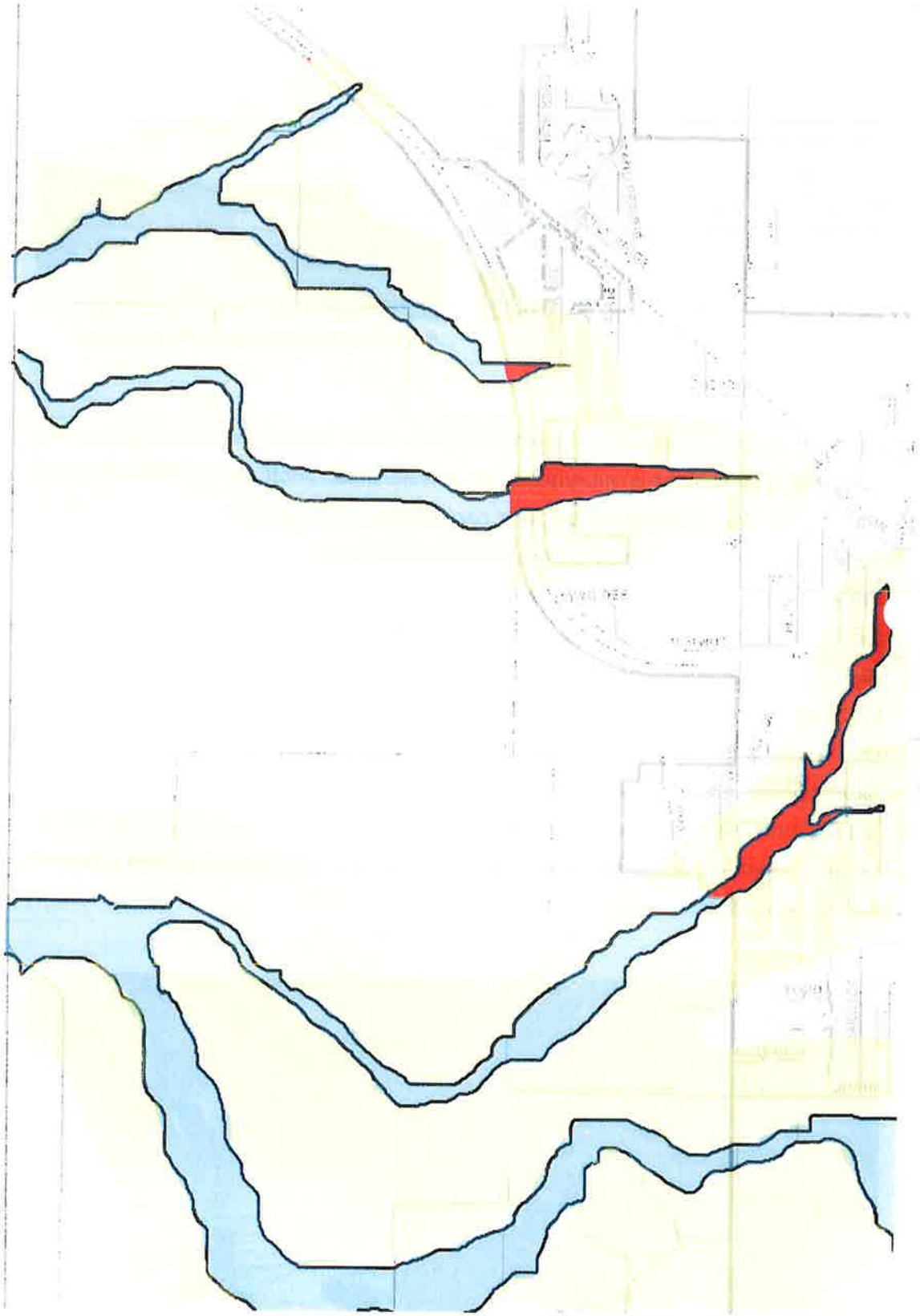
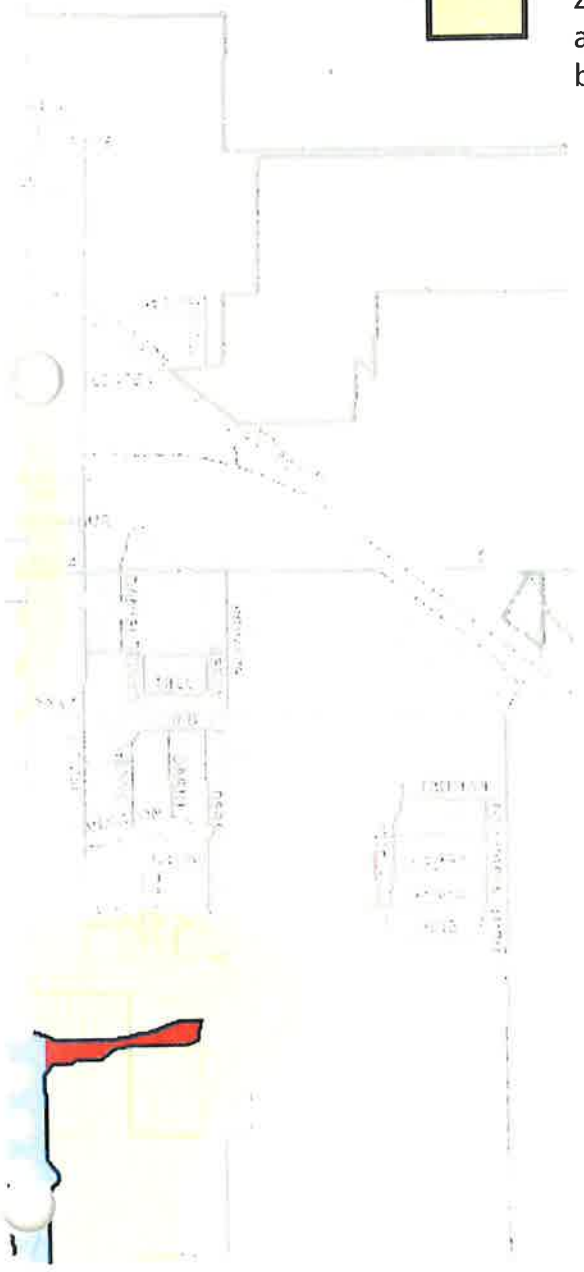


Fig. 5.5 100 year floodplain in Willard, MO

Flood plain areas that should be preserved

Flood plain areas that have already been developed

Zones surrounding floodplains that have a direct effect on water quality and should be developed responsibly



Water and Life

Water is vital, in its quality, quantity, flow and location, to meet the needs of ecosystems. These ecosystems include us--humans. People cannot be divorced from the water environment. Human activities, on land and water, can affect water flow, quality, water levels and its ability to support life. This life includes tremendous biodiversity. Water and wetlands provide some of the most important habitats on earth. Equally, water and water related ecosystems such as wetlands, provide us with essential services from potable water, water for agriculture, energy, flood management, recreation opportunities, filtering and waste services, fisheries and tourism. *(http://www.floodplains.org/)*

Fig. 5.6 Flood in Wilmington, NC

Fig. 5.7 Flood in Goodview, MN

Conserving the Environment.

Walking trails that do not impact the environment should be permitted in the preserved floodplain areas. A passive trail that winds through Willard's floodplains and wetlands could lead people to diverse plant and animal habitats. Trail guides and interpretive signage can identify the special features along a trail and enhance our appreciation for the natural and cultural heritage.

Fig. 5.8 Signage in Southern Maine

Fig. 5.9 Nature trail & signage in Wisconsin

Trails

Trails in these areas could cross lands which are environmentally sensitive in many ways. By leading users along well-worn paths, trails keep users away from more sensitive features that might not be able to withstand traffic. A well-developed trail can provide environmental buffers that protect delicate wetlands while allowing users to experience varied plant and animal wildlife. In order to keep the wetlands in their natural state, the trail should only be open to foot traffic and visitors must stay on the trail at all times. Motorized vehicles, horseback riding, bike riding, artifact gathering, plant gathering, hunting, climbing, camping, picnicking, building fires, audio equipment and pets should not be permitted on the trail.

Signage

To any casual nature enthusiast, the wide array of plant combinations in certain areas can be confusing. Proper signage that locates and identifies specific plants can be useful and very educational for residents and visitors.

Observation Tower

An observation tower can be constructed in the floodplain areas for the public to view the natural habitat. This observation tower could serve as an educational center. The tower can also provide opportunities for photography, bird and animal watching and nature study.

Fig. 5.10 Obervation Tower in Latvia

Greenways

Develop Greenways in semi-sensitive floodplain areas for the establishment of future nature trails. Conserving the floodplain with this type of low impact development, can achieve the preservation of the rural landscape and the small town feel that Willard is striving to accomplish.

Greenway Guidelines

When designing a greenway, it is important to consider what impact it will have on natural processes. Greenways, like natural environmental corridors can operate in six basic ways:

- Habitat for plant and animal communities
- A conduit for plants, animals, water, sediment, and chemicals
- A barrier preventing movement
- A filter allowing some things to pass while inhibiting others
- A source for animals or seeds which move to other parts of the landscape
- A sink for trapping sediment, toxins, or nutrients

Fig. 5.11 Aldridge Creek Greenway in AL

There are several ways to improve water quality protection of greenways:

- Make greenways continuous along the river or stream.
- Locate greenways on both sides of the river or stream.
- Include the river's flood plain, forest, associated wetlands, intermittent tributaries, gullies, and swales in the greenway.
- Undertake a study of the sites sediment and nutrient flow to establish how much is entering the floodplain and how much it will need to filter.
- Make greenway widths site-specific as opposed to jurisdiction-specific.
- Greenways which neighbor intensive land uses such as clear cutting, dense residential development, or shopping malls will need to be wide enough to absorb excess nutrients and toxins.
- Maintain a band of natural vegetation along the stream bank to protect against temperature increases.
- Minimize or avoid mowing streamside vegetation because it may decrease filtering effectiveness.

(For additional information on flood plains see Appendix: Flood Plains: Flood Plains).

Fig. 5.12 Delta shelter in floodplain in WA

Funding

Many floodplain restoration proposals are not funded because current funding avenues are inflexible and cannot be easily combined. It is not always the case that there is a shortage of money, although some important sectors such as biodiversity tend to be under resourced. Inefficiencies in systems also contribute to poor water quality, loss of biodiversity, deterioration in landscape quality and lost opportunities for rural regeneration. Traditional cost benefit analysis used for allocating water management monies largely fails to account for wider social and environmental benefits. The solution lies in flexible, accessible, complementary funding streams that support delivery of catchment strategies. To assess the funding needs, catchment forums must:

- Determine a vision, objectives and strategies.
- Devise a current cost.
- Determine new mechanisms to achieve the objectives, identify and agree with existing and new funding sources.

The Department of Natural Resources is the official state agency for all matters pertaining to floodplain management. The Floodplain Management Section is responsible for coordinating an overall program aimed at addressing the wise use of land subject to flooding. This is accomplished by providing:

- Technical assistance on floodplain management to communities, state agencies, federal agencies, and the public; identifying and delineating floodplains
- State coordination for the National Flood Insurance Program
- Technical assistance and funding to the communities for the development of local flood hazard mitigation plans

(For additional information of on funding see Appendix: Flood Plains: Funding).

HIGHWAY 160

Beautification Overview

The Highway 160 corridor that runs through Willard and connects the community to the regional amenities lacks a coordinated highway beautification plan. Consideration should be given to the establishment of beautification guidelines and programs for the highway with particular emphasis placed upon the section located within the Willard city limits and urban growth boundary.

Fig. 6.1 Bur Oak

Native Vegetation

The region has a wide variety of beautiful native trees, shrubs, grass, and bushes which are already acclimated to the climate and soil of the area. In addition to the inherent aesthetic quality of the native vegetation, these plants require significantly less maintenance, and irrigation. Native vegetation is also better for attracting and nurturing wildlife of the region.

With the reduction of fertilizer and pesticides, water supplies are protected from contamination and the decrease in irrigation conserves the natural water sources of the region, helping to protect future water supply.

Fig. 6.2 Hackberry

Fig. 6.3 Big Bluestem

Fig. 6.4 Sugar Maple

Fig. 6.5 American Snowbell

Fig. 6.6 Black Gum

Fig. 6.7 Spice Bush

The placement of vegetation along Highway 160 will also help to naturally treat the stormwater from the highway, and help direct the treated water towards natural water sources helping to recharge natural aquifiers.

Fig. 6.8 Stone River - Goldsworthy

Environmental Art

Enviornmental art along Highway 160, the Frisco Highline Trail and throughout the community can further enhance the community and promote tourism. This art should reflect the importance of the natural environment of the region and celebrate the environment as art. By creating environmental art installations along the Highway 160 corridor and the Frisco Highline Trail the community can strengthen its commitment to and appreciation of the regional ecosystem that nurtures all life physically and spiritually. The establishment of environmental art installations that celebrate the beauty of nature and highlights the importance and beauty of our regional landscape would be a proper civic investment that helps promote the community ethos of environmental consciousness and conservation.

Fig. 6.9 Storm King Wall - Goldsworthy

Fig. 6.10 Arch at Goodwood - Goldsworthy

Fig. 6.11 Neuberger Museum - Goldworthy

The concept that the natural environment is art underpins every aspect of the Willard Park system and the community's proposed motto, "Willard: The Gateway to the Great Outdoors."

Fig. 6.12 Business signs

Billboards

In order to retain a small town feel, Willard should establish a billboard ordinance to control the size, type, and lighting of billoards and signs in the city *(see Model Billboard Ordinance in Appendix)*.

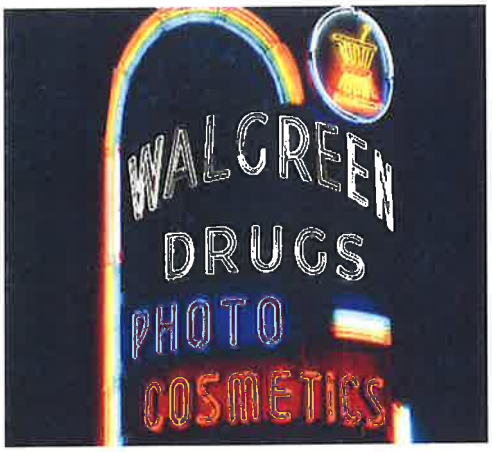


Fig. 6.13 Neon sign

Fig. 6.14 Missouri billboards

Lighting

Throughout the community along the highway and trail corridors care should be taken to provide adequate lighting appropriate for the activities anticipated and context. Safety is of the utmost importance along these transportation corridors.

Particular attention must be given to maintaining a proper balance between the illumination of these areas for safety concerns and the production of unwanted light pollution that is distractive and intrusive.

The incorporation of solar powered light fixtures is encouraged to conserve energy and to support the community's environmental consciousness.

Fig. 6.15a Solar lights

Fig. 6.15b Solar lights

Fig. 6.15c Solar lights

Fig. 6.16 Divided highway

Crossing Overview

Highway 160 is a physical boundary between residential neighborhoods and needs to be modified to facilitate a safer and more convenient way of crossing for pedestrians and cyclists. Safe routes should be established at all Highway 160 intersection crossings within Willard.

At Grade

To facilitate safe grade level crossings of Highway 160, clearly marked and lit pedestrian crosswalks should be installed complete with fixtures informing pedestrians of the amount of time they have to cross. Strict red light enforcement cameras should also be implemented. However, even with all these precautions in place, safety will still be a critical issue.

Below Grade

Creating a below grade crossing of the Highway 160 corridor requires extensive planning with MODOT to accommodate for the highway's expansion. The tunnel must be adequately lit for safety concerns and should be maintained regularly to ensure stability and ease of access. This method is much safer than a grade level crossing and allows for a free flow of pedestrian and alternative transportation crossing of Highway 160.

Fig. 6.17 Below grade crossing

Fig. 6.18 Below grade crossing

Above Grade

An above grade crossing could provide a convenient and safe crossing of the Highway 160 corridor and serve as a symbolic gateway into Willard. This method has the potential to allow the parks system to flow over Highway 160 and create a strong physical and visual connection within Willard through the parks system. This is a safe and attractive way to facilitate a free flow of pedestrian and alternative transportation crossing of Highway 160.

Fig. 6.19 Wildlife crossing

Materiality of Structures

In the context of below grade and above grade crossings, the materials should reflect the character of the region. Masonry elements could utilize rock quarried in the region to help minimize transportation costs and feature natural elements found in the area.

Fig. 6.20 Concrete

Fig. 6.21 Mamposteria

Fig. 6.22 Flagstone

Fig. 6.23 MO limestone

Highway 160 Expansion Overview

With the planned expansion of Highway 160, it is important for Willard to be an integral member in the development of the planned expansion to create a holistic solution that addresses the issues of beautification and crossing.

Median Strip

The placement of native vegetation in the median strip will help to improve the aesthetic quality of the highway and reduce roadside maintenance cost.

Fig. 6.24a Median strip in Orlando, FL

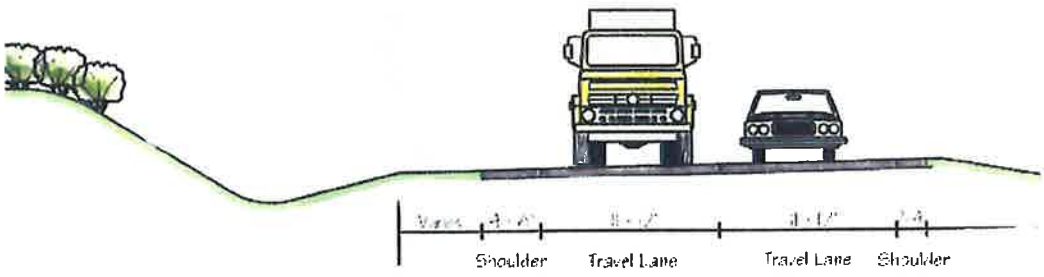
Fig. 6.24b Proposed overpass from above

Crossing Locations

By coordinating the expansion of Highway 160 with MODOT, the structural and easement considerations for both the above grade and below grade crossings can be more efficiently considered.

Green Highway Partnerships

By working with MODOT early, the interconnectivity of this initiative's multi-modal concept can be implemented in a more environmentally sensitive highway solution.



Four Lane

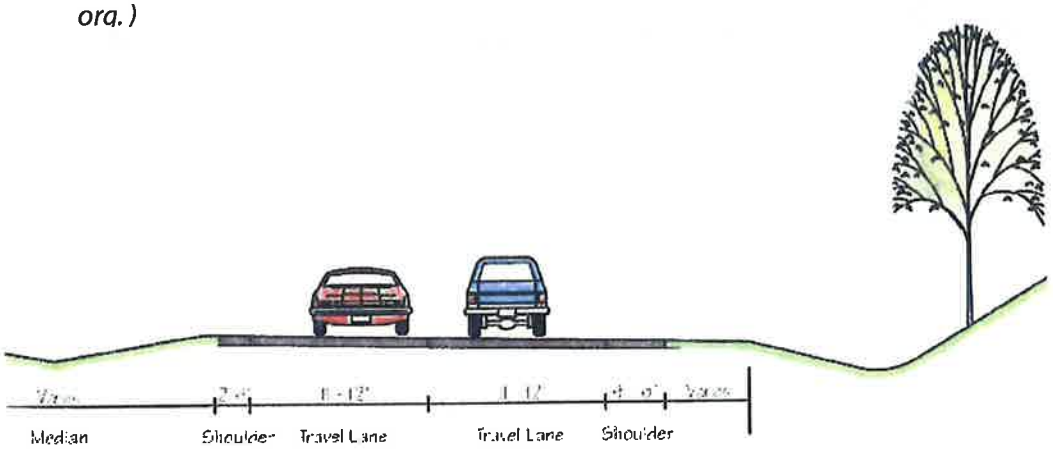
Fig. 6.25 Four lane highway Section

Fig. 6.24c Proposed overpass from below

This partnership should consider:

- Bio-retention
- Environmentally friendly materials and practices
- Vegetative bufferings
- Stormwater
- Wildlife crossings
- Multi-modal transportation and interconnectivity
- Signage and lighting

(For more information on Green Highway Partnerships, visit www.greenhighways.ora.)



Divided Roadway

CONSERVATION AREA

Creating Partnerships

Creating partnerships among the Willard community constituencies has the potential to benefit all entities involved.

Fig. 7.1 Missouri Bladderpod

Successful Activities

The conservation area is currently home to the activities of bird watching, hiking, hunting, and trapping. Other activities that could be incorporated into the conservation area following the implementation of partnerships and further community involvement include, but are not limited to:

- A nature center including interactive activities
- Well planned nature trails that are ADA accessible
- Signage describing the historical, cultural and natural features such as Rocky Barrens commitment since 1835 to protecting the rare bladder pod which is only located in three other areas of Southern Missouri.

Other aspects to take into account while developing the conservation area are:

- Benches and resting areas
- A possible homestead farm
- Historic schoolhouse
- Ecosystem gallery
- Nature store
- Arboretum

All of these attractions could provide opportunities for day camps and field trips to easily accessible wetlands, prairies, demonstration gardens and community gardens. These suggestions illustrate how the Rocky Barrens conservation area could be integrated into the Willard Parks System Plan and activities to further enhance the community's outdoor resources and environmental education potential.

Fig. 7.2 Historic Homestead

Fig. 7.3 Historic Schoolhouse

Fig. 7.4 Midwest Tallgrass Pairie

Precedents

The following are examples of successful conservation areas relative in size to Rocky Barrens. The first and third, Matsell Bridge Natural area in eastern Iowa and Queen Elizabeth Park in Vancouver, are similar to Willard's conservation area in that they too, contain reclaimed quarries. The second precedent, while it does not contain a reclamated quarry, is home to some of the same ammenities that could prove successful for the city of Willard.

Matsell Bridge Natural Area

Fig 7.5 Camping in St. Marys, Ontario

Fig 7.6 Native Prairie in Shelby County, IA

Mount Hope, once used for limestone excavation, has been incorporated into Matsell Bridge Natural Area. Once a quarry very similar to Conco with very deep working areas left over. After incorporation into a larger park, Mount Hope now features a camping area, wetlands which are well suited to quarries of this type, conifer plantings, grasslands, native prairie and agricultural fields. The quarry was simply reinstituted into the surrounding landscape. In a similar way, Conco could be incorporated into the lands of the proposed demonstration farm, conservation area and trail system. *(http://www.linncountyparks.com)*

Queen Elizabeth Park

In 1930, the park's future was revealed when the BC Tulip Association suggested transforming the quarries into sunken gardens. By the end of that decade, the site had been turned over to the Vancouver Park Board for park and recreation purposes. From that time, park staff incrementally transformed the overgrown hillsides into Canada's first civic arboretum, with a generous donation from the Canadian Pulp and Paper Association. The popular quarry gardens were unveiled in the early 1960s. Its recreational offerings are diverse, ranging from sporty to horticultural and include golf, tennis, disc golf, an extensive outdoor arboretum and the indoor Bloedel Floral Conservatory. *(http://vancouver.ca/parks/parks/queenelizabeth/)*

Francis Beidler Forest

Fig. 7.7 Queen Elizabeth Park in Vancouver

The Francis Beidler Forest is an Audubon wildlife sanctuary in Four Holes Swamp, a blackwater creek system in South Carolina. It consists of over 15,000 acres (61 km^2) of mainly bald cypress/tupelo gum swamp with approximately 1,800 acres (7 km2) of virgin, old-growth forest. It has an environmental education center and a 1.75-mile (2.82 km) boardwalk trail through the virgin, old-growth portion of the swamp. It is a favorite haunt of birdwatchers and is used for biological research projects by area schools. The Audubon Society which maintains the preserve along with the Nature Conservancy, has recently obtained funding with which to purchase additional adjacent land to expand the preserve. It is home to the largest virgin stand of cypress and tupelo forest, with some trees over 1,000 years old. At high water there is guided canoeing in the swamp, which offers a different perspective as one paddles through the shallow channel and cypress knees. *(http://www.travelstuck.com)*

Fig 7.8 Francis Beidler National Park

Utilizing Audubon and the National Nature Conservancy

Considering the the current endangerment of the Painted Bunting Bird, Conco Quarry and the City of Willard could benefit from the utilization of information and support from the National Audubon Society and Nature Conservancy.

Audubon

Audubon's mission is to conserve and restore natural ecosystems, focusing on birds, other wildlife, and their habitats for the benefit of humanity and the earth's biological diversity. The national network of community-based nature centers and chapters, scientific and educational programs, and advocacy on behalf of areas sustaining important bird populations, engage millions of people of all ages and backgrounds in positive conservation experiences.

Nature Conservancy

The Nature Conservancy is a US charitable environmental organization working to preserve the plants, animals, and natural communities that represent the diversity of life on Earth by protecting the lands and waters they need to survive.

Founded in 1951, The Nature Conservancy works in more than 30 countries, including all 50 States, with an increasingly global reach. The Conservancy has over one million members, has protected more than 69,000 square kilometers (17 million acres) in the United States and more than 473,000 square kilometers (117 million acres[3]) internationally. The organization's total support and revenue was $1.28 billion in fiscal year 2007 with assets totaling $5.42 billion. The Nature Conservancy is rated as one of the most trusted national organizations in Harris Interactive polls.

Fig. 7.9 Audubon logo

Fig. 7.10 The Nature Conservancy logo

CONCO QUARRY

Quarry Reclamation Overview

There are many uses for an exhausted quarry. Sloping the banks of an exhausted quarry and revegetating the area is a common reclamation practice. It is, after all, the least expensive way to satisfy government regulations. But more costly reclamation projects can turn a profit in the long run. Rock quarries are usually much deeper and a longer term operation than their sand and gravel counterparts and thus offer very different restoration challenges. Deeper working of the same area means opportunities for progressive restoration are often more limited. Modern quarry design ensures that substantial landscape screening is carried out around the periphery of sites. The upper 'benches' can also be treated and planted at an early stage as they become available, thus reducing the visual impact.

Fig. 8.1 Stanley Park in Vancouver

Habitable Parkland

There are many potential end uses for an exhausted pit or quarry. These include land preparation for commercial or residential building, construction of recreational facilities, with the water-filled pit accommodating swimmers and boaters, or land conditioning to provide a home and breeding ground for wildlife.

In a rural area, for example, an exhausted site might be restored to agricultural land or a wildlife refuge. In urban or suburban areas, buildings or parks may be the appropriate end use. Nothing serves to strengthen community relations more than to return mined-out sites to the public for recreation. A public that plays on reclaimed land is a public less likely to complain about active operations. While larger profits result from developing mined-out sites for commercial and residential building, reclaiming for wildlife demands a much smaller initial investment. Such reclamation may involve little more than sloping the banks of the deposit and reseeding the area.

The following are descriptions of mined-out sites that have been converted to public use areas. Gone are the loaders and haul trucks; they have been replaced with fishing poles and golf carts.

Watermark

Not all reclamation projects are completed just after reserves have been exhausted. American Aggregates Corp.'s Watermark site in Columbus, Ohio, is an example of an ongoing reclamation project.

An American Aggregates' sand and gravel operation began at the site in 1927. From 1961 to 1976, American Aggregates shipped material to or from the site by rail. Finally, in 1976, the operation closed. Reclamation of the water-filled pit has taken place over the past 30 years, even while the plant processed material on the property from other sites.

"In the early 1960s, alternatives were proposed for reclaiming the site," said Scott Epling, manager of parkland development for American Aggregates. By the late 1970s, the company decided to build an island in the water-filled pit and create usable land, according to Epling. That development strategy was expanded to include selling the property. *(http://www.pitandquarry.com)*

Watermark is now a multi-use park accomodating residential areas, park land, and other marketable areas including a lake. While Conco Quarry is much smaller in scale than Watermark, it too has the ability to fill with water.

Fig. 8.2 Conco Quarry as of September 2008

Fig. 8.3 Centennial Lakes

Fig. 8.4 Centennial Lakes

Fig. 8.5 Centennial Lakes

Fig. 8.6 Centennial Lakes

Centennial Lakes

Centennial Lakes is a $300-million reclamation project underway in Edina, Minn., near Minneapolis/St. Paul. This former Hedberg & Sons Co. gravel pit will be converted to housing, office, entertainment and retail space.

The 87-acre site will be developed over a 10-year period. It will include office space, low-rise condominiums, mid- and high-rise apartment units, an 8-screen movie theatre, retail space and a hotel.

A 25-acre park surrounds a lake that runs the length of the reclamation site. Though no part of the site is below the water table, the area needs a pond for stormwater.

The lake will serve as a storage/control basin and an aesthetically pleasing lake. The lake will have a plastic bottom. Water will not be aerated so it can freeze in winter to allow skating. The shoreline will have rip rap on one side, while another side will have a hard wall of concrete brick and stone.

The Edina site sits on valuable real estate. According to Linda Schutz, public affairs director, J.L. Shiely Co., it is a few blocks from a premier shopping area in one of the state's most affluent communities. *(http://www.centenniallakespark.com)*

Fig. 8.7 Madison Lakes Park

Madison Lakes Park

The setting was once an active limestone quarry. Madison Lakes Park is a 177-acre site, part of which American Aggregates Corp. still mines. A dike separates a reclaimed area from the active mining.

Two bodies of water mark the reclaimed site. A six-acre lake and a 10-acre lake each provide fishing spots to local residents. The face of the original quarry rises from the 10-acre lake. Above the face, an interpretive center overlooks the water. This building was established for visitors and includes meeting rooms and kitchen facilities. Near the interpretive center, a fishing pier juts into the lake. Picnic tables dot the park, and two childrens' play areas feature swings, sliding boards and monkey bars.

Fig. 8.8 Madison Lakes Park

To aid in development of the park, the Montgomery County Recreation and Parks Department was awarded a $250,000 grant from the Land and Water Conservation Fund. The park took about three years to develop, according to Greg Klosterman, chief geologist at American Aggregates. A bathhouse will be built and swimming areas developed. Plans also call for construction of an outdoor amphitheater, trails and additional picnic areas. *(http://www.zmetro.com)*

Fig. 8.9 The Pit Golf Links

Fig 8.10 The Pit Golf Links

The Pit Golf Links in Pinehurst

The site was once an active sand and gravel pit. The Norfolk Corp. began commercial sand operations near Pinehurst in the early 1920s.

The sand and gravel operation was continued until 1975. For the next nine years, the land sat abandoned. Cox said during that time nearby residents rode dirt bikes and other recreational vehicles on the site. A golf pro in the area showed the land to third generation golf course architect Dan Maples.

Maples has designed several courses worldwide. His grandfather, Frank Maples, worked with renowned golf course architect Donald Roth. In the 1980s, work began to transfer the 230-acre site into a golf course. In a little more than a year, The Pit Golf Links opened to the public. Cost figures of the project are not available.

Since opening, the course has been well received. Golf Week magazine rated The Pit Golf Links one of the top ten in North Carolina. *(http://www.danmaples.com)*

Fig. 8.11 Dividing Creek

Dividing Creek

Because of strict regulations in New Jersey, site reclamation is mostly ongoing. Unimin Corp. operates a silica sand plant in Dividing Creek, N.J., a few miles north of the Delaware Bay. Since the 1980s, the company has been mining and excavating ponds at the site.

Unimin Corp. leases the 3,000-acre property, so no extravagant reclamation projects were seriously considered, according to plant manager Scott Phillips. Even though reclaiming a site for wildlife is the least costly form of reclamation, Phillips said the costs can still be high. Money for landshaping and seeding can be about $5,000 per acre-and none of those costs are recouped.

The company also stocked the lake with animal life and planted trees in the area. Much of the foliage was planted by Mark Hedden, a company employee in the geology and environmental department. Hedden said the trees and plants used are indigenous to the area and promote the migration of wildlife. According to John Patitucci, purchasing supervisor, plans call for building boat docks and picnic areas at the pond. Until mining is completed in the immediate area, the public must be kept out. But Phillips said the lake may be open to the public by next summer.
(http://www.dkimages.com)

Conclusion

Restoring a mined-out quarry to a beneficial piece of land has become a significant aspect of pit and quarry operations. Not only does reclaiming the quarry provide potential benefits to the surrounding community, it serves to bolster the image of the industry as a whole. Reclamation plans are most effective if operators and planners develop a strategy that satisfies the land use needs of the community and at the same time provides an economic incentive for the producer.

Popular uses for reclaimed sites include industrial and commercial properties, office parks, golf courses, and parks and recreation areas. Reclaiming for commercial and residential building may require a large initial investment, but may eventually turn a profit. Willard and Conco could both benefit greatly by creating recreational areas that provide the public a place to play while building positive community relations.

We believe that a collaboration between the city of Willard, Conco Quarry, Ozark Greenways, Willard School District, and the Rocky Barrens Conservation Area would provide all parties with many beneficial opportunities and outcomes.

Even though the Conco Quarry has a 100 plus year plan for the excavation of this site, it is important for all interested parties to come together soon to begin the planning for the eventual reclamation of this site. Many opportunities are available at the present time:

- Collaborative planning and development of the quarry's buffer area
- Plans for the reclamation of phased out portions of the quarry as they are removed from operation
- The coordinated development of the Conco buffer zone with the surrounding Bladderpod and Rocky Barrens Conservation District.

INFRASTRUCTURE, NETWORKING AND TRAILS

Lack of Pedestrian Infrastructure Overview

One of the main problems facing Willard is the lack of pedestrian routes through the town. A resident cannot safely walk from a neighborhood on the west side of Highway 160 to the Frisco Highline Trail head, the High School and historic downtown area. The lack of an adequate sidewalk system in Willard creates a major safety issue for its residents, especially its younger population. Children traveling from one neighborhood to another are forced, in most places, to either walk through yards or in the streets. The development of pedestrian routes throughout the community would help to create stronger social connections and safer environments for the residents.

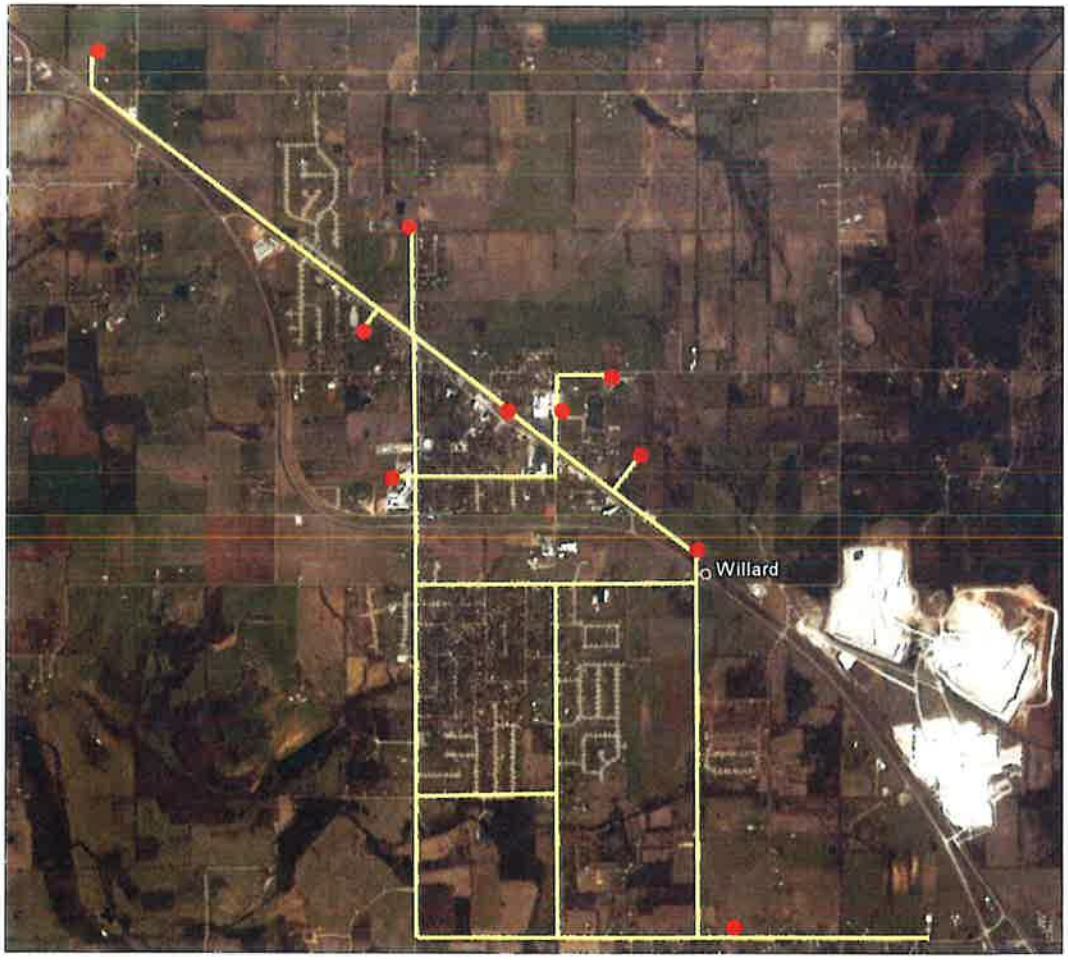


Fig. 9.1 Safe routes map

Sidewalks

To provide a safe and functional sidewalk network there needs to be a sidewalk guide. The width and materials of sidewalks needs to be uniform.

Vegetation

Providing plantings and landscaping along sidewalks creates a more pleasant experience.

Signage

There needs to be clear and easily visible crossing signs at highways and streets to warn both pedestrians and drivers of the pedestrian crossing point.

Fig. 9.2 Enclosed shuttle stop

Pedestrian Network

A well planned and maintained pedestrian network throughout Willard would provide residents with a greater choice of community travel and lessen reliance on the automobile.

Fig. 9.3 Simple shuttle stop

Future Light Rail Line

Since many of the residents of Willard work outside the community, it is crucial that safe, convenient and inexpensive means of transportation be developed to maintain Willard's economic vitality. A multimodal transportation network that utilizes the parks, trails and open spaces as routes to local commuter pick up points should be developed. At some future time when the economy forces the consideration of lifestyle changes, the community should consider its park system as a key to responding economically and environmentally to this challenge.

Fig. 9.4 Light rail line

Fig 9.5 Shuttle bus

The parks, trails and open spaces should be developed in such a way to serve as a multimodal transportation collector and distribution network for:

- Carpooling
- Public bus service
- Lightrail train service using the Frisco Highline Trail

Safe Routes Overview

Established in May 2006, the National Center for Safe Routes to School assists communities in enabling and encouraging children to safely walk and bike to school. The Center strives to equip Safe Routes to School programs with the knowledge and technical information to implement safe and successful strategies.

Fig. 9.6 Crossing signage

Education

The National Center for Safe Routes to School program maintains a website: www.saferoutesinfo.org that gives in depth information needed for a town to start its own safe routes program.

Fig. 9.7 Safe routes group

Fig. 9.8 Safe routes crossing

Fig. 9.9 Highway crossing gate

Fig. 9.10 Biking and walking lane

The following steps are recommended based on practices that have been successful in other towns:

- Identify people who want to make walking and bicycling to school safe and appealing for children
- Sharing concerns, interests and knowledge among a variety of community members with diverse expertise can enable groups to tackle many issues
- A goal of the first meeting is to create a vision and generate next steps for the group members.
- Collecting information can help to identify needed program elements and provide a means to measure the impact of the program later.
- Solutions to identified issues will include a combination of education, encouragement, engineering and enforcement strategies
- Safety is the first consideration
- It doesn't need to be lengthy
- Include encouragement, enforcement, education and engineering strategies.

- Create a time schedule for the plan.
- Hold a kick off event starting with a fun activity
- Participate in International Walk to School Day or celebrate a Walking Wednesday.
- To sustain the program, consider building additional program champions and letting people know about successes.

(National Center for Safe Routes to School)

Sidewalks

Without an established system of sidewalks throughout town a safe routes program is ineffectual.

Signage

To create a truly safe route system appropriate and easily visible signage must be placed at all road crossings.

Fig. 9.11 Safe routes group

Fig. 9.12 Aromatic trail

Barrier Free Design Overview

An alternative transportation and trails system must accommodate all individuals. The trails and outdoor experiences must consider and respond to the capabilities of all users; i.e. mobility, sight, endurance, size, cognition, etc.

Fig. 9.13 Seasonal activities

Vegetation

Consider the color, tactile, aromatic, and seasonal changes of the vegetation to enhance the experiences for all users irregardless of physical and mental capabilities. Vegetation should also be considered that may attract birds and butterflies. An engaging experience with nature and its processes can be condusive to Willard's slogan and newly adopted identity.

Safety

The sidewalk network shall comply with all safety regulations specified by the Americans with Disabilities Act (ADA).

Fig. 9.14 Aromatic trail

ADA running trail and paths are designed to do the following:

- Prevent washboarding
- Be water-proof yet promote adequate drainage
- Be able to withstand numerous freeze thaw cycles
- Provide very low cost maintenance
- Most of all, be very economical to construct with locally available machinery and labor

Fig. 9.15 Tactile trail experience

Fig. 9.16 Tactile and aromatic trail

Fig. 9.17 Plant tour

Active living Overview

While a complex range of factors contributes to the inactivity of communities, increasing attention is turning to how the places we live, work and play affect public health and our ability to be physically active.

The Active Living Network is dedicated to halting this troubling trend by finding creative ways to reintegrate physical activity into daily life. Rather than solely addressing the individual, the Network focuses on how the built environment, neighborhoods, transportation systems, buildings, parks and open spaces can promote more active lives. (Active Living Network)

Education

The Active Living Network maintains an in-depth website regarding precedent studies in towns that have successfully applied active living programs into their own towns. By following the same steps as these precedent studies outlined, Willard can promote a healthy lifestyle and population. These steps include:

Fig. 9.18 Active living by design

Fig. 9.19 Active living with mind and body excersice

- a model for environmental change and physical activity promotion
- a community organizing model for achieving lasting neighborhood and behavior change
- a model collaboration between foundations for health-oriented neighborhood improvement
- a multi-faceted model for outdoor urban recreation

(http://www.activeliving.org)

SUSTAINABILITY

Energy Overview

We strongly advocate the establishment of future goals that consider the possibilities for providing sustainable practices and energy conservation. The principles of solar, wind, and geothermal alternative sources of energy as well as common conservation principles can be taught in schools and established as a community ethos. The city and Park Board should work together to protect aquifers, watersheds, floodplains, and sink holes. Selecting indigenous vegetation, xeriscaping, and establishing proper gardening techniques can help promote this environmental consciousness. Willard should promote walking, cycling, and the interconnectivity of the trails and open space network throughout the community. Environmental standards already in place should be enforced more fully by the city and demonstration and interpretive activites can be created. Possible sustainable farms, educational trails and centers, and conservation districts can all enhance the full extent of the meaning behind the slogan for Willard: Gateway to the Great Outdoors.

Fig. 10.1 Wind Turbine in Nunda, NY

Fig. 10.2 Solar Panels in Depew, NY

Solar

Park facilities and trails should incorporate active and passive solar technologies to reduce the use of electricity from the coal fired power plant.

Wind

Park facilities should consider the use of wind power as an energy source whenever appropriate and possible.

Ground Source Heating and Cooling

The Park Board should consider the use of ground source systems to heat and cool its facilities.

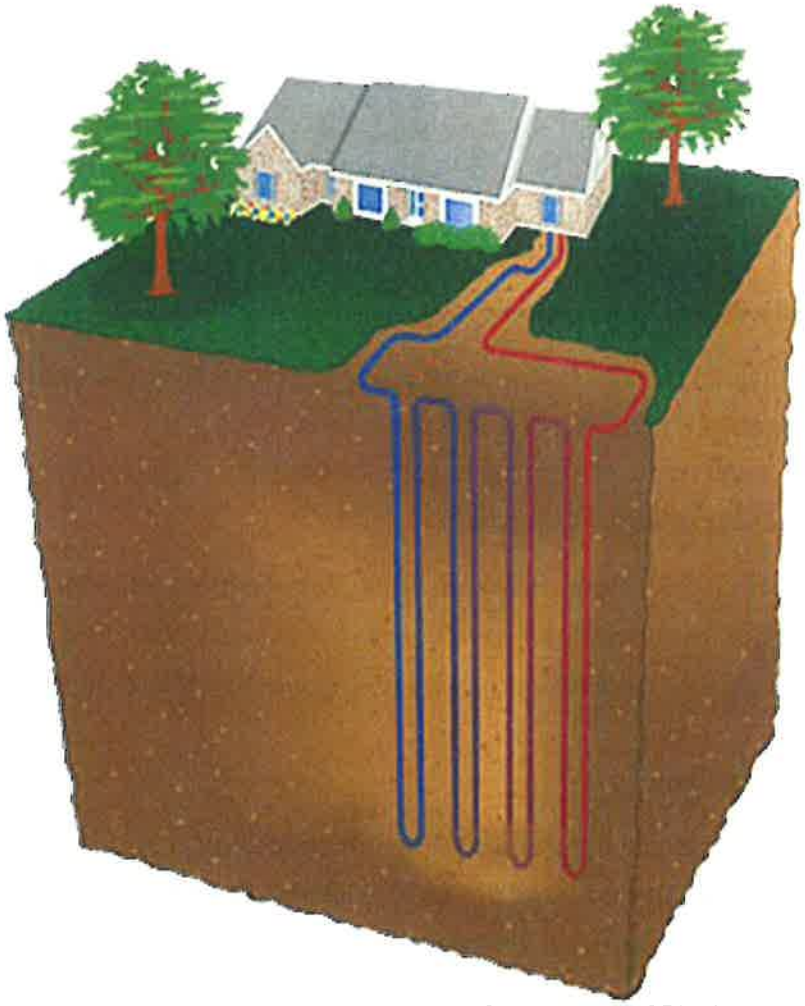


Image courtesy of ClimateMaster

Fig. 10.3 Ground source heat pump system

Water Overview

Water conservation is an extremely important issue due to the Kaist geology of Southwest Missouri. The protection of the aquifers through a comprehensive program of watershed protection, the utilization of native plants, capturing and using stormwater runoff and household gray water, reduction in per capita useage and community education is recommended.

Fig. 10.4 Xeriscape landscape

Fig. 10.5 Water retention

Native Vegetation and Xeriscape

Xeriscape landscapes, or dry landscapes, reduces the need for irrigation, and subsequent irrigation, maintenance, and pesticides.

Roof-water or Groundwater Collection

By installing roof-water or groundwater collection systems, rainwater can be harvested to satisfy irrigation or be used in non-potable applications. This water can be stored in cisterns and utilize gravity as a means to collect the rainwater.

Drip Irrigation Systems

Drip irrigation systems are much more efficient than typical sprinkler systems. The technology limits the amount of water entering the soil at a certain time instead of saturating the ground, giving the water more time to reach the roots.

Retention Ponds and Constructed Wetlands

In addition to the aesthetic quality of retention ponds and constructed wetlands, they are also good at removing contaminants from the water.

Future Development Overview

The future development practices of Willard should aim to limit sprawl. This strategy would help to reduce infrastructure costs associated with sprawl and protect and preserve the natural environment and character of the community which is one of the key factors residents chose to live in Willard.

City Center

The city center, as the historic downtown of Willard, should be established as a historic district and seek funding through the Missouri downtown revitilization program, DREAM. This can help to save some of the historically significant buildings in Willard such as the Willard Hotel, the Willard Bank, and the Kime and Sloan Houses.

Infill Sites

Lots that are currently empty within the city of Willard hold the opportunity to become open spaces, parks, or future development. Through efficient planning and consistent development, Willard can establish a focus on these areas as community amenities and a source of pride.

Environmentally Sensitive Sites

Future developments should be prohibited in flood plain areas, parklands, wetlands, or other sources of habitat for endangered plant and animal species.

RESOURCES

Introduction

Figure i	City of Willard
Figure ii	Willard Parks and Recreation Department
Figure iii	The Springfield-Greene County Library District
Figure iv	Drury University
Figure v	The Triple Bottom Line by Rohit Handa
Figure vi	The Smithsonian American Art Museum
Figure vii	http://www.archive.org/
Figure viii	http://springfieldhistorymuseum.org/archives/
Figure ix	http://springfieldhistorymuseum.org/archives/
Figure x	http://www.city-data.com/city/Willard-Missouri.html
Figure xi	http://www.city-data.com/city/Willard-Missouri.html
Figure xii	http://www.city-data.com/city/Willard-Missouri.html
Figure xiii	http://mislove.com/
Figure xiv	http://www.muskego.org/Festival.asp
Figure xv	http://flickr.com/photos/bobkh/2629230079
Figure xvi	http://www.phototour.minneapolis.mn.us/pics/599.jpg
Figure xvii	http://www.health.state.nm.us/
Figure xviii	http://www.copperonline.com/townsquarenews.htm
Figure xix	http://covenantzone.blogspot.com
Figure xx	http://citysquarepark.blogspot.com/
Figure xxi	http://www.marengoiowa.com/park%20fountain.jpg
Figure xxii	http://www.planning.nsw.gov.au/
Figure xxiii	http://www.whi.org.uk
Figure xxiv	http://activelivingprojects.com/page13.htm
Figure xxv	http://garden-tool.info/gardening.html
Figure xxvi	http://www.sports-council-wales.org.uk/10356
Figure xxvii	http://storymillcenter.com/intelligent-growth/
Figure xxviii	Watershed Committee of the Ozarks

Frisco Highline Trail

Figure 1.1	http://www.rollacity.org/pubworks/current.shtm
Figure 1.2	http://www.islandtrails.ca
Figure 1.3	Rendering done by Rohit Handa
Figure 1.4	Rendering done by Rohit Handa
Figure 1.5	http://natl.ifas.ufl.edu/SGNTpage.htm
Figure 1.6	http://www.panoramio.com/photo/166945
Figure 1.7	http://www.bernheim.org/trails.htm
Figure 1.8	http://ucmmuseum.com/ecotourism.htm
Figure 1.9	http://www.doe.mtu.edu/
Figure 1.10	http://www.rainbowroutes.com
Figure 1.11	http://www.rainbowroutes.com
Figure 1.12	Rendering done by Rohit Handa
Figure 1.13	http://www.lorisandassociates.com/pages/aawar.htm
Figure 1.14	http://www.orangetwpparks-recupdate.org/
Figure 1.15	http://www.accessfayetteville.org/
Figure 1.16	http://iesnawestflorida.com/_wsn/page16.html
Figure 1.17	http://www.expogreenway.org/Conservation.htm
Figure 1.18	http://www.tfhrc.gov/pubrds/08may/04.htm

City Center

Figure 2.1	Plan drawing done by Patrick Thompson
Figure 2.2	Plan drawing done by Patrick Thompson
Figure 2.3	Plan drawing done by Patrick Thompson
Figure 2.4	http://www.mapc.org
Figure 2.5	http://www.ia.nrcs.usda.gov/
Figure 2.6	http://www.inhabitat.com/2006/06/24/salvaverde/
Figure 2.7	http://www.celltekdirect.com/solutions.asp
Figure 2.8	http://www.mo.gov/mo/moparks5.htm
Figure 2.9	http://www.flickr.com/photos/disgruntled/277392536
Figure 2.10	http://www.flickr.com/photos/tzoe/532463426
Figure 2.11	http://www.flickr.com/photos/tzoe/532460822

Figure 2.12	Plan drawing done by Patrick Thompson
Figure 2.13	http://www.city-data.com/
Figure 2.14	http://www.mansfieldtwp.com/
Figure 2.15	http://www.louisvillewaterfront.com/
Figure 2.16	Section drawing done by Patrick Thompson
Figure 2.17	http://www.louisvillewaterfront.com/
Figure 2.18	http://www.flickr.com
Figure 2.19	Photograph taken by City of Willard
Figure 2.20	http://www.cityofsalem.net
Figure 2.21	http://lakesuperiortreefarms.com
Figure 2.22	http://www.ci.roanoke.va.us
Figure 2.23	http://tampa.about.com
Figure 2.24	http://ilovesidewalks.blogspot.com
Figure 2.25	Section drawing done by Patrick Thompson
Figure 2.26	Photoshop image done by Patrick Thompson
Figure 2.27	Elevation drawing done by Patrick Thompson
Figure 2.28	Photoshop image done by Patrick Thompson
Figure 2.29	Elevation drawing done by Patrick Thompson
Figure 2.30	Plan drawing done by Patrick Thompson

Parks, Recreation & Open Space

Figure 3.1	http://www.co.westmoreland.pa.us
Figure 3.2	http://www.greenways.com/hubandspokesmodel.html
Figure 3.3	http://www.usm.edu
Figure 3.4	http://www.yorkville.il.us
Figure 3.5	http://cala.arizona.edu/
Figure 3.6	http://cala.arizona.edu/
Figure 3.7	http://www.kecparty.com
Figure 3.8	http://www.plu.edu
Figure 3.9	http://www.plu.edu
Figure 3.10	Perspective drawing by Paul Peck
Figure 3.11	http://www.darienparks.com

Figure 3.12	http://www.cottonwoodtrail.org
Figure 3.13	http://www.channahonpark.org
Figure 3.14	http://www.roseville.ca.us
Figure 3.15	http://www.tanako.org
Precedents	http://www.penmetfoundation.org
	http://www.pps.org/parks_plazas_squares/
	http://www.ci.sultan.wa.us
Figure 3.16	http://www.missoulaparks.org
Figure 3.17	http://www.usc.edu
Figure 3.18	http://www.missoulaparks.org
Figure 3.19	http://www.friendsforourriverfront.org
Figure 3.20	http://gallery.teamradpan.com
Figure 3.21	http://www.tunspan.com/projects_piedmontpark.htm
Specifications	http://www.cityoffrederick.com
	http://www.elibrary.state.pa.us/
Figure 3.22	http://www.portlandsoftball.com
Figure 3.23	http://www.opkansas.org
Figure 3.24	http://www.flickr.com
Figure 3.25	http://www.flipnflyer2000.com/kids.park6
Figure 3.26	http://www.heritagefdn.on.ca
Figure 3.27	http://www.flickr.com/photos/crowt59/2198603350
Figure 3.28	http://www.naturepreserves.ky.gov
Figure 3.29	http://www.landchoices.org
Figure 3.30	http://www.flickr.com
Figure 3.31	http://www.flickr.com/photos/vangral/2797791188
Figure 3.32	http://www.architecturalreviewawards.com
Figure 3.33	http://www.cabq.gov
Figure 3.34	http://www.architecturalreviewawards.com

Zoning & Land Use

Figure 4.1	http://www.cuesfau.org/toolbox
Figure 4.2	http://www.dem.ri.gov
Figure 4.3	http://blog.kir.com
Figure 4.4	http://www.perfectduluthday.com
Figure 4.5	http://current.com
Figure 4.6	http://www.dem.ri.gov
Figure 4.7	http://www.dem.ri.gov
Figure 4.8	http://www.co.clark.wa.us
Figure 4.9	http://www.cabe.org.uk
Figure 4.10	http://www.sehinc.com/online/winona-co/index.html
Figure 4.11	http://ntl.bts.gov
Figure 4.12	http://www.ctchouston.org/whatnot/index.php
Figure 4.13	http://www.civilconstructors.com
Figure 4.14	http://www.cuesfau.org/toolbox
Figure 4.15	http://www.clinton-county.org
Figure 4.16	http://www.cuesfau.org/toolbox

Flood Plains

Figure 5.1	http://www.flickr.com/photos/mbradbury/69589931
Figure 5.2	http://pioneerplus.ejournalism.ca
Figure 5.3	http://mo.water.usgs.gov
Figure 5.4	http://www.wildwings.com.au
Figure 5.5	Plan drawing interpretation done by Paul Peck
Figure 5.6	http://www.saw.usace.army.mil
Figure 5.7	www.flickr.com/photos/ssoross/1185387635
Figure 5.8	http://jamesdochtermann.com/fieldwork.htm
Figure 5.9	http://www.dnr.state.wi.us

Figure 5.10	http://www.t3m.info
Figure 5.11	http://www.hsvcity.com/gis/greenways/aldridge.htm
Precedents	http://www.vbco.org
	http://www.hrwc.org/text/floodplains.htm
Figure 5.12	http://chicagonorthshorehome.com
Funding	http://www.fema.gov/plan/index.shtm
	http://www.nrcs.usda.gov
	http://www.uga.edu
	http://www.twca.org

Highway 160

Figure 6.1	http://www.grownative.org
Figure 6.2	http://www.grownative.org
Figure 6.3	http://www.grownative.org
Figure 6.4	http://www.grownative.org
Figure 6.5	http://www.grownative.org
Figure 6.6	http://www.grownative.org
Figure 6.7	http://www.grownative.org
Figure 6.8	http://news-service.stanford.edu
Figure 6.9	http://www.flickr.com
Figure 6.10	http://www.sculpture.org.uk/work/000000100328
Figure 6.11	http://www.neuberger.org
Figure 6.12	http://www.flickr.com
Figure 6.13	http://www.flickr.com
Figure 6.14	http://www.flickr.com
Figure 6.15a	http://sigmaconsultingeng.com/services.html
Figure 6.15b	http://modok.us
Figure 6.15c	http://www.aimsolar.com/solar_street_lights.htm
Figure 6.16	http://www.flickr.com/photos/pjchmiel/260766348
Figure 6.17	http://flickr.com/photos/stephen_rees/2493087261
Figure 6.18	http://www.ci.concord.nh.us
Figure 6.19	http://www.greenhighways.org

Figure 6.20	http://www.flickr.com/photos/wheatfields/373211189
Figure 6.21	http://www.flickr.com/photos/carles_foto/2438636561
Figure 6.22	http://www.flickr.com
Figure 6.23	http://www.flickr.com
Figure 6.24a	http://www.wbq.com
Figure 6.24b	Rendering done by Rohit Handa
Figure 6.24c	Rendering done by Rohit Handa
Figure 6.25	http://circeis.org

Conservation Area

Figure 7.1	http://www.ci.twentynine-palms.ca.us
Figure 7.2	http://static.panoramio.com
Figure 7.3	http://farm1.static.flickr.com
Figure 7.4	http://blog.lib.umn.edu
Figure 7.5	http://www.townofstmarys.com
Figure 7.6	http://conservation.shco.org/dinesen4.htm
Figure 7.7	http://afxafx.typepad.com
Figure 7.8	http://beidlerforest.blogspot.com
Figure 7.9	http://fw.ky.gov
Figure 7.10	http://www.partnersinflight.org
Funding and Support	http://www.nature.org
	http://www.audubon.org

Conco Quarry

Figure 8.1	http://commons.wikimedia.org
Figure 8.2	Photograph taken by Patrick Thompson
Figure 8.3	http://www.reneeslimousines.com
Figure 8.4	www.flickr.com/photos/croixboy/2800072425
Figure 8.5	http://www.centenniallakespark.com
Figure 8.6	http://www.centenniallakespark.com
Figure 8.7	http://www.dairylandwalkers.com
Figure 8.8	http://www.zmetro.com/archives/007410.php

Figure 8.9	http://www.danmaples.com/
Figure 8.10	http://www.golfpactravel.com/golfpac/index.cfm
Figure 8.11	http://www.dkimages.com

Infrastructure, Networking & Trails

Figure 9.1	Aerial Photograph done by Patrick Thompson
Figure 9.2	http://gothamist.com
Figure 9.3	http://www.dcapts.com
Figure 9.4	http://www.kkcsworld.com/R.html
Figure 9.5	http://www.ci.long-beach.ca.us
Figure 9.6	http://www.ponticelloinc.com/me.html
Figure 9.7	http://www.saferoutesmichigan.org/
Figure 9.8	http://www.bikesbelong.org/node/4080
Figure 9.9	http://picasaweb.google.com
Figure 9.10	http://www.swarpa.net/~danforth/photos/colorado03
Figure 9.11	http://www.saferoutesmichigan.org/
Figure 9.12	http://www.wildgingerfarm.com/DrylandGarden.htm
Figure 9.13	http://www.alcoamb.org/pages.php?cid=14&pid=8
Figure 9.14	http://www.wildgingerfarm.com/DrylandGarden.htm
Figure 9.15	http://www.wildgingerfarm.com/DrylandGarden.htm
Figure 9.16	http://www.stecmatours.com
Figure 9.17	http://www.ojaigarden.com/2008/05/
Figure 9.18	http://www.activelivingbydesign.org
Figure 9.19	http://www.yogalisa.co.uk/kids.htm

Sustainability

Figure 10.1	http://www.solarrochester.com/gallery.asp
Figure 10.2	http://www.solarrochester.com/gallery.asp
Figure 10.3	http://www.hvce.com/geothermal.htm
Figure 10.4	http://www.dallasnews.com
Figure 10.5	http://www.flickr.com

PRESENTATION BOARDS

Willard: Gateway to the Great Outdoors
Parks | Greenways | Open Spaces

FRISCO HIGHLINE TRAIL

Signage

Willard should start by implementing share the road signs to denote bike routes, trail nodes with kiosks, maps and informational signs for the education of the community and crossing signage to establish safe routes on and around the trail.

Networking

Willard has planned for the expansion of trails and certain greenways. Now is the time to set aside these pieces of land for the future networking of Willard. Developers should not be allowed to pass over ordinances that require sidewalks or usable open space. The success of any community starts with its members and the implementation of its Comprehensive Plan. The Frisco Highline Trail should be the organizing feature that all other trail expansion can radiate.

Underutilization

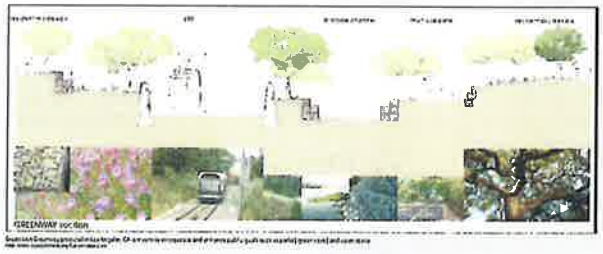
Trail events are the most significant catalyst for the successful utilization of the trail. The community will feel more comfortable with the trail and its significance when it becomes better integrated into the overall identity of Willard. The Frisco Highline Trail acts as the spine to the community and with the establishment of certain events can become that identity.

- 5K walks and runs
- Weekly bicycle rides
- Monthly equine rides
- Fundraising walks
- Nature hikes
- Monthly clean-up days
- History hikes and tours

Kiosk with maps and information about the Homestead Trail by the University of Illinois Extension.

Rendering of a proposed trail and pavilion at the new South Park in Willard, MO.

Rendering of proposed pavilion recreation in the evening or during the day in any of the parks in Willard, MO.



Poster announcing a trail, historical and educational event that takes place in Ontario, Canada.

Rendering of the Frisco Highline Trail during the day with a range of pattern recognition

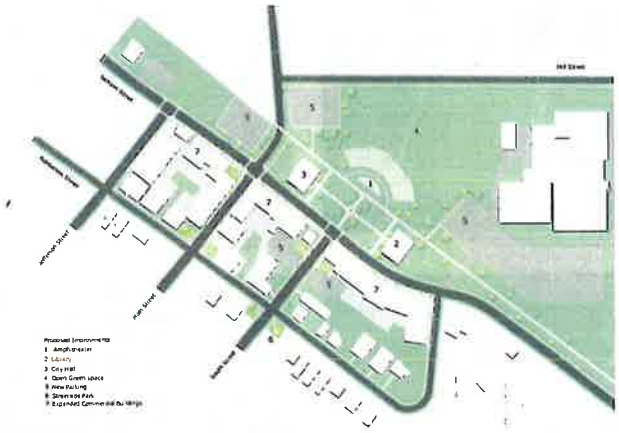
Rendering of the Frisco Highline Trail with advocacy signage for safe crossing intersection.

The Great Trail Event geocaching and kayaking in Ontario, Canada.

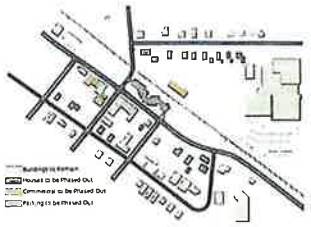
Successful natural buffer and lighting at Shell Creek Trail in Fayetteville, AR

Proposed trail sign at Clermont, KY for the Rock Run Loop

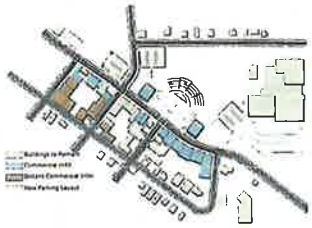
CITY CENTER PARK



Proposed City Center Layout



Existing City Center Built Spaces



Proposed City Center Built Spaces

Streetscape Lighting

Section Through Amphitheater

Outdoor Dining in Crownsville Md.

CONCEPT

The City Center Park proposal creates a social and civic center that will provide adequate space for community events and festivals. Creating an amphitheater with a large amount of open space can promote social interaction. Possible relocation of the library and city hall can provide a civic anchor for the community.

Rebuilding Jackson, Main and South streets to provide a pedestrian friendly enviornment can help draw people to the proposed city center. By creating a buffer between the street and the buildings, plantings, seating and adequate lighting a safer and more inviting pedestrian zone can be created.

Festival Spaces

Sledding on Hospital Hill in Beloit WI.

Brown Forman Amphitheater Louisville KY.

Park Recreation Spaces

PARKS | RECREATIONS

Park Type, Size, Radius, Population & Desired Site Characteristics

Pocket
Pocket parks are 1 acre or less in size with an access distance of ¼-mile or less. They are located within neighborhoods and close to medium and high density residential development.

Neighborhood
Neighborhood parks are 5 acres in size with an access distance of ½-mile or less. They are easily accessible to the neighborhood population; geographically centered with safe walking and cycling access. They may also be designed as a linear park that follows drainage patterns and roads.

Community
Community parks are 25 acres in size with an access distance of 3 miles or less. They may include natural features such as water bodies.

Regional
Regional parks are 100 acres in size with an access distance of 10 miles or less. Diverse or unique natural resources such as lakes, streams, marshes and other topography often inhabit these parks.

ACTIVE RECREATION

In active recreation, the individual plays a major role in the activity. Examples of active recreation includes: soccer, frisbee, football, bicycling, running, bmsk walking and playing basketball with friends and relatives.
Active recreation has many benefits including: physical activities which make an individual less prone to obesity and boosts the immune system. Research shows that positive changes in the immune system occur during moderate exercise. Active recreation also increases positive moods and can help alleviate depression.

Community canopy park

Active recreation for the whole family

Community park pavilion concept

PASSIVE RECREATION

Passive recreational parks include activities such as hiking, photography, bird watching and nature study that are great for all ages. The majority of the preserves are open year round from sunrise to sunset. Trails are open to foot traffic only and visitors must stay on them at all times, in order to protect the natural and cultural resources.

Deer seen as passive recreation

Pavilion for passive park

Pocket park concept

The public wants more parks

The public has shown that they want more parks. Voters have repeatedly shown their willingness to raise their own taxes to pay for new or improved parks. During the November 2002 elections, voters in 93 communities in 22 states approved ballot measures that allowed $2.9 billion to be acquired to restore land for parks and open space. Voters approved 85 percent of this type of referendum in this election. The public can see that parks provide a diverse and quantifiable range of benefits that immeasurably improve our quality of life. With Willard's evident commitment to the youth, Willard has an opportunity and a responsibility to define its present and create a better future for its children and generations yet to come.

Park interaction diagram

Community parks provide social interaction

Parks benefit the environment and users

Unique active and recreation at neighborhood parks

Park proximity for nearby single residences

ZONING | LAND USE

Conventional

Willard has stated in the Comprehensive Plan that Planned Unit Development should be used for all new development with a certain amount of open space set aside for each section of development. This is a conventional method of zoning and is creating sections of suburban sprawl which is in many ways counterproductive to the goals and values stated in the Comprehensive Plan.

Mixed Use

Zoning, especially in the historic downtown, should be reconfigured to allow for mixed use development. Willard can achieve a more economically stimulated center and provide for more social interaction with the adoption of this principle.

Conservation

The implementation of open space ordinances is the major catalyst for conservation zoning to be successful. Along with mixed use development, conservational zoning is the main principle for smart growth and making communities more livable. Active living is also encouraged and enhanced within these areas. This emerging trend is environmentally friendly, economically stimulating, and develops an identity within the community that every resident can have pride in. For more information on areas in the country that are adopting these principles:

- Rocky Mountain Land Use Institute
- Rhode Island Department of Environmental Management
- Florida Planning Toolbox
- Oregon Urban Development

FLOOD PLAINS

To assess funding to protect flood plains Willard must:

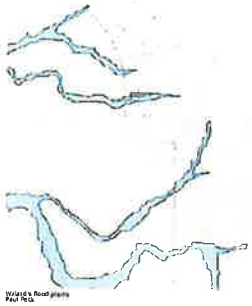
- Determine objectives, a vision and strategy.
- Devise new mechanisms to achieve the objectives.
- Identify existing and new funding sources.

Preserving Flood plains

Land between the boundaries of the 100 year flood plain should be preserved. The city of Willard can land bank and set easements to control the use of ecological sensitive flood plains.

Land banking is the easiest and most cost effective way of developing a natural reserve in these sensitive areas. If this area is not land banked then Willard will have to go back, as Springfield has, and reclaim land that has already been divided, platted, or even fully developed. Delayed action is much more expensive and damaging to both the environment and community.

Floodplain areas can be used for natural habitat preservation and passive recreation. The park board with the Missouri Department of Conservation can set restrictions and guidelines for identified floodplain areas specific to each region. An example would be a buffer of low density housing could surround each protected area to reduce the impact on the watershed.



Willard's flood plains
Paul Peck

Trail through sensitive areas

Flooded farm

Sensitive flood plain area

Sign language

Economic Benefits of Protecting Floodplains and Forested Stream Buffers

Commercial truck passing through flood plain

- Floodplains provide flood control at minimal cost by storing storm water, helping to protect downstream landowners and from flood damage.
- Forested floodplains slow down and lower storm water levels, providing a place for sediment and debris without causing damage to property.
- Protection provided by floodplains decrease property insurance costs and increase property values.
- Buildings built in food plains are prone to flood damage
- It is costly to buy back land in floodplains

Subdivision built on flood plain

Observation tower in sensitive area

Trail

Walking trails that do not impact the environment can be permitted in the restricted floodplain areas. A passive trail that finds its way through Willard's floodplains and wetlands lead people to diverse plant and animal habitats. Trail guides and interpretive signage can identify the special features along a trail and enhance our appreciation of our natural features and cultural heritage.

Signage

To any casual nature enthusiast, the wide array of plant combinations in certain areas can be confusing. Proper signage that locates and identifies specific plants can be useful and very educational for all residents and visitors.

Observation Tower

An observation tower can be permitted in the floodplain area for the public to view the natural habitat. This observation tower can serve as an educational tool. The observation tower can provide opportunities for photography, bird and animal watching and nature study.

Flood plains purify in reuse water.

Enormous damages to home owners from building in a flood plain

HIGHWAY 160

Potential Crossing Solutions

Highway 160 is underutilized as a regional arterial highway.

Willard should evaluate a beautification program along Highway 160 within city limits and in the region. Partnerships should be pursued with Conco Quarries, MODOT, and neighboring communities along Highway 160. The beautification program should include:

- Native Vegetation
- Lighting Considerations
- Environmental Art
- Billboard and Signage Ordinances

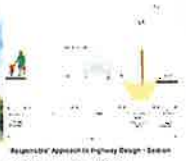
Highway 160 creates a physical separation between the north part of the community and the south.

Willard must resolve the separation created by highway 160 in addition to reconnecting the community. Of the strategies analyzed, the solutions which prove to be the most beneficial to the community are above grade and below grade crossings. Hardscaping in the construction of these crossings should be explored to include local materials to help offset costs and to reflect the character of the region. Partnerships should be pursued with Conco Quarries and MODOT.

MODOT plans to widen Highway 160 to a four-lane divided highway.

Willard must begin coordination with MODOT and be heavily involved in the decision making process with respect to the highway expansion. By doing so, Willard may be able to help offset the costs associated with the beautification program and the areas of crossing. A partnership should also be explored during this process with 'Green Highway Partnerships'. Early Willard involvement will:

- Mitigate the invasive nature of a four-lane divided highway
- Coordinate highway crossing locations
- Reduce environmental impacts associated with highway development



Regionally Available Materials

CONSERVATION AREA

Issue: The current state of the bladderpod conservation area on the northeast side of Willard does not appeal to the community or visitors. The city of Willard and the surrounding area could greatly benefit from a revitalized conservation area as a draw along the Frisco Highline Trail.

Endangered Bladderpod
http://www.ct.twentynine-palms.ca.us/fileadmin/user_upload/images/

Recommendation:

Marketing strategies, well implemented outdoor activities and partnerships with local entities, can help the conservation area become a large environmental and community builder. While there is little connection between the conservation area and the city of Springfield, an identity could be established in the future focusing on education and the environment. The community of Willard should greatly benefit from a well developed future conservation center with an emphasis on the community, the environment, and possible economic stimulation.

Precedents include:

Matsell Bridge Natural
Queen Elizabeth Park
Francis Beidler Forest

IMAGES
Top Row: Queen Elizabeth Park
Bottom Left: Francis Beidler Forest

Audubon
http://www.audubon.org/

The Nature Conservancy
Protecting nature. Preserving life.
http://www.nature.org/

CONCO QUARRY

Issue: Conco Quarry inhabits a large portion of the city limits of Willard. As the quarry begins to prepare for the closing in approximately 150 years, the community should begin to address solutions.

Recommendation:
The community of Willard and Conco Companies should seek to apply all of these options in order to create continuity between the community, the environment and the economy of the city. As a part of the Gateway to the Great Outdoors, Conco Quarry has the potential to serve as another point of interest along the Frisco Highline Trail, not only as a community and environmental draw, but an economic center for activities (camping, hiking, etc.). The area could become a tool for proper watershed treatment, farming education, and land stewardship as a result of proper quarry reclamation.

Precedents include:
- **Watermark**
- **Centennial Lake**
- **Madison Lake**
- **The Pit Golf Courses**
- **Dividing Creek**

INFRASTRUCTURE | TRAILS


Local Shuttle Route, Long Beach CA


Enclosed Shuttle Stop, New York NY


Proposed Primary Pedestrian Routes


Simple Open Shuttle Stop, Texas A&M


Proper Signage For a Safe Pedestrian Crossing Woodland CA


Safe Routes Facilitate Active Living


Light Rail Line, Dallas TX.

CONCEPT

Willard's pedestrian, cycling and possible alternative transportation network requires a cohesive vision. Establishing safe routes and adequate sidewalks for pedestrians can promote active living and social interaction throughout all communities. Developing tributary trails that radiate from the Frisco Highline Trail can allow for an extensive network for cyclists and pedestrians alike while creating interconnectivity between important community assets such as schools, the library and the proposed city center park. Park and ride options can be explored between Springfield and Willard for the people who commute during the week.


Shared Pedestrian and Bicycle Lanes, Boulder CO.


Safe Routes to School Group


Bicycling to School

SUSTAINABILITY

Water Technologies

Xeriscape Landscape

Energy Technologies

Wind Turbines

Land Use Strategies

Environmentally Sensitive Site

Energy

Producing a portion of the energy needed in the community on site through solar, wind, and geothermal technologies decreases the stress and dependance on the local distribution grid. In addition, power generated on site has virtually no transportation cost and is much cleaner to produce than conventional means.

Water

Water conservation is an increasingly pressing issue in society today and is easily addressable. The conservation of water has a tremendous impact on the local aquifers in the region which provide habitat and sustenance for plant and wildlife. Protecting the current water supplies also helps to ensure adequate water sources for future generations. Strategies that can be employed include:

- Use of native vegetation and xeriscape landscapes
- Roof-water and groundwater collection
- Retention ponds and constructed wetlands
- Drip irrigation technologies

Future Development

The future development practices of Willard should aim to limit suburban sprawl which will help to promote healthy living, protect the surrounding environment, increase alternative transportation options, and increase a sense of community. These strategies also help to reduce infrastructure costs associated with sprawl and protect the natural open spaces within the city. Strategies that can be employed include:

- Development near city centers
- Development of infill sites
- Prohibition of development on environmentally sensitive sites

Infill Site in Downtown Willard

Rainwater Cistern

Geothermal System

Typical Vacant House in Downtown Willard

Naturally Occurring Wetland

Street Lights Equipped With PV Panels

Drip Irrigation Technology

thank you for visiting willard

December 2008

Center for Community Studies

Hammons School of Architecture

Drury University

CD APPENDICES INDEX