

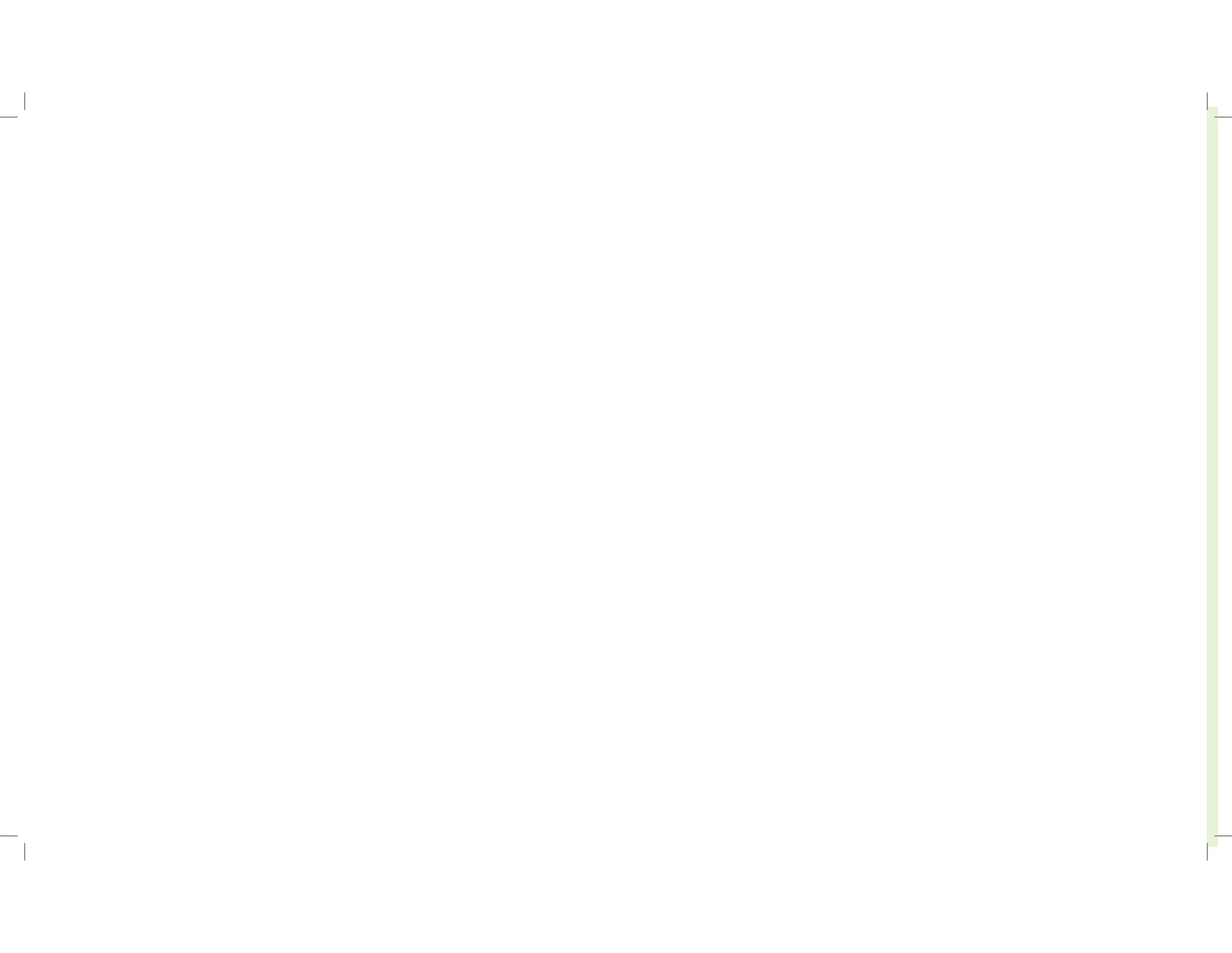
# SEDALIA MISSOURI

## SMART

Sedalia's Movement for an Active & Recreational Tomorrow

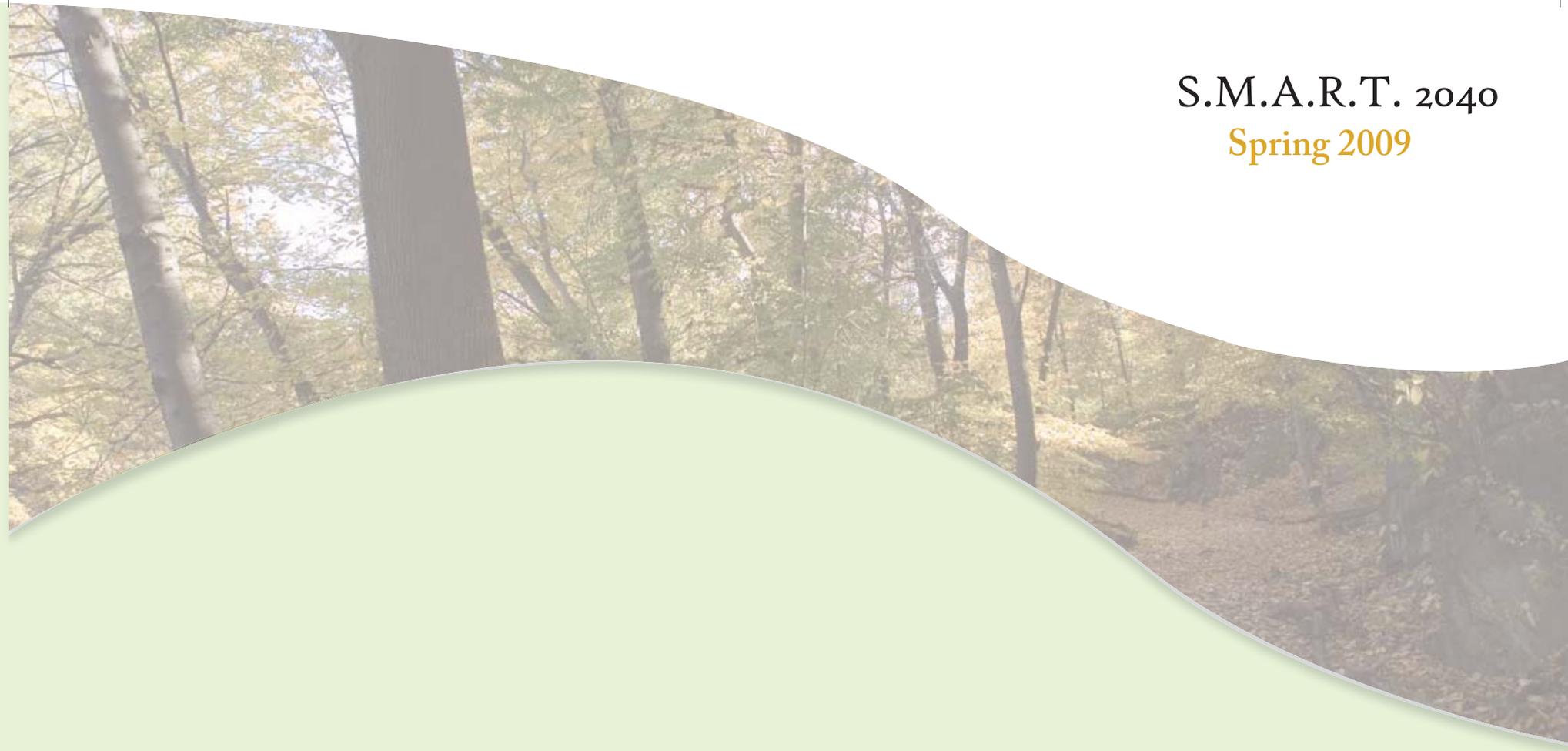


Spring 2009



*This book is dedicated to the leadership, service and memory of Mayor Bob Wasson.*





S.M.A.R.T. 2040  
Spring 2009

Center for Community Studies

Hammons School of Architecture

Drury University

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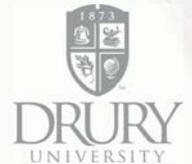
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# Executive Summary

## Preface:

Sedalia received the DREAM initiative in 2006. As a result, the city has begun to examine the way that it functions and question how its public infrastructure operates and more importantly how it may operate in the future. Gould-Evans' master plan for the city of Sedalia, completed in September of 2008, examines the question of what Sedalia can become. As a continuation of the concepts and ideas presented in Gould-Evans' Master Plan, Sedalia sought more specific recommendations pertaining to movement within the city.

Sedalia initially approached Drury University's Center for Community Studies to create a trail system throughout the city. The commission sought to revitalize the Katy Trail physically, as well as revitalize the perception of Sedalia's portion of the trail as viewed both by visitors and residents. Additional trails were to be added to create a trail network with special consideration to bicycle travel. The trails were to provide a functional form of transportation that could be used for everyday commutes.

## Visioning Statement:

The desired trail system was sought as a solution for the lack of mobility for pedestrian movement throughout the city. The trails are intended to provide relief from the growing dependence on vehicular travel and provide a healthy, viable solution for an active lifestyle. The Center for Community Studies used trail additions and improvements as an opportunity to address the core underlying issues which initiated the discussions for trails improvements in a broader, more comprehensive solution.

SMART 2040, Sedalia's Movement for an Active and Recreational Tomorrow, is a concept developed by the Center for Community Studies Studio which provides a vision of Sedalia that is livable and sustainable. This vision suggests a future Sedalia in which the automobile is not the sole mode of transportation. The following vision is one which concentrates residents into SMART mixed-use districts where walkability is practical and connects the city through a four-layer transportation system composed of trails, sidewalks, bike lanes, and mass transit.

## Mission Statement:

This document seeks to outline a comprehensive plan for the future of Sedalia. Drury University, University of Missouri-Extension, and Sedalia have worked together to identify and create solutions for the current and future pressing issues facing Sedalia. The purpose of this project is to create a more livable city and to improve the overall health and experience of the residents and visitors to Sedalia, culminating in the creation of a model city which works toward a more sustainable future. The following represents a summary of the essential goals for the project:

- Create a livable city
- Create a sustainable city
- Develop, improve and expand the Katy Trail
- Further integrate the State Fairgrounds as an economic resource and social hub
- Create a more efficiently organized city
- Create a more unified city with a stronger more complete identity

## Issues of Concern

- The highways split the city into four quadrants, making the city feel disconnected. It also makes the city incredibly difficult to maneuver without a car.
- There is a distinct east-west divide separating the city. This separation not only polarizes commercial and residential activity but also separates socioeconomic classes. This separation increases reliance on vehicular transportation.
- The integration of all people residing within Sedalia is a very important concern because they want to become one community. The citizens feel that there is a lack of “identity.”
- During the Missouri State Fair in August, the city population swells to approximately 379,000 people. The visitors tend to stay within the fairgrounds instead of exploring the city of Sedalia.
- The connection of the new high school and Clover Dell Park is important because many people within the community need access to these locations. This movement accentuates the increasing stress that urban sprawl is placing on the city. Subsequently, the city becomes increasingly disconnected from its historic infrastructure.

## Introduction to the Executive Summary

The following is a brief summary of the SMART 2040 proposal. The proposal will begin with an overview of the suggestion for the internal movement within Sedalia. The four-layer system consists of trails, sidewalks, bike lanes and mass transportation.

Following the section detailing the movement of the city, the proposal of SMART Districts will be outlined. SMART Districts improve upon a proposal made by Gould-Evans Master Plan in which they suggest the development of Neighborhood Centers.

Following the section on SMART Districts will be an outline of some social programs and activities that will reinforce the SMART 2040 proposal. By coupling the physical changes to the city with improvements on the social behaviors of its users, the likelihood of success will not only be increased but the integration of the systems and its benefits will occur more rapidly.

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### Trails

Trails are a driving force in the layering system because of their vitality and the strength of the existing Katy Trail. Trails should be treated as both a recreational outlet as well as a functional route that citizens can use to travel to work, school or other daily needs stores. Trail development can occur primarily within existing drainage ditches because of the relative ease of land acquisition, improved drainage capability, efficiency of city beautification and the availability of government grants to fund the development.

Connecting the Katy Trail is an imperative task in the process of improving the trail system. The stretch of the trail, North of the Katy Depot, that extends to the Northeast is the only discontinuous component of the trail. Initial connection should focus on improvements of the current route with a long-term effort to acquire railroad land and add a more consistent trail that follows the path that the original Missouri-Kansas-Texas Railway once did.

Issue: Land Acquisition

Guideline: Continue to work with the railroad to gain a land acquisition or land-share agreement. A persistent attitude coupled with such public interaction such as

mass letter writing programs will aid in this enduring process.

Issue: Safety while crossing the railroad should be a major concern until a bridge or underpass can be constructed

Guideline: Warning lights, sound warnings, and texture/elevation changes may be installed to alert all members of the community, regardless of disability, that a train is approaching.

Trail Improvements and Expansion will encourage use of the Katy Trail and instill a sense of pride and ownership of the trail system.

Issue: Lighting

Guidelines: Install solar powered lights that are directed toward the ground in order to avoid sky light pollution and wasted energy. Lights should be installed regularly to encourage safety.

Issue: Safety

Guideline: Provide call stations regularly alongside the trail. Encourage communal spaces along and near the trails in order to encourage citizens to assume their share of the responsibility for safety. Encourage

regular walking/biking patrol along the trail systems.

Issue: Paving

Guideline: Pave the Katy Trail with asphalt or concrete in order to make the trail more user friendly in all weather conditions to more users. A hard surface will be more inviting in poor weather conditions, will melt snow faster, and will encourage wheelchairs, families with strollers and bikers to enjoy the trail.

Issue: Trail Amenities

Guideline: Provide regular rest stops and drinking fountains along the Katy Trail. Regular benches positioned underneath shade trees make a trail more inviting and enjoyable.

Issue: Pavilions

Guideline: Outdoor spaces along the Katy Trail, such as pavilions, invite members of the community to use the trail and can make the experience along the trail more rewarding. Pavilions can start to create a distinct identity for Sedalia's portion of the Katy Trail.

**Issue:** Trail Art

**Guideline:** Art installations can make the experience of the Katy Trail more rewarding and interesting. Trail art can create a distinct identity for the trails. Art along each section of the trail can begin to reflect which part of the town the trail moves through.

**Issue:** Encourage Community use, involvement and ownership

**Guideline:** The trail is part of the city; for it to be more fully integrated the community must feel ownership and involvement in the trail. We recommend the incorporation of personalized donor bricks, benches, displays and features.

**Issue:** Signage can be improved along the Katy Trail in order to encourage interaction and accessibility with trail users.

**Guideline:** Provide adequate signage at all major trail, bike and sidewalk intersections to direct trail users to businesses and amenities that are located in Sedalia. Include specific location names such as Downtown Sedalia, the Bothwell Hotel, Missouri State Fairgrounds, etc. to provide warmth and create an identity that is unique to Sedalia, MO.

**Issue:** Katy Trail frontage property

**Guideline:** Outline codes for upkeep for property alongside the Katy Trail. For retail, encourage or require that the Katy Trail be addressed (i.e. outdoor seating, gathering spaces).

**Issue:** Bike Lanes

**Guideline:** Clearly marked bike lanes must distinguish pedestrian traffic from bicyclists.

**Katy Trail Bridge at Highway 65**

**Issue:** Gateway

**Guideline:** Create a bridge which gives the northbound traffic along 65 a feeling of arrival in Sedalia.

**Trailheads**

**Issue:** Accessibility

**Guideline:** A variety of trailheads should be added throughout the city to encourage use of the trails from several locations and by a variety of users. Trailheads may be as simple as an existing Church parking lot or as elaborate as a community center with complete facilities.

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## Sidewalks:

Sidewalks are an important aspect in the layering system. Sidewalks can also be described as the layer that connects the other layers together. Sidewalks fill the holes in the layering system by getting people to and from their homes to more specific destinations. Sidewalks should be categorized as three types: primary, secondary, and tertiary, each having their own function and design criteria.

**Primary Sidewalks:** Primary Sidewalks should be viewed as the sidewalks that are used while traveling longer and more direct distances. These sidewalks should be designed to carry larger amounts of people making them more practical for upgrades and improvements.

**Issue:** Selection of which roadways to include major sidewalks is the key ingredient to their success.

**Guideline:** When deciding which streets to apply major sidewalks to you must consider how these sidewalks can interact with the other components of the SMART system. Since sidewalks are just a part of the bigger layering system is it important that it stays connected and easily accessible from

the other layers of the system. One should also consider how these major sidewalks connect major sections of the town such as residential, commercial, schools, parks, industrial and recreational. Another factor to consider is whether there is adequate space for the proposed roads to contain these sidewalks.

## **Issue:** Setbacks

**Guideline:** The major sidewalks should be offset from the roads they follow. These offsets help the sidewalks feel more pedestrian friendly. These setbacks also work as a safety feature as they help separate the pedestrian from the road. Setbacks can be green spaces that can include shrubbery and trees; they can also be an area with street furniture such as trash receptacles, utility poles, signs, and water hydrants.

## **Issue:** Vegetation and Green Space

**Guideline:** Incorporate properly scaled trees and bushes to act as barrier plantings between sidewalks and streets to improve view, atmosphere and safety.

**Guideline:** Xeriscape vegetation is preferred due to survival rate and the relative self-sustaining nature of local plants.

## **Issue:** Sidewalk furniture

**Guideline:** These sidewalks should include sidewalk furniture to help accommodate the pedestrian and to help transform sidewalks into a more desirable space. This furniture can include benches, bike racks, drinking fountains, way finding signs, and informational kiosks.

## **Issue:** Lighting

**Guideline:** These sidewalks should be lit to encourage safety and promote the use of sidewalks during all times of the day. Lighting should be directed toward the ground to avoid sky light pollution and wasted energy. Street lights should be at a height that is appropriate for the scale of a human.

**Secondary Sidewalks:** Secondary Sidewalks should be located in places where large numbers of people still travel but it is uneconomical to place a primary sidewalk. These sidewalks will be more frequent than the primary sidewalks and will increase in quantity as they move closer to points of interest such as schools or parks. These sidewalks help direct pedestrians towards the primary sidewalks.

**Issue:** Criteria for deciding where secondary sidewalks should be located

**Guideline:** Secondary sidewalks should be placed on a grid throughout the city. They should be situated ever four to six blocks. They should also include every sidewalk that connect to points of interest such as school, parks, or other recreational areas.

**Issue:** Setbacks

**Guideline:** Secondary Sidewalks should be separated from the roads by a setback. These offsets make sidewalks safer for pedestrians and help to create sidewalks that are at a human scale.

**Issue:** Lighting

**Guideline:** Secondary Sidewalks should include some lighting. This lighting should become more frequent as these sidewalks move close to points of interest.

**Tertiary Sidewalks:** Tertiary Sidewalks include the remainder of the sidewalks within the city limits of Sedalia. These sidewalks are designed to help people move from their homes to the secondary sidewalks or primary sidewalks. These sidewalks contain the least amount of traffic.

### **Bike Lanes**

Bike lanes are another important component in the layering system. Bike lanes give priority to bicyclists and promote separation between pedestrians and automobiles. In many locations, due to exceptionally wide streets and large city-owned frontage property, bike lanes can be added with minimal costs and relative ease. A complete system of bike lanes can encourage a more active mode of transportation allowing the citizens of Sedalia to move throughout the city with minimal environmental impact.

**On-Street Bike Lanes:** One of the most prominent types of bike lanes are those attached along the edge of roads. Simply designating a lane for bikes to occupy can significantly increase a city's bike-friendliness. In most cases bike lanes can be added to the edge of existing roads with minimal changes to the street or disruption to traffic.

**Issue:** Labeling

**Guideline:** Bike lanes should be labeled at a scale so that both bikers and motorists can easily determine where bike lanes are. Being aware of where bike lanes are and how they work are a crucial part of bicycle

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safety. Qualities such as changing the road surfaces or possibly painting the entire bike lane can distinguish where bicyclists are located.

**Issue:** Selecting Streets for Bike Lanes

**Guideline:** Some streets are better suited for the adoption of bike lanes. Streets should be carefully examined before being designated as biking streets. Important things to consider are the width of the street, the amount of space available for the addition of bike lanes and the quantity of traffic. Typically the busiest streets are not always the safest option for bikers. Destinations of bike lanes, what each lane connects, is critically important to the success of each bike lane.

**Issue:** Intersections

**Guideline:** Intersections of busy roads can become the most dangerous aspect of bicycle integration. A safe new way to allow bicyclists to cross streets is with the integration of bike boxes. Bike boxes allow bicyclists to absorb a lane of traffic while they

wait for the green light. By waiting in front of the vehicles the bicyclists remain in full view of all automobile traffic. Another way to get bicyclists safely across busy intersections is by installing bike lights and coordinating bicycle movement into traffic lights.

**Issue:** Bike Racks

**Guideline:** Bike racks should be placed regularly throughout the city.

**Guideline:** Bike racks can become art installations that represent and enhance the city. Word art is a very direct way of getting across a message. A local design competition may be held for bike rack art which both encourages community participation and ownership of the bicycle system.

**Off-Street Bike Lanes:** Bike lanes running through trails are another important type to consider. Off-road trails such as the Katy Trail can create great opportunities for bicyclists to move quickly and safely across Sedalia.

**Issue:** Separation of bikes and pedestrians.

**Guideline:** Trails should have consideration for how bicyclists

are allowed to interact with other pedestrians. Trails with medium to high use should provide separation between bicyclists and pedestrians. Separation can be simple markers on the pavement or physical barriers such as a row of plantings. These separations make movement along the trails more efficient and safer for both the pedestrian and bicyclists.

**Issue:** Regulating Speed

**Guideline:** Situations along bike trails where high speeds can create a potential hazard, speed limits may need to be introduced. Speed limits can be expressed through typical speed limit signs or more passively through the physical design of the trail. Rough, bumpy paving or curvilinear trails encourage slower speeds.

## Mass Transportation

Mass Transportation is not only economical for the citizens of a city, it is economical for the city. Bus transit should be the emphasized system of movement within the city, while intercity travel should utilize the Amtrak system. The way that these two systems interact and reinforce each other is key to the success of each system. The mass transportation system should complement the other components of the layering system. The bus system should remain an economical mode of transport with costs remaining as low as possible while simultaneously working to improve the perceptions and experience of the mass transportation system. The system should market itself to the public on its strengths of sustainability, efficiency and accessibility.

**Amtrak:** The Amtrak Station is a great asset and should be built upon as a foundational strength of the community. As a sustainable mode of transport, Trains will play a greater role in the future. The Amtrak Station in Sedalia should be treated as a potential main entrance to the city.

**Issue:** Gateway

**Guideline:** Include signage that is visible from the rail line that greet and thank travelers upon entrance and exit of the city. Improved signage will help create a feeling of arrival.

**Issue:** Connection

**Guideline:** Encourage connection of the Amtrak Station to the city and its systems by including bicycle racks, large sidewalks and developing it into a trailhead. With easily accessible alternative modes of transport available, use of the amtrak system will increase.

**Issue:** Integration

**Guideline:** Develop the Amtrak as an integral part of the community by displaying a list of community events and regularly encouraging members and leaders of the community to utilize the system.

**Issue:** Expansion of purpose and function

**Guideline:** Work to create an exceptionally pleasant atmosphere with amenities which cater to the temporary visitor. This would enhance Sedalia's bid to become a 15-30 minute rest stop for the Amtrak, as opposed to a 5 minute stop only allowing passengers the time to board and exit.

**Guideline:** Develop the Amtrak Station as a major transportation hub within the city by connecting it as a major bus station. This reinforces the ease of accessibility through the combination of the two systems.

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**Bus System:** Expanding the role of the bus system in Sedalia will be as much of a social task as it is a physical improvement. With a few critical improvements and a fresh marketing and implementation plan, the bus system can become more viable.

### **Bus Routes:**

**Issue:** Efficiency

**Guideline:** Economy should be considered not only in terms of financial efficiency but also time. Bus routes should be no longer than 30 minutes.

**Issue:** Quantity of Routes

**Guideline:** Create multiple routes in order to maintain efficient movement and ease of expansion.

**Issue:** Identity and accessibility

**Guideline:** Work to develop a concise and clearly legible bus route diagram. Use clearly identifiable terminology such as 'blue line' or 'downtown loop' to distinguish between bus routes. This will help community integration of the system.

### **Bus Stops:**

**Issue:** Quality Stops

**Guideline:** Reducing the quantity of stops and focusing on the quality of location of a fewer number of stops will create a stronger more efficient system. Instead of attempting to create a major bus system which goes to every point in town, create one which goes to only a few of the major points in town. Develop the SMART system as a complimentary system which assists movement to extend to all corners of the city.

**Issue:** Shelter

**Guideline:** Bus stops should provide adequate shelter from the elements. The bus stops should feel like they are a place to be and rest rather than a momentary stop. Additional consideration should be given to how the bus stop feels and reacts with all seasons, temperatures and weather conditions.

**Issue:** Identity, ownership and integration

**Guideline:** Bus stops should represent and reflect the community. Consideration should be given to allowing local artists to paint bus stops and local architects to design them. A design competition would raise awareness of the improvements to the system as well as work to develop a series of bus stops which 'belong' to the community.

**Issue:** Integration and support of additional layers of the SMART system.

**Guideline:** City buses should encourage and reinforce biking, walking and trail use. This can be as simple as attaching bike racks to the front of every bus or can involve the implementation of more complex programs such as discount vouchers for riding your bike to the bus station. Additional programs to be discussed later in this summary may include such awareness programs as free bus to work day.

**Issue:** ADA Accessibility

**Guideline:** All of the bus stops should be at level with the buses in

order to encourage all members of the community, regardless of ability, to utilize the bus system. Creating at level loading is not only faster and more economical than a loading arm or hydraulic buses it is more empowering to the individual.

**Issue:** Lighting and Safety

**Guideline:** Bus stops should be well lit and have a feeling of security. Enclosures provide a feeling of security over open benches which often feel revealing and exposing. Police “In Case of an Emergency” call stations may be included to ensure safety.

**Issue:** Marketing and Integration

**Guideline:** Market and present the addition to the bus system as sustainable and efficient. By painting buses green and putting statistics such as the amount of fossil fuels saved by mass transit each year, bus travel can become a more legitimized form of transport.

## SMART Districts

To work in conjunction with the layering system, we propose a simple reorganization of the way the city operates. Expanding upon Gould-Evans work, we have accepted the objectives of neighborhood centers to develop a unique system of localized urban districts which provide all the daily needs of a functional

city within walking distance of each residents. Each of these SMART District operates as separate, complete entity which complements the other districts. SMART Districts are a direct furthering of the concept of neighborhood centers as outlined in Gould-Evans’ Master Plan. The core principle of neighborhood centers is the idea of locality. SMART Districts continues this idea of locality by effectively decentralizing the form of the city. Instead of the entire population shopping at one corner of the city and working and living at the opposite edge, we propose high-density mixed-use development to create a more efficient and sustainable way of life. SMART Districts:

- Adhere to smart growth principles.
- Exhibit a strong connection to a bicycle network, an effective mass transportation system and an accommodating sidewalk system.
- Contain a high-density and close proximity of residential and commercial mixed-use facilities.
- Cultivate livable cities with welcoming streetscapes, walkable sidewalks and an inviting atmosphere.
- Focus on the long term life cycle of a city.
- Developing a new form of urban design that meets the needs of the present without compromising the ability of future generations to meet their own needs.

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### Identity

**Organization:** As a new form of organization for the city, SMART Districts encourage a decentralized design as opposed to a centralized or distributed design.

**Issue:** Size

**Guideline:** Create districts approximately 1.5 miles in diameter. This distance creates a 15-25 minute walk to the furthest edges of the district.  
**Issue:** Contents of SMART Districts

**Issue:** Contents

**Guideline:** Each district should have a park and a school. The parks are to act as outdoor gathering spaces for the community and the schools can house indoor activities such as public speeches and meetings.

**Guideline:** Each district should have a farmer's market one day each week during season. The traveling farmer's market will provide fresh produce for each district within walking distance of each neighborhood in the city.

**Issue:** Lack of identity in suburban culture.

**Guideline:** Develop each SMART District into unique mixed-use neighborhood districts with a distinct character and notable identity. Ownership of parks and schools within each district will assist in the development of each district's identity.

**Guideline:** With the redevelopment of existing city infrastructure into SMART Districts, each district will have the potential for distinction of heritage and past.

**Issue:** Livability

**Guideline:** By encouraging communities to be broken up into smaller districts the city begins to establish networks with each neighborhood that reinforce the sense of community. Restoring community will help enhance the lives of the members in the community and reduce negative aspects of society (i.e. theft, vandalism).

**Connection:** Each district works to reinforce the idea of community and should be implemented with this goal in mind.

**Issue:** Connection

**Guideline:** Reinforce connectivity of the system by finding key points in the community to 'anchor' the districts together. Components such as schools, libraries, parks and the Katy Trail are good examples of places to connect the SMART Districts.

**Issue:** Urban Sprawl

**Guideline:** Implement an urban growth boundary which limits urban sprawl and encourages infill redevelopment. High density urban settings directly correlate to a walkability community.

## Implementation

### Issue: Tax Incentives

Guideline: Create tax incentives which encourage businesses to open in residential districts where their service was not previously present. By incentivizing mixed-use development, Sedalia will begin to create walkable neighborhoods which will provide the foundation for SMART Transportation system.

Guideline: Create tax incentives for shopping at local stores. If it is cheaper to shop at the neighborhood market then SMART Districts will become more successful.

### Issue: Education and Awareness

Guideline: Hold public meetings at walkable locations in each of the districts to establish regular meeting times for each SMART District.

Guideline: Create forums, hold meetings and raise public awareness on how to take advantage of the new zoning so that members of the community actively participate in the new system.

## Community Integration

To address social integration concerns and increase the probability for success, certain community programs are necessary. These programs will promote education of the new systems and processes. The goal of these integration programs is

to encourage safety and confidence in the systems by educating citizens on how to successfully utilize it.

Educational Programs are intent on creating awareness and procedural safety within the community. These programs work to reinforce confidence in the use of alternative modes of transportation.

- Bicycle Commute Programs
- Bike Pro: Bicycle education should be offered for different age groups and ability levels.
- Public Health Fairs
- Walking School Bus Leader Training
- Walk Safe Bike Safe

Community Sponsored Programs are intent on creating awareness and support of alternative modes of transport within the community. Community Sponsored Programs work to establish learned behaviors within the community. The behaviors teach participants how to use the alternative systems and work to develop confidence in that use.

- Free bus to work day
- Run/Walk/Bike 5k's
- Way to Go to Work
- National Trail Day Participation

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- World Car-Free Day
- Bike, Walk and Wheel to Work Week: National movement which encourages participants to give up their car for a week.
- Walk a Mile with the Mayor: This program encourages citizens to join the mayor one day a week on a walk where they are encouraged to discuss whatever issues are on their mind.
- Beautify the Katy Trail Day: Participants may be rewarded for their sustainable behavior with refurbished bicycles, trees and or gift certificates to local stores. To further ensure rejuvenation, continued success and ownership a Greenway committees may be formed. Greenway committees and similar groups are key in networking, communication and creating local support.

## Phasing

Even though each layer and component of the proposal is designed to work in conjunction with the other pieces to create a unified, efficient whole, the system must be built up individually one component at a time. Further into the book, we have outlined a detailed phasing plan with an anticipated completion potentially spanning 30 years or more. It is essential to understand that phasing is a component of the planning process

which should be both preliminary and flexible. Early in the phasing process long-term and short-term goals should be identified that are representative of the goals of the community. Initial construction process ‘home run’ projects may be identified in order to gain public support and help to build momentum. These projects should be of a high priority which have a large initial impact on the community’s perception of trails.

## Implementation Strategies:

With the preparation of this SMART 2040 document the first step in the community’s visioning process comes to an end. The community process used to develop this document 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 Sedalia will confront as it grows and changes. With the dissemination of this document, the second phase of the process begins; the creation of the community’s vision for the future on Sedalia. SMART 2040 is not ‘the community’s 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 SMART 2040 document. This will help to develop a broader community understanding, consensus and ‘ownership’ of the project.

Issue: Review, Modify and Affirm

Guideline: Upon receipt of the SMART 2040 document, the advisory committee and city officials should formulate a community process for the systematic review of the Issues, guidelines and visions presented herein.

Guideline: After the community review the advisory committee the city officials should modify or affirm the SMART 2040 document’s long term vision to fit the consensus of those involved.

Issue: City Council Resolution

Guideline: The advisory committee should prepare a resolution outlining the community’s SMART 2040 vision and the principles that will guide its implementation. This resolution should be presented to the Sedalia City Council for ratification.

**Issue:** Respect the Vision's Principles and Guidelines

**Guideline:** The SMART 2040 document outlines the principles and guidelines for the consideration of future city goals and objectives related to the evolution of the city. As long as the principles and guidelines that have been ratified and are respected, then the incremental implementation of the vision will remain cohesive and allow for a flexible response to future opportunities and circumstances.

**Issue:** Review, Modification and Reaffirmation Every Five Years

**Guideline:** To keep the vision fresh and relevant, we recommend that as part of the resolution presented to the City of Sedalia it states that the city is charged with orchestrating a community review of the vision's implementation at least every five years. The purpose of this review is to either modify or reaffirm the community's visioning principles and guidelines.

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## Introduction to Visions

The following pages are devoted to portraying the functionality of the SMART system as a whole, showing exactly how various user groups may access and utilize the system. All these routes are typical, everyday scenarios that can relate to all citizens of Sedalia.

Each route is estimated to take no longer than one hour based on a 2.5 mph average walking stride and 9 mph average biking pace. An entire bus route loop should take no longer than half an hour around. Based on these estimations and the following experiential visions, the proposed SMART system can alter the lifestyle of Sedalia and promote an overall change for a more active tomorrow.

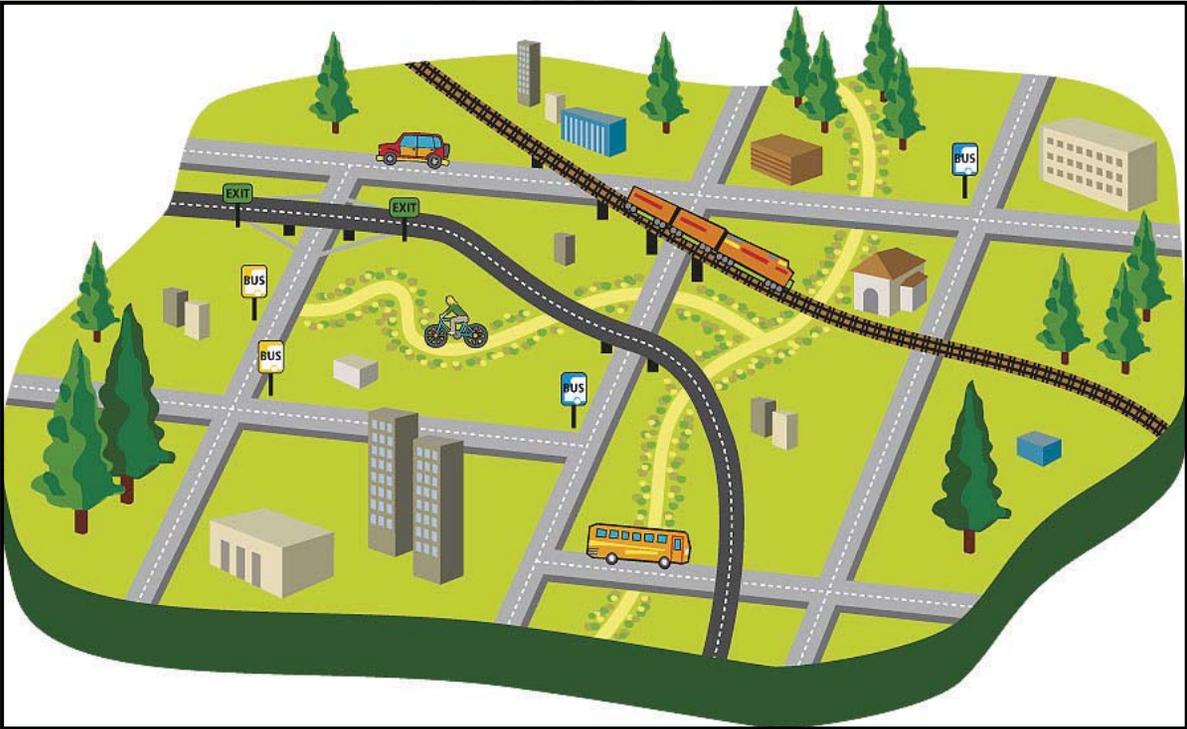


Fig. 1.1 Image of multiple modes of transportation working together as one functional system

## Vision of a Businessman

Imagine a Sedalia businessman living on Willow Drive on the Southwest edge of town. If he needs to get to Kansas City for a business meeting, the SMART system could get him there safely and efficiently. He quickly pedals down the bike lane heading North on Willow Drive. Turning East on 16th Street, he enters the linear park along Limit Avenue. He reaches the bus stop at the corner of Limit and Broadway. Within minutes the trolley pulls arrives and he straps his bicycle on and takes a short ride downtown. The business man exits the trolley at Sedalia's transportation hub at the Amtrak Station. From here he waits for the train and takes his bike with him to Kansas City, continuing his sustainable lifestyle.

Total estimated (in-city travel) time from point A to point B: 30-35 minutes

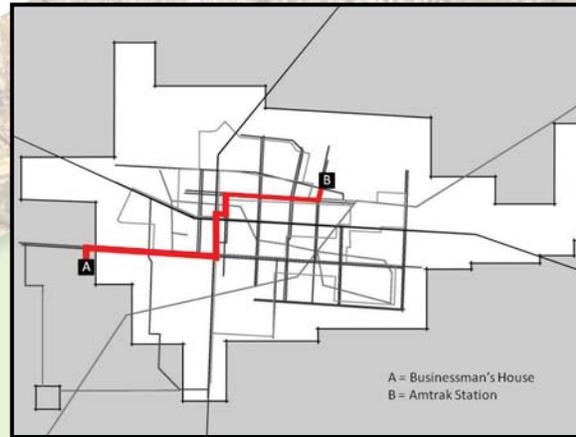


Fig. 1.2 Businessman's journey

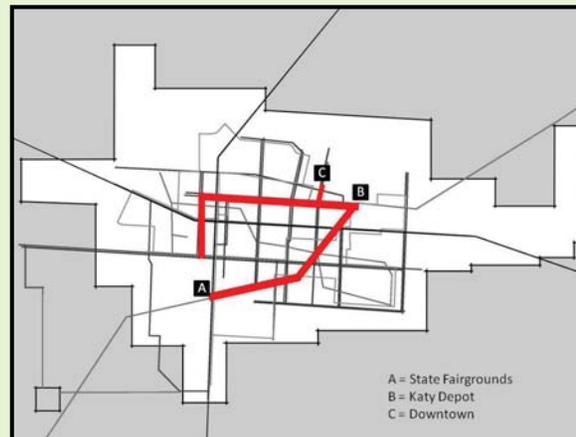


Fig. 1.3 State Fair Camper's journey

## Vision of a State Fair Camper

Imagine a tourist camping in Sedalia during the State Fair. He needs to get from the fairgrounds to the Katy Depot without a vehicle. He decides to use Sedalia's Bike 'n Ride bike rental program. For a quarter he takes a bike off the rack and follows the signs down the Katy Trail straight to the Katy Depot. After visiting the museum, he wants to discover Downtown Sedalia. He gets back on the rental bicycle and heads West on 3rd Street's bike lane to Ohio Avenue. Using the bike racks in front of the stores, he locks his bike and walks along, window shopping and peering in the unique stores. Once he finishes exploring, he hops back on the Ohio Street bike lane and continues on 3rd Street to State Fair Boulevard. From here he heads south on the State Fair Boulevard bike lane back to his camper.

Total estimated (travel) time from point A to point C: 30-40 minutes

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## Vision of a Child Going to School

Imagine a child living on 13th Street. He and his younger brother need to get from their house to Parkview Elementary School. The boys use a combination of layers in the SMART system to safely arrive at school. Using the sidewalks, they leisurely head East on 13th Street until they reach Ingram Street. Heading South on Ingram, the boys reach the new trail, an ideal solution for school children since it's pedestrian only. The boys then head Southeast until New York Avenue, leading them directly to Parkview Elementary School for a day of learning and fun.

Total estimated (travel) time from point A to point B: 20-25 minutes

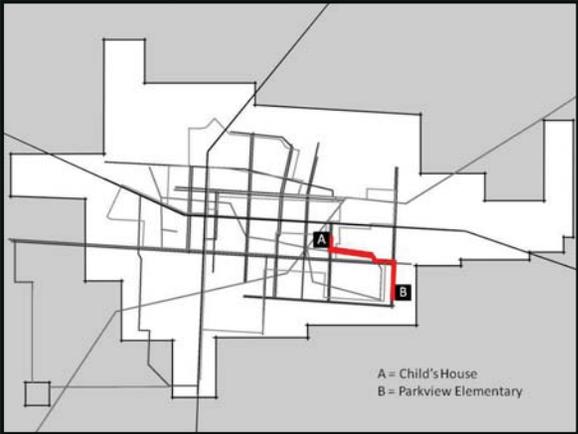


Fig. 1.4 Child's journey

## Vision of an Elderly Couple

Imagine an elderly couple on a weekday desiring to get out into the city for some exercise and shopping. They live in their house of thirty years on 24th Street. The couple desires a leisurely walk and a stop at the farmer's market. Using the sidewalks, the couple first heads west on 24th Street, then north on Ohio. They continue to 3rd Street, turning East and heading toward the Katy Depot Farmer's Market. The two enjoy the facility, leisurely looking over the fresh produce and other stands. Selecting their fresh vegetables for preparing dinner, they are ready to wander back home. They decide to take the Katy Trail this time, stopping at a rest pavilion on the way. Reaching Ohio Avenue's sidewalk, the couple head to their house in order to prepare dinner.

Total estimated (travel) time from point A to point B: 25-30 minutes



Fig. 1.5 Elderly Couple's journey

## Vision of a Young Adult

Imagine a young adult bored during the summer months. She decides to go see a movie at the Galaxy Cinema. Despite living across town at the corner of Saline Street and New York Avenue she is confident in her abilities to reach the theatre without a car. She walks South on the sidewalks of New York Avenue and turns West onto 3rd Street which she takes to the Katy Depot bus stop. Hopping on the trolley she rides to Broadway Boulevard. Once at the bus stop, a short walk on the linear park system leads to the Cinema. After the movie, she hops back on the trolley and continues the loop back to Broadway Boulevard. Once at the bus stop, a short walk on the linear park system leads to the Cinema. After the movie, she hops back on the trolley and continues the loop back to 3rd Street leading her home.

Total estimated (travel) time from point A to point B: 25-35 minutes

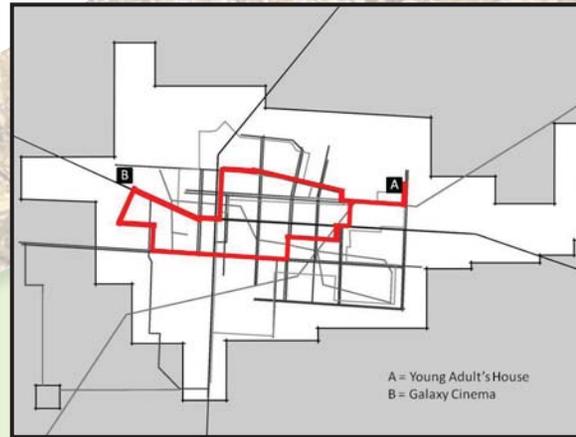


Fig. 1.6 Young Adult's journey

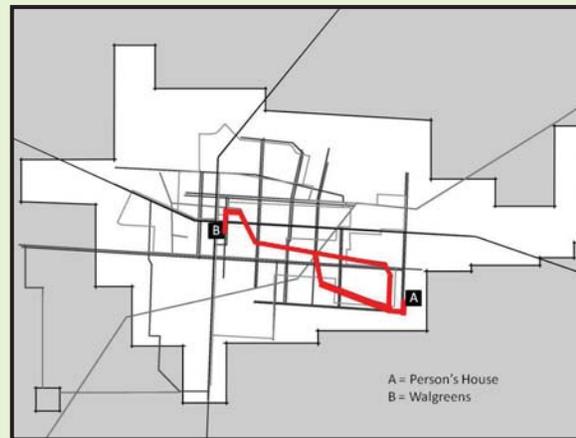


Fig. 1.7 Middle-Aged Person's journey

## Vision of a Middle-aged Person

Imagine a middle-aged person living on 22nd Street. She is wanting to get some exercise and swing by Walgreens. The lady walks on the sidewalks from 22nd Street to New York Avenue and turns West onto 24th Street until she reaches the new trail. Heading North, she meanders toward Warren Avenue. Warren Avenue leads her to Walgreens for some light shopping. She follows the same route back home, feeling very accomplished with her purchases and exercise.

Total estimated (travel) time from point A to point B: 45-55 minutes

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# Background

## History

Sedalia was originally founded by General George R. Smith in 1857. He bought approximately 500 acres believing the prairie land would be a good place for a railroad terminus. In 1859 the Missouri Pacific Railroad opened a depot and the city started to develop. It wasn't until the railroad established a passenger stop in 1861, however, that the city started to establish infrastructure such as schools, churches, and a post office. Later in the 1860's, Sedalia gained the county seat and secured a charter which declared Sedalia an official government municipality. The rest of the 1800's proved to be a great period of expansion and growth with the addition of phone services, streetlights, automobiles, paved streets, a library and the State Fair.

The early 1900's Sedalia started to take on a reputation for being wild with government corruption, gambling, saloons and frequent fighting. This reputation could be partly contributed to Sedalia's growing social and economical divisions. Sedalia experienced a weakening and depletion of the middle-class during this period of growth.

## Population

Sedalia has experienced several population booms in its history. Sedalia's first population boom was in response to the railroad industry in from 1870's to the 1920's. Sedalia again grew rapidly in the 1950's and 60's partly due to the expansion of the Whiteman Air Force Base. Sedalia's most current growth period was during 1990's and early 2000's. This could be credited to an increase of industry such as Tyson Foods, established in Sedalia in 1993, currently employing over 1600 people.

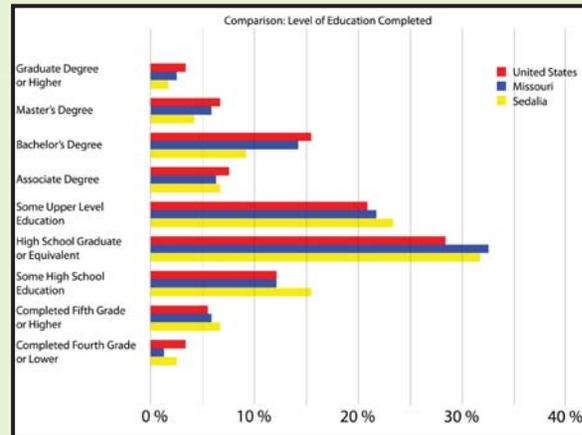


Fig. 1.8 Levels of education completed in sedalia

## Race

Sedalia has historically remained predominately Caucasian. In the 1990 census, Sedalia had a population of almost 94% White compared to the US average of 80 % White. The 2000 census revealed that Sedalia's Hispanic population grew from 1% to 5.6%

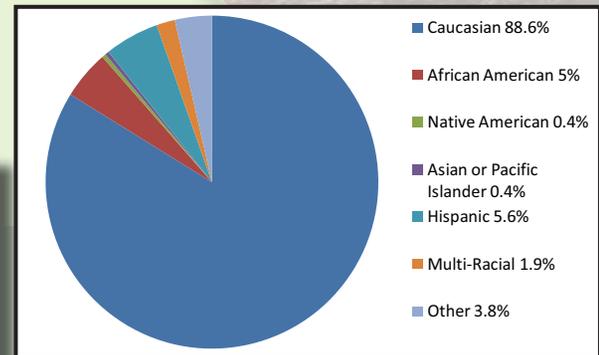


Fig. 1.9 Proportions of ethnicity in Sedalia

## Education and Schools

Sedalia averages similar statistics with Missouri and the rest of the United States according to educational achievement standards. In the 2000 census most of the citizens of Sedalia 25 years or older had a high school education or equivalent. Sedalia ranks slightly higher with

higher with the amount of people graduating high school but slightly lower on the amount of citizens with higher education.

Educational Attainment	Male	Female
High School Diploma	30%	33.70%
Some College, No Degree	25%	22.20%
Associate's Degree	4.80%	6%
Bachelor's Degree or Higher	15.50%	13.60%

Fig. 1.10 Educational attainment in Sedalia

Sedalia's public school system is comprised of nine schools spread throughout the city. These include Pettis County Early Childhood Cooperative, five elementary schools (Heber Hunt, Horace Mann, Parkview, Skyline, and Washington), Sedalia Middle School, Smith-Cotton High School, and Whittier Alternative High School. The new high school is currently



Fig. 1.11 Schools

being erected on the southwest corner of town. Sedalia also contains several private school spread in and around the Sedalia area.

## Parks

Sedalia has an active parks and recreation department that maintains eight different parks. The Parks and Recreational Department organizes and plans events for all times of the year. These parks are spread throughout the city making activities available for all of Sedalia's citizens. The newest addition to the park system is Clover Dell Park. This park is located to the Southwest of Sedalia and outside the current city limits. It is located on the Katy Trail and is the most used Sedalia park. Soccer, fishing, and multiple other activities integral to the community occur at this location.



Fig. 1.12 Parks

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## Context

Sedalia is located in the center of Missouri. It sits on Highway 50 which connects Missouri's two largest cities: St. Louis and Kansas City. Highway 65 bisects Highway 50 at the heart of Sedalia and connects it to Southwest Missouri. Sedalia is located next to Whiteman Air Force base which draws a large amount of commuter families who live in Sedalia but work on the base. Between Kansas City and Sedalia lies Warrensburg which is the home of Central Missouri State University. Truman Lake and the Lake of the Ozarks are located to the South of Sedalia. This brings a big increase of 'lake traffic' during the Summer months from Kansas City. Down Highway 50 to the west is Jefferson City, the State Capitol.

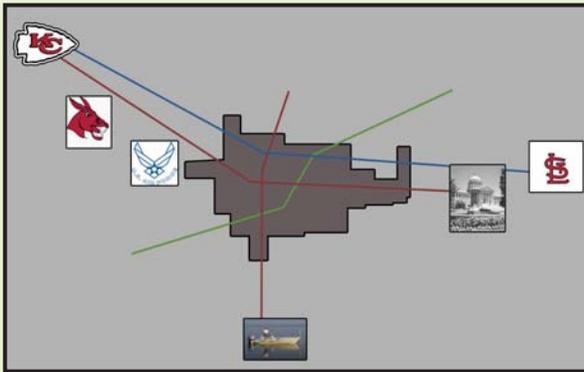


Fig. 1.13 Surrounding points of interest

## Transportation

Transportation through Sedalia can be divided into three different types; automobile, railroad, and bicycle. In the red is the two major highways that cross through Sedalia: Highway 50 and Highway 65. Green labels the Katy Trail. The Katy Trail runs 270 miles from St. Charles to Clinton, Missouri. The Katy Trail brings a large number of visitors to the city and through the city every year. Blue marks the Amtrak line. The Amtrak runs from Kansas City to Chicago.

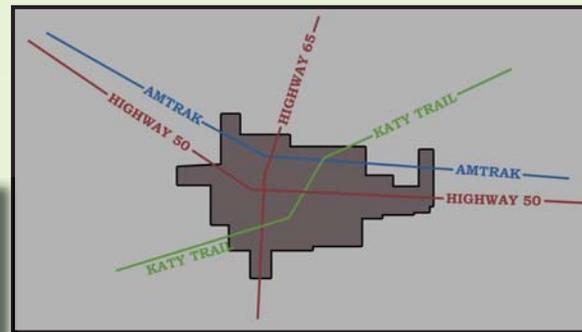


Fig. 1.14 Types of transportation

## Katy Trail

The Katy Trail is a 225 mile pedestrian path that runs from St. Charles near St. Louis to Clinton. It runs along the corridor of the former Missouri-Kansas-Texas railroad and a section of it follows the Missouri river. It is intended

for the use of bicycle and foot traffic except occasional sections such as the equestrian trail West of Sedalia. Sedalia is located at the 227 mile marker 35 miles from the West end of the Trail. The Katy Trail cuts diagonal through the center of Sedalia bringing along with it visitors and tourists. Businesses can acquire additional income by servicing visitors on the Katy Trail. However these services are seasonal and are usually opened during the more busy Spring, Summer and Fall months. Currently the only disconnected section of the Katy Trail is located in a several block area in Sedalia. The Missouri Department of Natural Resources has recently received an additional

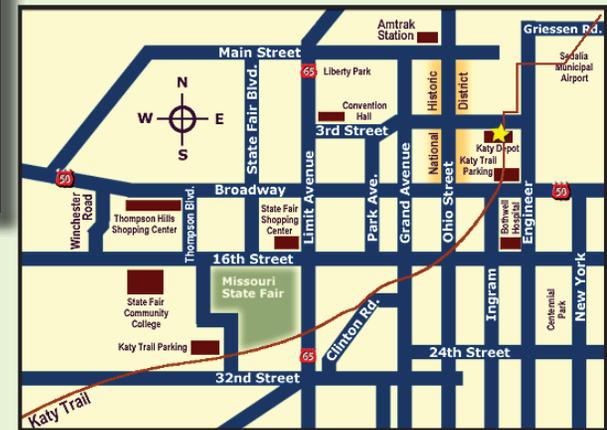


Fig. 1.15 The Katy Trail as it goes through Sedalia

47 miles to connect the Katy Trail to the outside of Kansas City. This connection could create additional pressures for Sedalia to make improvements and better unite their section of the Katy Trail. Future plans of the Katy Trail are to connect it to downtown Kansas City and St. Louis.

### Amtrak

The Amtrak connects downtown Sedalia to Kansas City, St. Louis and Chicago. The Amtrak currently has limited room but will transport bicycles at the request of its passengers.



Fig. 1.16 Amtrak Train

### Automobile Traffic

Automobile traffic in Sedalia is laid out along a grid with two major Highways crossing in the middle, Highway's 50 and 65. Highway 50 runs East-West and connects St. Louis with Kansas City and Highway 65 runs North-South and connects Southwest Missouri with Interstate 70. Most major commercial develop in Sedalia's recent history is in response to these Highways. Businesses have pensioned themselves for easy access for the automobile. Highway 50 & Highway 65 also work as the main arteries that move people across the city. These Highways also start to create barriers for pedestrians and divide the city into four quadrants.

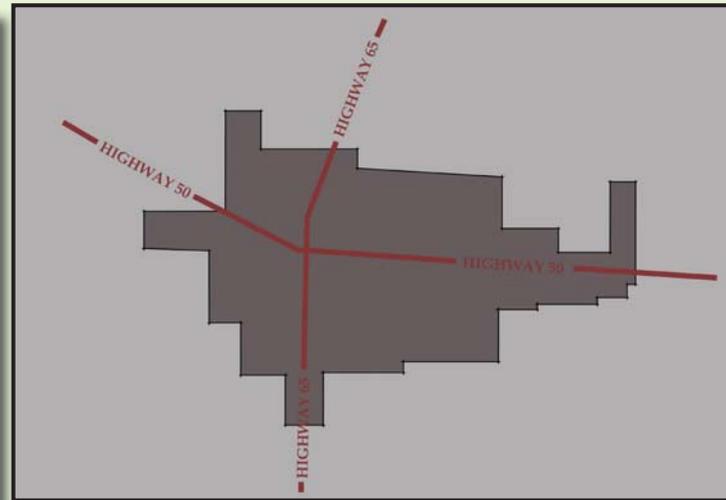


Fig. 1.17 Highway 50 & 65

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# Background

## East West Divide

Sedalia has been socially and economically divided for many years. Ohio Street serves as the dividing line that splits the city into East and West sections.



Fig. 1.18 The East West Socio-Economic Divide

## Recent Development

Recent development in Sedalia has been primarily located in the West and Southwest sections of town. Commercial development has occurred in this area along Highways 65 and 50. The addition of Clover Dell Park and the construction of the new High School on the outskirts of town have spurred costly development in this region.



Fig. 1.19 Sprawling Suburbs continue to press the city for resources and infrastructure expansion

## State Fair

For eleven days each August, Sedalia hosts the Missouri State Fair. During this period the State Fairgrounds are transformed into a miniature city. This city becomes home to nearly 379,000 visitors. The State Fair hosts events such as concerts, animals judging, homemade crafts shows, and many food stands. During the other 354 days when the state fair is out of season the fairgrounds remains an active place hosting a variety of events all year round.



Fig. 1.20 The State Fair is a Sedalia tradition and contributes to the distinct identity of the city



Fig. 1.21 Nearly 379,000 people flock to the Fairgrounds each year.

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## Climate

Sedalia's sun angle at noon is 85 degrees to the South during the Summer and in the Winter it is 65 degrees. These angles can be helpful when choosing an orientation for a building. To take full advantage of these angles a building should be rectangular with its long side facing the South. A South facing facade with overhangs better utilizes the sun for natural day lighting and heating in the Winter. The overhangs also block the unwanted heat gain from direct sunlight in the Summer.

Hottest Month: August

Maximum Average: 87.4 degrees Fahrenheit

Coldest Month: January

Minimum Average: 17.5 degrees Fahrenheit

Most Snowfall: January

Jan. Average Amount: 4.2 inches.

Annual Average Amount: 11.6 inches.

Most Precipitation: May

Average Amount: 5.32 inches

Annual Average Amount: 42.06 inches

Prevailing Wind Direction: S-SW

Mean Annual Wind Speed: 9 mph

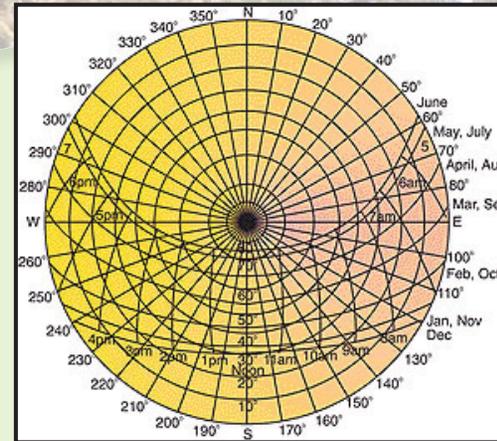


Fig. 1.22 A diagram showing the different sun angles in Sedalia

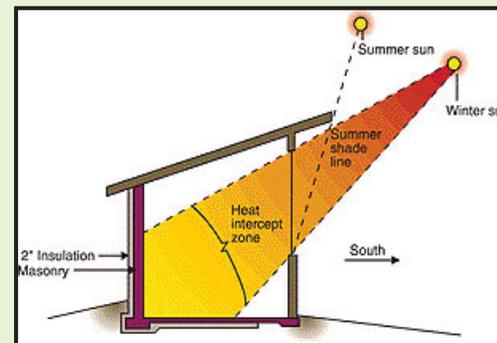


Fig. 1.23 A diagram showing how overhangs can benefit building design

## Precedent Studies

### Columbia, MO Active Living

The city of Columbia, Missouri was studied because it has several attributes in which the community of Sedalia has expressed interest. Some programs the city of Columbia practices are Safe Routes to School (SRTS), Ways to Go to Work (WTGTW), and Bike, Walk, Wheel to Work (BWWW). The people of Columbia realized that anyone can construct a trail, but in order to get people to actually use it you must introduce programs and activities that create interest in and incentive to use the trail.

Another aspect of Columbia, Missouri, that is beneficial for this project is the introduction of recreational education programs. Another program is 'Bike Pro,' a 4-lesson bicycle proficiency program available for children aged 10-14. The lessons are each two hours long and cover elements such as balance and control, scanning and signaling, road positioning and turning, hazard avoidance and emergency stopping, and the basic rules of the road. One final program Columbia offers is the 'Earn a Bike,' a program centered around teaching bicycle safety to children with the incentive of earning a bike upon completion of the course.

Another successful element of Columbia's system is that they have involved city officials and media. By getting these groups involved in the programs they are able to influence the rest of the community. The mayor actually sold the walkable city idea to the Columbia Daily Tribune which resulted in overwhelming public support. The city has introduced several policies to transform the city into a much more walkable city. They have increased the number and size of their sidewalks and have decreased the road widths. Columbia has also added bike lanes throughout the city.



Fig. 2.3 Walking School Bus

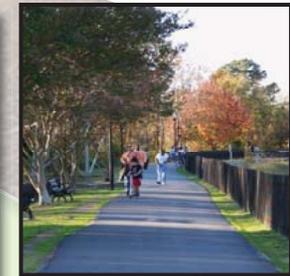


Fig. 2.4 A successful trail



Fig. 2.1 A natural trail in Columbia, MO



Fig. 2.2 An educational bike program

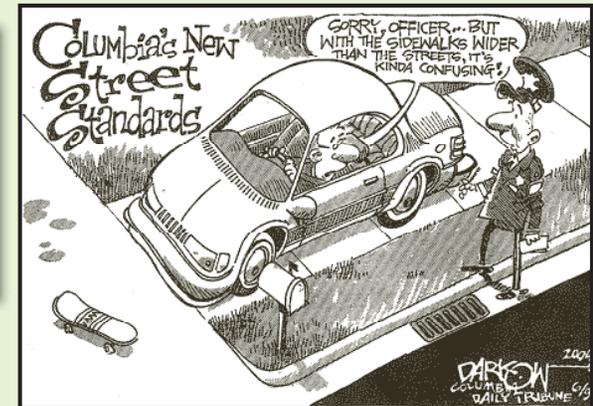


Fig. 2.5 Cartoon encouraging Columbia's new systems of transportation

## Portland, OR Smart Growth

The city of Portland, Oregon incorporates sidewalks, bicycle lanes, crosswalks, wide shoulders, special bus lanes, bus pullouts, raised crosswalks and audible pedestrian signals. This wide variety of options allows for multi-use access by pedestrians, bicyclists, and bus riders. The system can be used by multiple age groups and all abilities. This allows for an integrated and connected network.



Fig. 2.6 A streetscape in Portland, Oregon

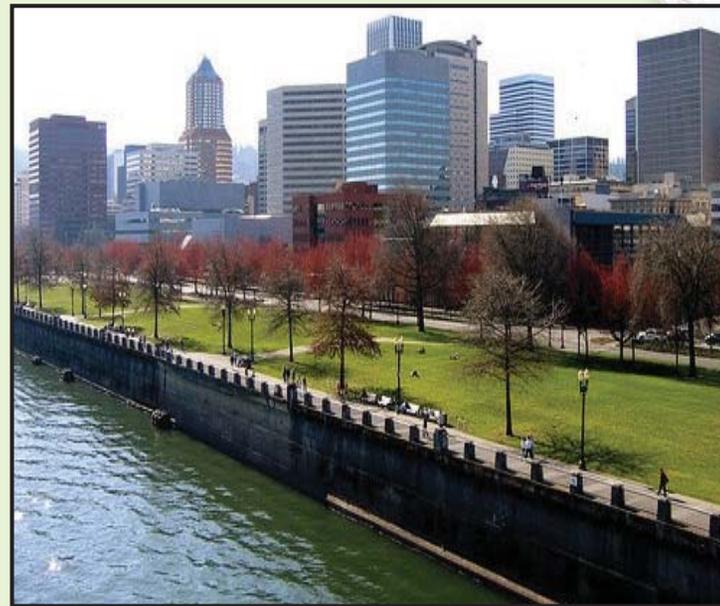


Fig. 2.9 Riverside trails



Fig. 2.7 Portland's downtown



Fig. 2.8 Different modes of transportation intermingling

## Precedent Studies

### Indianapolis, IN Livable City

The city of Indianapolis, Indiana was studied mainly because of its successful system of trails. Their trail system emphasizes strong neighborhoods, walkability, a network of attractive public spaces, affordable neighborhoods, and connection to the surrounding regions.

There are several elements that make Indianapolis' trail system successful. Streetscapes designed next to urban housing push the trend more towards non-vehicular travel, and the trails help reunite the city by connecting neighborhoods.

This urban greenway is perhaps one of the busiest in the nation. Thousands of visitors are logged every day especially during warm weather evenings and weekends when users are nearly shoulder-to-shoulder. Asphalt makes it possible for a variety of activities including walking, biking, roller-skating, and pushing strollers or wheelchairs. Asphalt also allows for quicker recovery from storms (clears off ice and snow faster) than a gravel trail because it can heat up faster and be graded.

Parks create central hubs along the trails. They enable trail users to get off the trail and relax or engage in another activity before returning to the trail. The introduction of art along the path creates a more pleasant and unique experience.



Fig. 2.10 Bike Lane in front of residential apartments



Fig. 2.11 Trail cutting through park



Fig. 2.12 Waterfront trail system



Fig. 2.13 Waterfront trail system



Fig. 2.14 The Monon Trail, offering various experiences with constantly changing views and surroundings

The Monon Trail connects the commercial districts, schools, parks, state fairgrounds, and multiple residential neighborhoods. It also directly connects three different trails creating a network covering the entire city. The downtown urban bike and pedestrian path connects neighborhoods, cultural districts, and entertainment venues, and also serves as the downtown hub for the entire central Indiana greenway system. This system consists of extra wide sidewalks conducive to urban exploration. The trails span fifteen miles, covering a fascinating variety of surroundings, offering plenty of tourist-oriented trailside services.

The trail also offers direct entry to the Indiana State Fairgrounds and direct connection to the downtown area via the Monon. The fair offers an incentive for riding your bike to the fairgrounds called “Pedal & Park,” giving riders a dollar off fair admission and free bike parking.



Fig. 2.15 A multiuse trail accommodating many users, safely and efficiently



Fig. 2.16 An example of an Asphalt multi-weather trail.



Fig. 2.17 Signs easily identify where trails are located.

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 PORTLAND, OR  
 INDIANAPOLIS, IN  
 SPRINGFIELD, MO  
 VENICE, ITALY  
 PIQUA, OH  
 SEATTLE, WA

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## Precedent Studies

### Springfield, MO

#### Greenways

The city of Springfield, Missouri was examined for their ability to acquire land for their trail system. By opening a drainage tunnel, Springfield was able to create a linear park and increase the flood zone which reduced flooding downstream. The opened drainage tunnel was previously a boxed-in tunnel that spanned five blocks. The drainage was opened and is now used as a trail.

Springfield also purchased unused rails to help connect parks. They took advantage of abandoned secondary railways that formerly connected factories to the main lines. The abandoned rails were on property owned by the factories that have since been remodeled for alternative uses. These lines were easier to gain access to than lines owned by the railroad.

By widening the flood plain to accommodate trails and parks, Springfield found they could better control flooding. Redesigning the flood zones helped control flooding and allowed for space to incorporate a trail. The trail is placed in the 10-15 year flood zone.



Fig. 2.18 Path utilizing space next to the drainage ditch



Fig. 2.19 Old rail line utilized for pathway



Fig. 2.20 Founders Park along the Greenway Path



Fig. 2.21 Path running under rail line

In Springfield, the trails are used for more than just movement, they become a destination. Trails around downtown provide people with a safe and inviting transportation option besides the automobile.

At some points the trails widen and function as an integrated system. In downtown Springfield, for example, the trails have been expanded to include an outdoor movie theater, a water feature and a stage for live performances. At Founders Park, there is a 250-seat outdoor movie theater wired for sound and lighting. There is also a historical timeline describing Springfield's first 100 years of history. Jordan Valley Park also houses a water feature for kids to play in that doubles as a stage for live performances. These nodes are great in helping expand awareness for the trails and encourage interaction from more people.



Fig. 2.22 A trail through a downtown pocket park with way-finding signage in Springfield, MO

Galloway Creek is the beginning of Springfield's greenways. They looked for places with a variety of entities available for easy connection. This trail connects a school, church, neighborhood, nature center, Springfield Lake, and the smaller community of Galloway.



Fig. 2.23 A gathering area



Fig. 2.24 Good seating and lighting in a park



Fig. 2.25 Night view of Jordan Valley Park, Springfield's downtown pocket park

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## Precedent Studies

### Venice, Italy

#### Transportation

Although it may seem completely unrelated, Venice, Italy is actually fairly similar to the 'ideal' Sedalia should strive to become. The city predominantly has pedestrian traffic and the systems of movement work well together, creating a very successful public transportation system.

Visitors enter the city either by train or by vehicle. This is easily comparable to Sedalia in its current state: visitors enter by either vehicle or Amtrak.

The public transportation system of Venice operates off the Grand Canal, a waterway cutting directly through the city. A system of water taxis, water buses, and gondolas operate on a daily basis through the canal. They operate on a very efficient time schedule. It is a very successful

means of transportation. The canal can be compared to the Katy Trail in Sedalia.

Pedestrian paths spoke off the Grand Canal and make their way into the city, promoting the main mode of transportation as walking. These paths lead to all major areas in Venice. Sedalia could utilize this type of system by designing a system of paths and trails spoking off the Katy Trail and leading to important centers within the community.

The pedestrian paths in Venice often lead to 'campos,' large open spaces bordered by residences. They incorporate touches of green and often house water features, cafes, and public seating areas. This type of installation could be utilized in Sedalia in the form of neighborhood centers and parks.



Fig. 2.26 Campo in Venice, Italy



Fig. 2.27 Grand Canal stops



Fig. 2.28 Venice entry modes



Fig. 2.29 Grand Canal as main artery through Venice



Fig. 2.30 Katy Trail as the main artery through Sedalia

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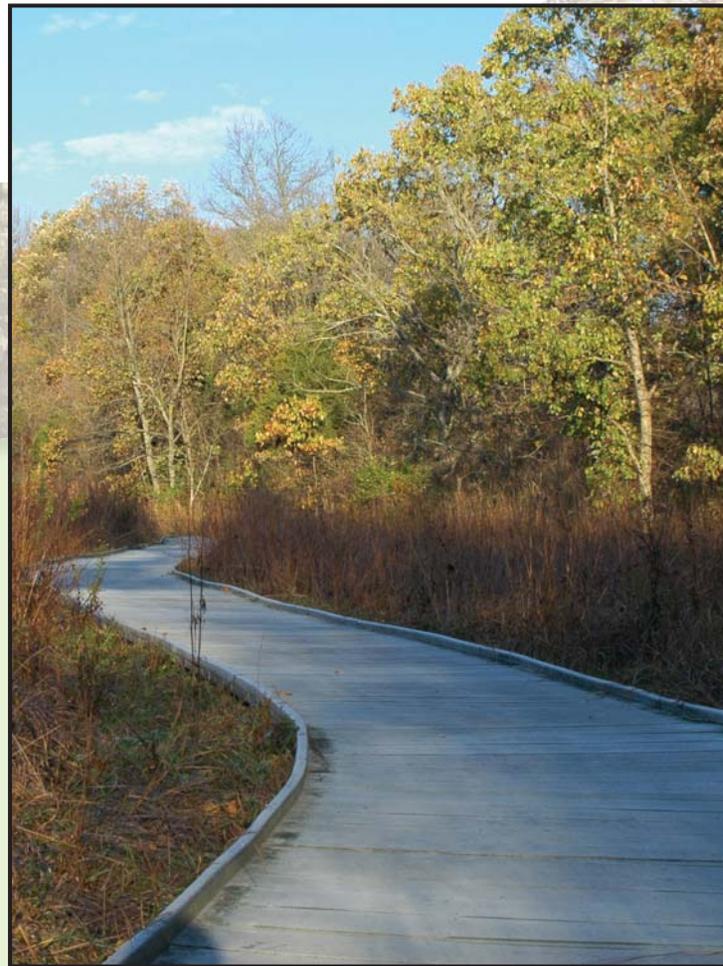


Fig. 2.31 Natural park in Piqua

## Piqua, OH Transportation

The city of Piqua, Ohio was studied because of its successful system of parks, trails, and linear parks running throughout the city. Piqua is comparable in population to Sedalia with roughly 20,000 citizens.

There are 17 parks in Piqua, totaling about 163 acres of land. The city offers a variety of parks including playgrounds, natural parks and memorial parks.

The trail and linear park system runs parallel to the water and offers natural trails that often run through town along with traffic. This system links the park system together and loops around a very large portion of the town.



Fig. 2.32 View of Piqua park



Fig. 2.34 Bridge in Piqua park



Fig. 2.33 Riverside trail

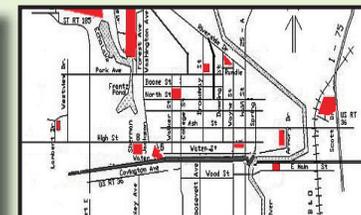


Fig. 2.35 Piqua, Ohio

## Precedent Studies

### Seattle, Washington Art Installations

The Olympic Sculpture Park in Seattle, Washington was studied because it provides an option within the hustle and bustle of a city. The park was designed by Weiss Manfredi Architects and Charles Anderson Landscape Architects for the Seattle Art Museum in 2007. It is a nine-acre park situated on an old industrial brownfield site which is one of the only green spaces in Seattle. It is a continuous constructed landscape designed for the installation of art. This park is a node along the greenway trail and it runs along the waterfront park.

The vision for this project was to transport art outside the museum walls and create a landscaped park for the city. This new topography offers environmentally diverse settings for viewing art and the city of Seattle. The design grew out of a desire to embrace the city's energy and create collaboration between art, landscape, and architecture. The architects transformed three separate sites, creating an unfolding landform sculpted to rise over the existing road and trainlines.

The design team faced many challenges such as negotiating a 40 foot grade change, crossing a busy street, and crossing an active railway. To properly negotiate these obstacles, the architects created a 'Z' shaped, 2,200 foot path that directs pedestrians past carefully positioned works of art.

These art pieces are constantly being rotated out and rearranged within the park. The 'Z' shape connects three parcels into a series of four distinct landscapes. This design afforded a wide range of environmental restoration processes, including brownfield redevelopment, salmon habitat restoration, native planting design, and sustainable design strategies. The site has an amphitheater positioned as a gateway into the park.



Fig. 2.36 Sculptural element that engages movement and interacts with sunlight effectively activates space



Fig. 2.37 This rest area exhibits a strong relationship to pedestrian paths without being obtrusive



Fig. 2.38 A plane perpendicular to a path designates an entrance to the sculptural park



Fig. 2.39 Bridge interacting with trail system



Fig. 2.41 Greenspace in downtown area



Fig. 2.42 Art installations should be added



Fig. 2.40 Elevation changes and sculptural feature make a unique and interesting space to occupy and explore



Fig. 2.43 Lighting features should be incorporated

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## Precedent Studies

### Parallax written by Steven Holl

This resource has been infinitely valuable as a continuing studies reference text. Steven Holl examines perception as the connection between architecture and humans.

Although not specifically geared toward trails, it certainly applies to and informed our intentions regarding the overall experience of the built environment. Perhaps central to the arguments outlined in the reading is the powerful assertion that, "If we allow magazine photos or screen images to replace experience, our ability to perceive architecture will diminish so greatly that it will become impossible to comprehend it." Spatial understandings that are core to the comprehension of architecture directly relate to the outdoor experiences that the SMART system strives to achieve. In other words, Holl's argument for an emphasis on physical experience rather than a technologically based lifestyle aligns completely with the experience of a walkable Sedalia that we strive to create.

The following images (Fig. 3.1, 3.2, 3.3) are photos that capture beauty of the natural environment.



Fig. 3.1



Fig. 3.2



Fig. 3.3

The natural environment provides infinite possibilities for creating a unique experience, the experience of the Katy Trail should capture and express these possibilities



Fig. 3.4 Morning



Fig. 3.5 Midday



Fig. 3.6 Afternoon

### Art Installation by Andy Goldsworthy

This art installation in Charente, France, examines how the movement of the sun effects the environment. The installation is composed of chestnut logs arranged with a circle in the center that faces perpendicular to its surrounding square. As the sun moves throughout the day, the two oppose and harmonize as they catch the sun differently.

One practical application for this art installation is makes the experience of the Katy Trail memorable and distinctly different depending on when you use the trail. The logs can help to denote specific times of day and differentiate between experiences. Installations like this help to create an ever-changing environment and experience of the Katy Trail.

If installed along the Katy Trail then it would become a place that is only reachable by foot, bike or wheelchair and therefore would become an experience to be enjoyed only if one leaves their car. This encounter is one that helps to make individuals aware of their surroundings and raise consciousness. This experience becomes one that is shared by the community and can help to create a unique identity.

## Conceptual Exploration:

In order to develop unique solutions to a regularized problem we performed the following self-imposed exercise. We began by identifying three conceptual goals which we felt addressed issues of urbanism that affect all communities. The conceptual issues were not limited in any shape or fashion, especially in feasibility. The purpose of this exercise was not to utilize the three idealistic goals to achieve their purpose, rather to imagine the qualities and characteristics these conceptual realities would possess and strive to achieve these qualities.

To explain this process we have developed a diagram which displays the three conceptual ideas along a spectrum. Each concept is presented in a polarized form; at one end is an idealistic goal. On the other end of the spectrum lies the polar opposite, a more extreme version of contemporary life. It is important to reiterate that we are not proposing that Sedalia move to one extreme or the other, rather observe the qualities that such alternative lifestyles might possess and strive to achieve those that the community judges to be viable.

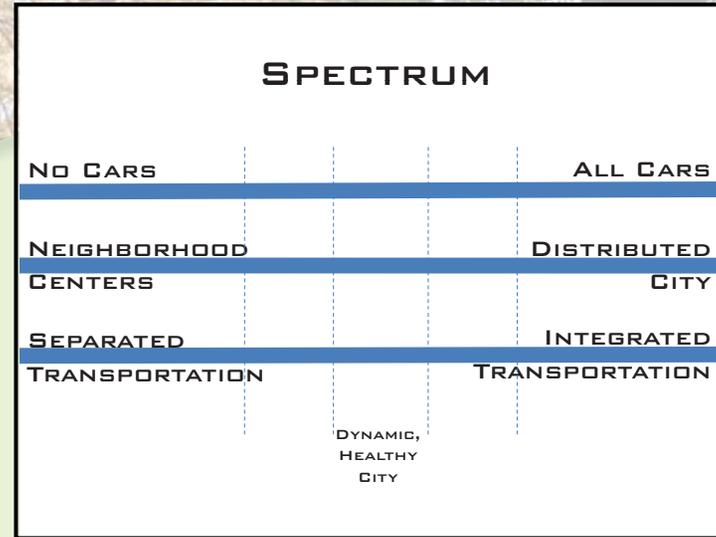


Fig. 3.7 Three levels of conceptual ideas presented to Sedalia

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# Conceptual Exercise

## Walkable City

The first of these three conceptual exercises explores notion of a city without vehicles. The concept itself is not impossible to imagine. A few short decades ago mankind did not enjoy the luxuries of the automobile. What was life like? Was it better? Was it worse?

The following is an examination of the qualities of a city without vehicular travel. After each quality are some direct applications for the future development of Sedalia.

- Quality:** Prettier, Cleaner Air, Water and City
  - Benefit:** The natural landscape is restored and preserved better because of the lower impact that humans have on their environment.
  - Application:** Shut off a street in downtown in order to achieve a more beautiful streetscape.
- Benefit:** Visual relief from vehicular traffic
  - Application:** Include buffer zones of greenery between sidewalks and the street in order to replace the view of asphalt and aluminum with vegetation.

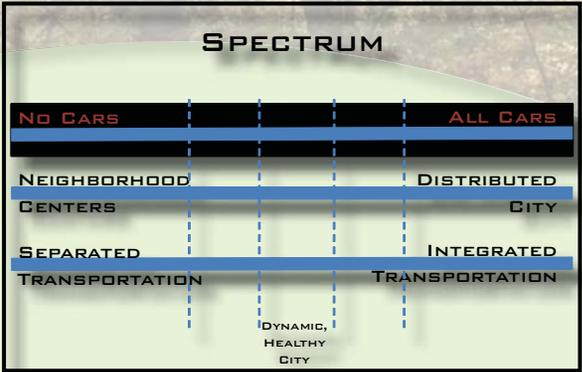


Fig. 3.8 Spectrum of the degrees of vehicle dependence.

- Quality:** Quieter
  - Benefit:** Improve quality of life through improved audio footprint.
  - Benefit:** Improved awareness of environment and surroundings.
- Quality:** More Greenspace, Less Asphalt
  - Benefit:** Elimination of Heat Island Effect

- Benefit:** Reduced stormwater runoff resulting in less erosion, increased plant filtration and subsequently reduced pollution.
- Application:** Require all new construction involving newly paved surfaces to install pervious concrete or other pervious technologies.
- Quality:** Safety, reduction in transportation accidents
  - Benefit:** Fewer Deaths
  - Application:** Examine ways to reduce automobile speed.
  - Benefit:** Increased Quality of Life
  - Benefit:** Increased Bicyclist Confidence and Participation.
  - Application:** Require Bicycle Safety Awareness classes to receive your drivers license. Prior to licensing motorist could be required, pending physical ability, to participate in a group biking program; Ride a Mile in My Pedals.

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**Quality:** Increased Sense of Community

**Benefit:** Development of Identity

**Benefit:** Increased Socialization

**Application:** Develop outdoor spaces for community interaction outside of the automobile. Spaces may include pavilions, parks and outdoor amphitheaters. Within these spaces, focus should be placed upon the outdoor occupation of space, through both transportation and use; this will encourage interaction and socialization.

**Quality:** Livability

**Benefit:** Healthier Population

**Benefit:** Increased Quality of Life

**Application:** Develop days which citizens are encouraged to leave their cars at home.

**Application:** Provide Tax Incentives for walking and / or biking.

**Application:** Regularly promote public education and awareness on the benefits of walking/biking

**Quality:** Economically Efficient

**Benefit:** More affordable lifestyle

**Application:** Market the economic benefits of Mass Transportation to encourage citizens to utilize public transportation.



Fig. 3.9 A downtown street now for pedestrian traffic only.



Fig. 3.10 Katy Trail intersection



Fig. 3.11 Bird's eye view of Katy Park in Sedalia

# Conceptual Exercise

**Applications:**

The following is a summary of some more specific applications that are a resultant of this conceptual exercise.

**Streetscapes:**

If automobiles were no longer using the streets, a new infrastructure full of possibilities would become available for pedestrian and bicycle traffic, thus making streetscape design an integral element. Instead of completely eliminating automobiles, a few streets could be dedicated to automobile traffic. On the closed streets, one side could be specifically for bicycle traffic while the other side addresses pedestrian traffic only. This option would allow cyclists to travel at higher speeds while providing pedestrians a safer zone. Simple dividers (planters, trees, lighting, sculpture, and seating) can be placed in the center of the street for safety and aesthetics. Streetscapes focus on landscaping, encouraging interaction off



Fig. 3.12 Streetscape aerial view with vending & gardens  
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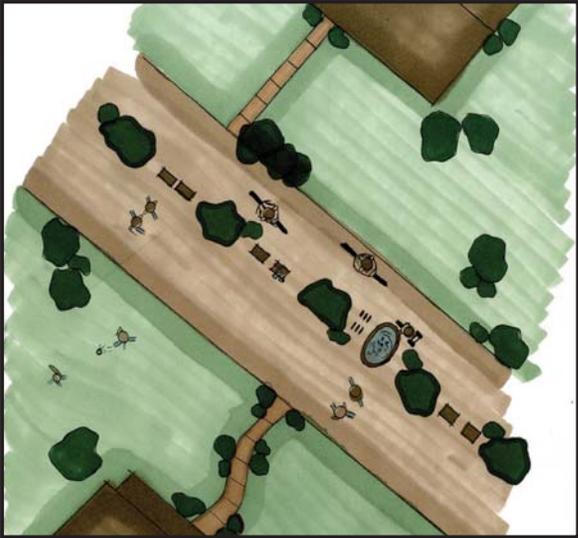


Fig. 3.13 Aerial streetscape option with bike and pedestrian lane

the trail by offering gardens, green spaces, and seating areas. Trees and bushes can provide privacy for those living nearby.

**Parks:**

A more walkable city encourages significantly more interaction with nature. Parks benefit and encourage this interaction, providing spaces for gathering, activities, and relaxing. Adding a larger variety of parks to Sedalia’s already successful system would enhance the communal and walkable identity. Streets closed to vehicles

can benefit from the addition of parks. A street that is no longer used for vehicular traffic could become a linear park, providing an expansive green space. These linear parks would remove hot asphalt and bring parks to the residents. Children could run safely on the streets, playing games without concerns about vehicles. A park containing various activities, such as shopping, gathering, and playing, would add character to the trail. This type of park could include small businesses, museums, alternating art shows, cafes, and other local stores. Playground equipment, benches, and open spaces are all possible elements in creating a gathering space. These park options provide a more vibrant layout for the city.



Fig. 3.14 Aerial view of a communal mixed-use park

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## Katy Trail

The Katy trail would act as a vital path for transportation throughout the city. The trail would become the major artery of transportation in the same way the major highways bisecting the city operate. Homes and businesses would start to face the Katy Trail instead of backing up to it. Instead of driving to eat out or to shop at the grocery store, you would hop on your bike or take a short walk on the trail. The trail would begin to “take you places.” The Katy Trail would become a functional piece of the city by leading to destinations. With new uses associated to the trail and an increased user population, improvements and alterations would be more plausible and necessary. In

order to accomplish these goals, several actions would need to be taken. The neighborhoods would need to be connected physically and visually. City ordinances need to be applied and reinforced throughout the city. Ordinances can shape and effect the look and feel of the trail. They might suggest certain businesses that can go in along the trail. Restaurants would have special entrances and outdoor seating addressing trail users specifically. Residences can open their back yards and side yards (alleys) to the trail. Since the Katy Trail is a park splitting through several sections of the city, it is a great chance to bring services and activities directly to the citizens of Sedalia. For example, a mobile farmers market could successfully get people to use the trail and also conveniently bring fresh produce to each area of town. Other activities encouraging trail use include 5k charity runs and trail vendors.

With all these new activities and functions, Sedalia might need to rethink the physical characteristics of the Katy Trail to support and encourage increased traffic. Sedalia should consider the materiality of the trail, the addition of lighting for additional safety and extended use, and the addition of shading. The Katy Trail also provides a great opportunity to create monumental elements along the trail, giving Sedalia a unique identity.

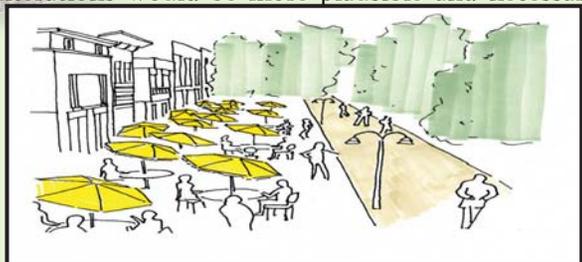


Fig. 3.15 A possible result of a city ordinance requiring that all trailside businesses create physical responses to the Katy.



Fig. 3.16 Possible Farmer's Markets locations along the Katy Trail



Fig. 3.17 Trail lighting.



Fig. 3.18 Example of a dynamic trail

# Conceptual Exercise

## A Small-Scale City

The second conceptual idea concerns itself with the physical scale of the city. Many of the concerns for which Sedalia seeks a remedy can be attributed to growth of the city, rather the way the city grows. What if the city did not grow beyond its means, but instead stayed a manageable size? What if you lived in a small city which could support itself? What if you knew everyone in your city?

**Quality:** Walkability

**Benefit:** In a small city walking is a reasonable mode of transport.

**Quality:** Identity

**Benefit:** Sense of Community  
**Application:** Work to strengthen the fabric of neighborhoods.

**Quality:** Scale

**Benefit:** The city is now at a size that is manageable for humans. It is no longer an insurmountable distance across town.  
**Benefit:** Reduces vehicle miles traveled.

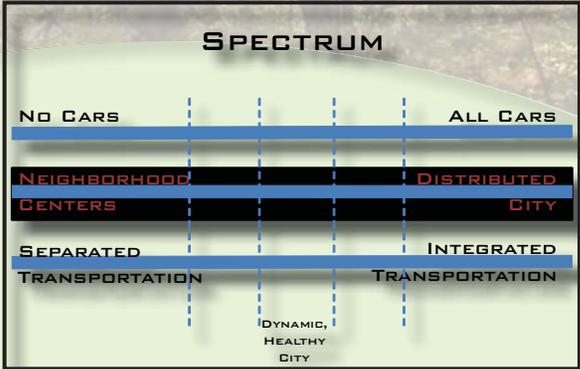


Fig. 4.19 The second conceptual ideal examines the benefits of living in a small town vs. a big city

**Quality:** Life is quieter and more peaceful in a smaller city

**Benefit:** Increased quality of life

**Benefit:** Increased appreciation/connection to the environment

**Quality:** Connection

**Benefit:** Increased community interaction and stronger relationships.

**Quality:** Strength of City

**Benefit:** Economic Independence

through small businesses.  
**Benefit:** Localized Economy

**Application:** Encourage localized shopping, eating and playing to strengthen local economy.

**Quality:** Atmosphere

**Benefit:** Hospitality

**Benefit:** Identity

**Benefit:** 'Ownership' and City pride

**Application:** Encourage expression of community identity through artwork.

**Application:** Redesign city streetscapes to make the city a more welcoming and pleasant environment.

**Quality:** Friendliness

**Benefit:** People are nicer in a small town.

**Benefit:** Reduction in crime when everyone knows everyone.

**Application:** Develop Neighborhood Watch Programs.

**Benefit:** Life is quieter and more peaceful.

**Benefit:** Improved awareness of environment and surroundings.



Fig. 3.20 Encouraging safety and family friendly environments



Fig. 3.21 Layered bicycle paths

**Quality:** Smaller Footprint

**Benefit:** Reduced stormwater runoff, carbon emissions and overall ecological footprint.

**Application:** Encourage growth in smaller communities.

**Quality:** Increased Sense of Community

**Benefit:** Development of Identity

**Benefit:** Increased Socialization

**Application:** Festivals, 5k Runs and other Community Events play an important role in bringing people together and creating both a sense of community and a common identity.



Fig. 3.22 Community-building programs and Neighborhood Districts are a large part of accomplishing a strong sense of community

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# Conceptual Exercise

## Benefits

As a result of examining smaller scale cities it becomes clear that scale is a driving factor which can directly improve many issues Sedalia wishes to resolve. The following is a response to the conceptual exercise and the development of a key concept in the proposal.

Our Society has created environments that cater specifically to the automobile. Space, signage, and distance are all scaled to the vehicle and are grossly out of proportion with the human. The highway is an extreme example with signage intended to be read at 60 mph. The area covered by the city is also representative of this imbalance of scale. By developing a new structure for the organization of a city, key values of small-scale cities can be achieved on a localized level.

Neighborhood Districts are a tool for organizing the city into smaller communities. Each community, or Neighborhood District contains the necessary components of daily life. Each neighborhood district contains a school, park, community center, and access to locally grown produce. The neighborhood districts are a component of network throughout the city, each being all inclusive and servicing those who live within.

Neighborhood Districts represent a realignment of the organization of a city. Neighborhood Districts

seek to reestablish the scale of our environments, allowing people to live within a reasonable distance of everyday goods and services. Further, they seek to make the journey within each district more welcoming, comfortable, and efficient. Neighborhood districts should provide access to everyday activities and needs. The locality of these activities makes pedestrian traffic more practical. Bike racks make parking directly in front of destinations easy.

Once citizens are able to eat, shop, work and play within a localized zone, a system dependent on other members of the local community is developed. Each member plays an integral role in supporting the Neighborhood District. This system is more stable because it encourages the growth of small businesses. With more support for local business, the local economy is more stable from threats of big business competition and job exportation. The city of Sedalia would become less dependent on outside influence and gain more control over the local economic infrastructure.

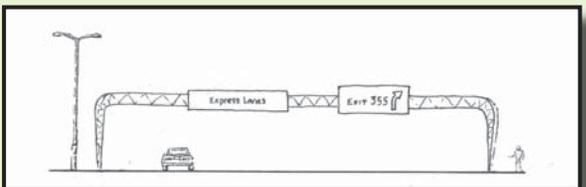


Fig. 3.23 Urban environments are often overwhelming experiences outside of a vehicle



Fig. 3.24 Neighborhood Districts seek to rescale the urban environment to better suit humanity



Fig. 3.25 An example of the built environment's lack of consideration for the human scale.

# Conceptual Exercise

## Applications

### Farmer's Market:

A mobile farmer's market creates the potential to provide the experience to all. Traveling within the city weekly, the market would allow fresh, locally grown produce to be within walking distance of most citizens' homes. Having a mobilized market creates a healthy community, supports the local economy, and helps reinforce community identity.

### Active Living:

Active Living provides the option for individuals to be physically active every day between school, work, home, and recreation. Converting Sedalia's alleys to pedestrian pathways allows unused portions of the city to become a refuge where recreation and an active lifestyle are emphasized. These alleys can open to create open green spaces for parks and community gathering areas. By using the alleys for pedestrian access, a new scale accommodating the pedestrian is introduced to Sedalia. A more personal view of Sedalia is also introduced. Creating a sidewalk grid system throughout the city promotes walking, running, and a healthier lifestyle.

### Mass Transit

With neighborhood districts mass transit becomes a more efficient and feasible option. Urban design begins to form a network permitting pedestrian travel within each district, and connecting each center to the next.



Fig. 3.26 Mobile Farmers Market



Fig. 3.27 Trails encourage an active living style



Fig. 3.28 A bike lane extends parallel alongside an urban railway

# Conceptual Exercise

## A City of Separated Transportation

The third and final conceptual exercise imagines a complete separation of each mode of transportation. By envisioning a city where each mode of transport is isolated, what can be learned about each of those systems, and more specifically, what qualities can we observe when the systems operate individually?

**Quality:** Safety.

**Benefit:** Reduce injury, accidents and death.

**Application:** Provide a significant bollard or buffer between bike lanes and the street.

**Application:** Provide a change in altitude between bicycle/pedestrian and vehicular traffic.

**Quality:** Efficiency.

**Benefit:** Reduced Traffic.

**Benefit:** With reduced responsibility each mode can begin to operate more efficiently.

**Benefit:** Maximizes use of space.

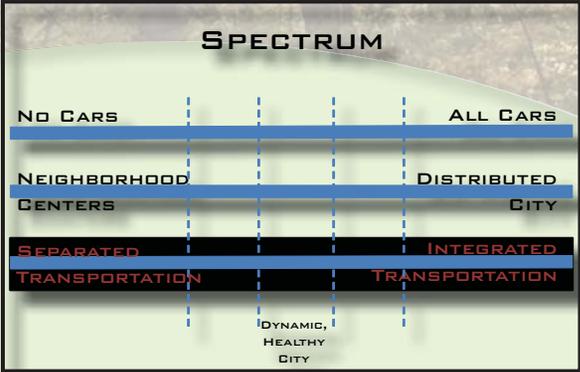


Fig. 3.29 The third conceptual exercise examines complete separation of each mode of transport.

**Quality:** Increased cyclist/pedestrian confidence

**Benefit:** Improved Experience of pedestrian

**Quality:** Increased use of multiple modes of transport

**Benefit:** Increased mix-use transport.

**Benefit:** Decrease in price for mass transit

**Benefit:** Increase in overall health

**Benefit:** Improvement of environmental responsibility.

**Quality:** Potential for iconic bridgeways and underpasses.

**Benefit:** Contributes to Identity.

**Benefit:** Contributes to Tourism.

**Quality:** Increase in amount of greenspace.

**Benefit:** Visual relief from vehicular traffic

**Benefit:** Improve views and create a more welcoming atmosphere.

**Application:** Elevated park

**Quality:** Potential for Unique Experience of extreme separatism.

**Benefit:** Contributes to Identity.

**Application:** Multiple levels of transportation stacked on top of one another

**Benefit:** Interesting spaces create an incentive to walk/bike

**Benefit:** Potential for new, unique views of the city

**Application:** Rooftop park overlooking roadways and other buildings below.



Fig. 3.30 Multiple level sculpture park in Seattle, WA



Fig. 3.32 Example of elevated walkway in Morristown, TN



Fig. 3.31 Elevated mass transit system (The 'L') in Chicago, IL



Fig. 3.33 Coal Harbour community centre in Vancouver, Canada showing rooftop park

# Conceptual Exercise

## Benefits

A system of paths located at various verticalities throughout the city would allow for different views, creating a unique experience within Sedalia. Utilizing vertical space rather than horizontal space is more efficient from an environmental standpoint. A variety of levels would emphasize a new way of experiencing the city. This would allow residents and visitors to explore the city in their own individual way. When pedestrian and bicycle traffic is emphasized through the design of an elevated or recessed system, the dependence on the automobile declines. This alone increases sustainability in Sedalia, but coupled with the addition of a linear park system and connections to the Katy Trail, the city potentially becomes primarily 'green.' A system of elevated parks has the potential create an iconic identity for Sedalia



Fig. 3.34 Separation of bicycle and pedestrian traffic



Fig. 3.35 Elevated linear parks add greenand make the city more inviting and enjoyable for pedestrians

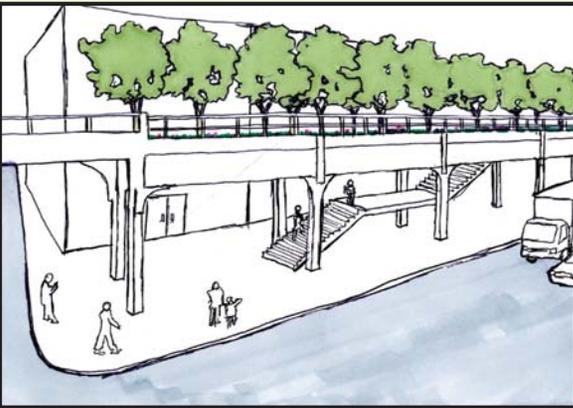


Fig. 3.36 Possible elevated linear park



Fig. 3.37 Utilizing roof space as parks and green space introduces a new way of living and identity



Fig. 3.38 Raised walkways make it safer for pedestrians to cross busy intersections

## Applications

### Parks:

This new system of raised and lowered transportation paths bring about new possibilities for parks, they can be elevated and recessed. A park can be built along an elevated path or trail for additional greenery. This begins to form an elevated linear park system. If a path is elevated to the height of an existing building, the roofs can potentially become parks connected to the elevated paths.

### Trails:

Sedalia has two major bridges along the Katy Trail for safer travel: at Highways 50 and at Highway 65. Elevated sidewalks and paths makes motorists more aware of pedestrians and bikers. When these paths cross the road, the car has to travel up over the barrier of the path. This makes vehicles feel that they are crossing the bike path instead of the bicyclist feeling like he/she is crossing the car's path. Additionally, the driver is more conscious of pedestrians/ bicyclists and slows down when crossing these paths.

### Streetscapes:

By separating the different modes of transportation (i.e. pedestrian, bicycling, vehicular, etc.) vertically there is a strong emphasis on safety and a variety of different viewpoints that could be made available. A system of raised pedestrian paths can not only pull people away from the busy vehicular traffic, but it also allows the user to be introduced to a new perspective of the city of Sedalia. This, in turn, has the potential to enhance the



Fig. 3.39 Transition between levels of traffic

overall experience of travelling through the city.

### Downtown

By lowering the cars below what is currently street level, the empty spaces and sidewalks can be converted into pocket parks and gathering spaces. A series of pedestrian/bicycle bridges connecting the sidewalks would also be beneficial. Creating three different levels of separation between cars, bicycles and pedestrians makes a safer environment for everyone.

## Recommendations

### SMART Districts

SMART Districts are an example of a Neighborhood district that is specifically designed to be implemented in Sedalia. The SMART Districts work to build a distinct, livable, and efficient community. Each district is an independent community which function as an individual entities. Each individual component works to support itself but also works in harmony and unison within the city.

SMART Districts are a continuation of the ideas put forth by Gould-Evans in their Master Planning document completed in the Summer 2008. Gould-Evans proposal suggests a shift toward living locally. SMART Districts accelerate this concept by proposing locality on the scale of walkable distances.

The current national standard for sustainable development is regulated by the Leadership in Energy and Environmental Design. In 2007, LEED officially recognized the necessity for a larger scale movement of sustainability to recreate the urban fabric of American cities. As LEED develops new guidelines for larger scale definitions of sustainability it is the objective of these SMART Districts to effectively promote a new form of urban identity. LEED Neighborhood Development strives to establish universal guidelines for more connected, walkable cities. SMART Districts are

the merely means to obtaining sustainability. They are not as easy to define as they are to exemplify; Chinatown, New York, Downtown Portland, and The Loop in Chicago are all great examples of what a functioning SMART District can be.

Neighborhood districts should adhere to

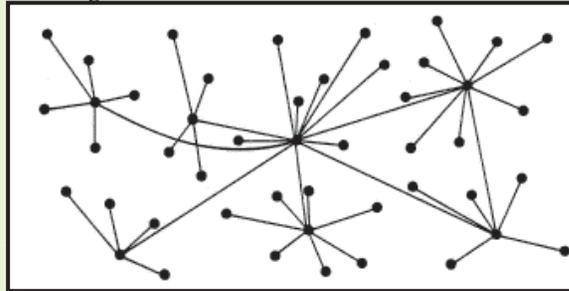


Fig. 4.1 A diagram of a decentralized network



Fig. 4.2 Steven Holl's Linked Hybrid is a great example of sustainable urban development

smart growth principles and connect to the each network of the layering system (i.e. bicycle, bus, etc.) They should contain a high-density of residential and commercial mixed-use districts which contain walkable streets with an integrated, safe sidewalk network.

Within each district there should be a strong connection to bicycle lanes. There should also be a strong connection to an effective mass transportation system to accommodate longer distances of travel.

The main focus of a neighborhood district is the long term life cycle of the city. In other words, neighborhood districts fit adequately under a category of urban design that can be defined as development that satisfies the current wants and needs of the community without interfering with future generations' ability to meet their own needs. To the left is a diagram of a network system which is used as a model for internet connectivity. In addition to creating an efficient organization for internet servers, this network system, developed in the 1960's, is a good model for how to organize people efficiently. This model lightens the load on major transportation corridors as well as effectively decreasing the strain on singular hubs throughout the city. Ultimately, and perhaps most importantly, this model minimizes the total distance that the citizen needs to travel in order to function successfully.

## Neighborhood Center Example: Chicago's Loop

The Loop in downtown Chicago is now a carefully planned development. Walkscore.com, an online walkability ranking and evaluation website gave the Loop a rating of 98 out of 100 for its accessibility to food, groceries, mass transit workplaces and proximity to residential housing. This district epitomizes the goals of a SMART District. The downtown loop in Chicago exemplifies a SMART District primarily due to its conduciveness to walking instead of driving. There are many residential units within walking distance of the New East Side and South Loop.

The commercial hub within the loop emphasizes density. There is also a very successful mass transportation system (the 'L'). The Loop is a very iconic district with a notable identity. Additional transportation systems also converge at this circulation hub, including bikes, buses, and taxi's.

Chicago's commitment to sustainability has perpetuated a cycle of more environmentally conscious people who are pushed by environmentally conscious leaders. This commitment lead to the adoption of new legislative policies, such as city-wide building codes requiring all new construction to contain green roofs and obtain a minimum of LEED Certification. Chicago is leading the way in Sustainable innovation and their example should be carefully noted.

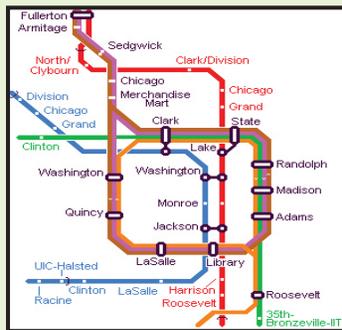


Fig. 4.3 Diagram of rail lines which create the 'Loop'



Fig. 4.4 All civic construction must include a green roof



Fig. 4.5 View from the 'L'



Fig. 4.6 'Cloud Gate' an intriguing iconic installation



Fig. 4.7 'The Flamingo' strengthen identity of the Loop

## Recommendations

### Application to Sedalia

Ultimately Sedalia can be boiled down into two eternal values that will be crucial to the success of the region. These two values are education and respect for nature. Using these values as a foundation, the proposed SMART Districts will each contain a site which represents these two values (mapped in Fig. 4.8): schools (yellow) and parks (green). These locations are the building blocks of the SMART Districts.



Fig. 4.8 Diagram of Sedalia: Parks / Schools

Parks and schools represent Sedalia's most precious resource, the natural beauty of the Ozarks and its children. It is important to understand that neighborhood districts are not the goal or objective, but should instead be treated as the means to reach a more livable city and sustainable

lifestyle. The main objective is to create a more livable city.

Neighborhood districts are districts of the town which will fit within a 1.5 mile diameter oval. Each oval is approximately 15-20 minute walk from one end to end for a moderately fit middle-aged adult.



Fig. 4.9 Diagram of Sedalia: SMART Districts

SMART Districts will work as a theoretical organizational tool that offers all the amenities of a city on a walkable scale. Each oval will contain the daily needs stores to serve the residents living in that district. This reorganization provides the framework for an individual to live a sustainable, localized lifestyle. An application where the SMART Districts may come

into effect is zoning regulations. Legislation may empower and incentivize construction of certain building type within a district where it is lacking. A proposed grocery store in a residential neighborhood, for example, would not only receive its building permit in an extraordinarily speedy fashion, but would also receive strong tax cuts and rebates to reward environmentally-conscious behavior.

The SMART Districts are more of an organizational tool rather than a physical boundary. Viewing the city through this understanding will allow a reorganization of existing infrastructure without massive reconstruction. By encouraging mixed-use development in a few locations, the city can become effectively decentralized. This decentralization is the first phase of reorganizing the city into a more efficient and responsible design.

Each overlap of the neighborhood centers will be anchored by key unifying points throughout the city. They will be public places that are shared and will connect the town. Some of these overlapping points are the State Fair Community College, the three proposed community center locations, the Katy Trail, the Farmer's Market location downtown, the Katy Trail bridges across Highways 50 and 65, the State Fairgrounds, and the Bothwell Regional Health Center.

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Fig. 4.10 SMART Districts connect significant sites in the city.

To further explain the proposed reorganization of the city, we have analyzed the existing and proposed forms of the city along the guidelines established by Kevin Lynch in his book *The Image of the City*. The four components that we use to dissect the city are landmarks, paths, edges and districts. Landmarks, (i.e. the Katy Depot) are identifiable points in the city, used for wayfinding. Paths (i.e. the Katy Trail) signify circulation patterns within the city and depict major movement. Edges (i.e. the railroad) are definitive, though not always physical boundaries in the city that generally mark the end of districts. Districts (i.e. downtown) are separately distinguishable areas in the city that either possess or have the potential to possess a distinct identity. Since we are preparing the city for pedestrian travel the highways are seen as much of a boundary as a path. Ohio Street is included as a boundary, only in the existing plan due to its perceived socioeconomic divide.

By proposing additional iconic landmarks with an emphasis on walkable sites we suggest a future Sedalia that has a strong identity. The proposal effectively decentralizes the city through a few minor changes. These organizational changes intend to connect the city. Combined with the layered transportation system the city will begin to truly assume its identity as a sustainable city of tomorrow.



Fig. 4.11 Critical Analysis of Existing City

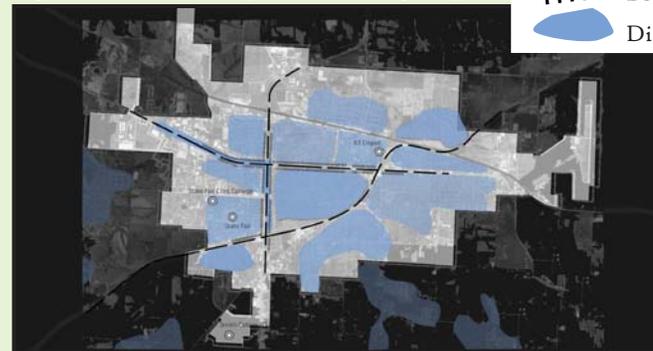
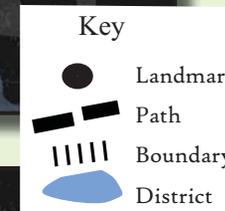


Fig. 4.12 Critical Analysis of Proposed City

## Recommendations

### Zoning for Sedalia

Zoning is basically a set of restrictions placed on people's and/or businesses' property rights. This allows the government to control what is being built at specific locations throughout the city and also what type of buildings are allowed to be built on a particular site. The most common kinds of zoning are for residential, commercial, and industrial.

There are several reasons why the government may choose to zone an area. It could be because of certain externalities. For instance, one may not want to locate near a trash dump so they can zone this area so that no residential housing can be built there. Another reason for zoning might be for fiscal reasons. The economic leaders want to make sure that there is a surplus generated, not a deficit. This means that all the properties in a given area are to be worth about the same amount. Another reason to zone might be because of urban growth. Some governments will set an urban growth boundary which means that no development can take place beyond this boundary.

Zoning proposed in the initial phases of design is intended to build the foundations for the desired future Sedalia. In this community, pedestrian friendly zoning with some small commercial areas in the neighborhood districts may be the technique. These commercial hubs can be surrounded by

small multi-family residential zones, which then are surrounded by existing single-family residential zones. These proposed zones break the city into smaller, more functional pieces. The purpose of zoning is to provide guidelines for future developments to achieve certain results.

Incorporating programs such as Enterprise Zoning would benefit the city of Sedalia a great bit. An Enterprise Zone is a specific geographic area targeted for economic revitalization. Enterprise

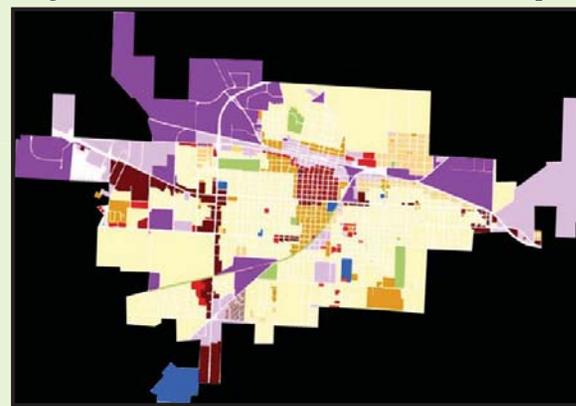


Fig. 4.13 Map of Existing Zoning in Sedalia.



Zones encourage economic growth and investment in distressed areas by offering tax advantages and incentives to businesses located within the zone's boundaries.

The philosophy of the enterprise zone suggests that by encouraging the production of goods, investment will improve; therefore, the supply of goods and services and the providing of job opportunities will increase accordingly.

Figure 4.13 is a map of the existing zoning in Sedalia. As you can see there are a large amount of commercial zones in the immediate vicinity of Highways 65 (Limit Avenue) and 50 (Broadway Boulevard) and another small commercial zone located along Ohio Avenue in the downtown district. In order to really make these neighborhood districts function in the intended way, it is vital to enforce zoning for commercial areas throughout the rest of the city as well.

If smaller commercial zones were enforced throughout the city, not only would local commerce benefit, but the idea of functional locality would become a reality. Every person in Sedalia would be able to accommodate nearly all of their daily needs without the use of their automobiles, making Sedalia a completely unique kind of city; a completely walkable city.

This creates functionality in terms of usable alley space and parallel roadway connections. Zoning can also create a safer city by regulating

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the separation of vehicular and pedestrian traffic. Lighting and traffic barriers could also be incorporated in the design to increase safety. Zoning emphasizes walkability and pedestrian-influenced design by minimizing vehicular parking and maximizing alternative parking options. Zoning may be necessary for the addition of green spaces within the commercial and residential hubs, introducing the concept of pocket parks and reinforcing human scale. One of the greatest benefits of zoning for Sedalia is the potential to boost the local economy. The introduction of new businesses throughout the Proper zoning will begin to create mixed-use live, work,

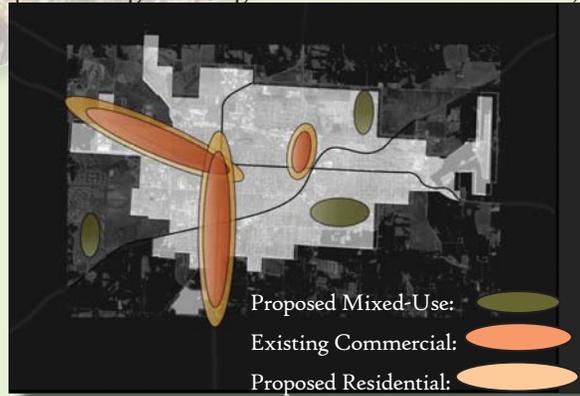


Fig. 4.14 Diagram of an Example of Decentralized Zoning in Sedalia.

play districts. Ground floors of the multiuse buildings should be dedicated to commercial stores with additional stories providing residential housing. The businesses encourage fresh daily activity while residents keep commerce alive at night.



Fig. 4.15 View of alleyway

The introduction of pedestrian streets within these multi-family housing districts would promote active living and providing a sustainable alternative to the automobile. Encouraging residents to walk develops relationships and builds the strength of the community.



Fig. 4.16 View of alleyway

Enforcing standards when proposing zoning such as raised crosswalks, functional alleyways, an abundance of signage (both typical and directional), and the inclusion of green space and lighting would ensure that the city develops into a much more sustainable and organized place.



# Recommendations

## Trail Additions

The SMART system seeks to integrate shared bike and pedestrian trails into the fabric of the Sedalia community. The Katy Trail is the backbone of the entire SMART system. The Katy Trail State Park trail extends from St. Louis to Clinton, MO. The trail enters Sedalia from the Northeast and runs diagonally through town exiting in the Southwestern quadrant; connecting three of the four city quadrants formed by Highways 65 and 50. The Katy Trails is an extremely important component of the SMART system because it runs through or adjacent to many neighborhoods, schools, and parks.

We recommend that a second major trail be development to complement the Katy Trail. This trail should extend through the community from the northwest to the southeast. We suggest that the trail use the existing drainage system that runs from the northwest through Vermont Park to 14th Street, then east across the Katy Trail and along the drainage system to Centennial Park.

In subsequent phases of the trail system we encourage the community to consider developing the property along the drainage system and alleyways. The extension of the trail should begin to encircle the city center further integrating the four community quadrants. We encourage the community to consider extending trail:

- Along the alleyway between Main and 2nd Streets
- From Centennial Park to the hospital and back to the Katy Trail
- From the commercial district west of town to the State Fairgrounds
- From the State Fairgrounds to the Katy Trail

We recommend that all of the trails be made of a hard surfaces to accommodate more user groups and enhance the trail's year round versatility. This would allow pedestrians of all ages, cyclist, rollerblades, skateboarders, wheelchair users, and people with strollers to use the SMART trail system.



Fig. 4.17 Trails adjacent to drainage increases capacity and beautifies the city with an urban stream.



Fig. 4.18 Adjacent urban trails improve property value.

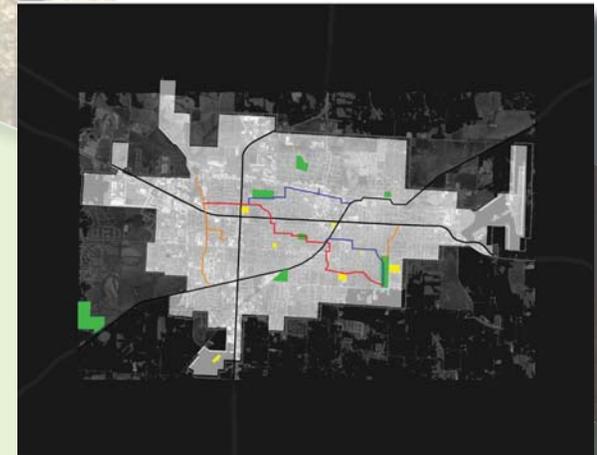


Fig. 4.19 Phase 1- Red | Phase 2- Blue | Phase 3- Orange.



Fig. 4.20 An inviting walkway visible from the street entices use and activity.

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By creating incentives for home and business owners to fix up their back and side yards, a much more pleasant environment for the SMART system users can develop in alleyways. Fixing up all old sheds, barns, and other private property will allow the alleyways to become more inviting and desirable. Lighting should be added to make the pedestrian more comfortable and discourage vandalism.

The first phase of the trail system is 3.6 miles long. It successfully connects residential neighborhoods to Centennial Park, Vermont Park, Parkview Elementary, Sedalia Middle School, Heber U. Hunt Elementary, Pettis County Historical Museum, and the Katy Trail. A 10 foot wide asphalt trail would cost approximately \$608,000, at \$32 a linear foot.

The second phase of the trail system is a 2.9 miles long. It connects Liberty Park, Centennial Park, Whittier High School, Heber U. Hunt Elementary, Downtown, the Farmers Market, the Amtrak Station, the Bothwell Regional Health Center, the Katy Depot with the Katy Trail. A 10 ft. wide asphalt trail would cost \$490,000.

The third phase of the trail system is 2.7 miles long. It successfully connects Centennial Park, the commercial district, the State Fairgrounds, the State Fair Community College, the Daum Museum and the Katy Trail. The cost of phase 3 is \$458,000.

The new trail system, applied over a thirty year period and readjusted for inflation and the cost of living, would cost approximately \$1,550,000. Phasing helps to make a large scale vision possible.

Improvements to the Katy Trail are vital to the success of the system because it acts as the interstate of the system. The

cost to pave the Katy trail would be approximately \$500,000. Once the trail system is completely finished it will be successful in directly connecting many of the major points in the city including many parks and schools. The rest of these parks and school will be connected to the trails via bike paths and sidewalks.

Over half of the public schools and almost 90% of the parks will be connected by the proposed trails system. The rest of the schools and parks will be easily accessible via other layers of the SMART transportation system.

Renovating the infrastructure of downtown to make alleys primary urban trails will make the downtown more accessibly and attractive. Alley should be redesigned to make the pedestrian feel that they are experiencing the backside of the buildings and moving through leftover space. Increased lighting, planters, shrubbery, signage and even repaving and repainting surfaces will make the alleys more inviting. Bollards should be added at the entrance to the alleys to keep them pedestrian only.



Fig. 4.21 Renovating alleyways downtown not only revitalizes but it reconnects.

## Recommendations

### Bike Lanes

The idea behind the bike lane is to make the motorist and the bicyclist aware of one another and safe while traveling along the roads. Within Sedalia there are currently very few bike lanes and the streets are very dangerous to navigate by bicycle. However, Sedalia's roadways are wide enough in many places to accommodate bike lanes with minimal changes to the street. There are a few different options to look at when applying bike lanes to Sedalia's roadways.



Fig. 4.22 Narrowing road width decreases the speed of vehicular traffic, encouraging more bicyclists

By narrowing vehicular lanes and utilizing frontage property bike lanes can be inserted into the city with relative ease. Narrowing vehicular lanes has been proven to decrease the velocity of traffic which reduces car related accidents, welcomes bikers and increases gas mileage.



Fig. 4.23 In many instances the land required for the implementation of bike lanes is already city-owned.

The downtown has several options for the application of bicycle lanes. One is simply replacing a portion of the street with a bike lane. This application is suggested for north-south running roads, and bike parking would be provided directly

in front of all the stores lining the street. This gives bicyclists the advantage of convenient parking and safe routes around downtown.

Another option for the downtown area is to remove parking on both sides of some streets downtown in order to provide bicycle only lanes. This again will slow traffic down as well as provide an incentive to bike instead drive. Although some resistance may be met by local store owners, the fact is that this process is not going to be easy. Every bicyclist has a wallet just a passenger does. Sedalia must proceed into its future with courage, vision and confidence.



Fig. 4.24 No parking on street for bike lanes

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## Bicycle Safety

Bicycle safety is a very important consideration when applying a bike lane system. We are suggesting several ways to make motorists more aware of bikers.

- Painting the bike lanes a bright color will show the motorist the lane location and provide the proper amount of space for a bicyclist to feel safe.

Using colored pavement in the bike lanes has several benefits: safety, comfort, and promotion. Colored pavement helps visually elevate the prominence of the bike lane on the road, further defining the cyclists' space and helping differentiate this road space from that which motorists feel free to use. The coloring is a constant and bold visual reminder to motorists that the bike lane (and hence, cyclists) are present.

- Applying bike boxes at every intersection places the biker at the front of the lane, allowing the driver to see the bicyclist's location and to ensure their safe.



Fig. 4.25 Bike boxes and signaled crosswalks increase bicycle safety



Fig. 4.26 Biking in groups improves awareness and safety

A major goal is the prevention of collisions between motorists turning right and cyclists going straight. It's all about visibility and awareness. At a red light, cyclists are more visible to motorists when in front of them in the bike box. During a green light, the green bike lane through the intersection reminds motorists and cyclists to watch for one another.

- A more idea is to place a system of separate stop lights for bikers.

In the city of Copenhagen, brand new bike traffic lights were added in a posh residential area and seaside retreat for urban residents. Cyclists wait patiently and comfortably in segregated bike lanes for their traffic light to turn green.

- The city can require riders to purchase LightLanes for evening bicycling.

LightLane projects a crisply defined virtual bike lane onto the pavement using a laser. This provides the driver with a distinct visual boundary to avoid. With a wider margin of safety, bikers will regain their confidence to ride at night, making the bike a more viable commuting alternative.



Fig. 4.27 Products like *Lighlane* save lives, making the vehicle more aware of the bicycle lane

# Recommendations

## Sidewalk Infrastructure

Another component of the SMART system is the installation of sidewalks within the city of Sedalia. This piece of the system is designed to reinforce the other pedestrian modes: trails, bike lanes and public transit. The SMART system is intended to encourage walking, biking and use of the public transit within the city.

Sidewalks must be designed to allow a pedestrian to travel to and from their destination safely, conveniently and pleasantly. These sidewalks must be designed with comfortable widths and surfaces for its volume and type of pedestrian traffic, traffic buffers (plants, curbs and setbacks), appropriate types of lighting and seating, way finding signage and visual interest.

The SMART system is conceived of as a hierarchy of sidewalks: primary, secondary and tertiary. These can be described as follows:

- The primary sidewalks are the major routes that accommodate a high volume of pedestrians and connect to major areas within the city to one another.
- The secondary sidewalks are the collector routes that transition from the neighborhood sidewalks to the major sidewalks.
- The tertiary sidewalks are the neighborhood sidewalks.

We recommend that the SMART sidewalk system be conceived of holistically, but implemented in a series of phases. Although we encourage the city to concentrate on upgrading and expanding the primary sidewalk system first, that in no way precludes the development of some secondary and neighborhood sidewalks. However, we believe that the highest priority should be given to establishing a complete and safe sidewalk system throughout the city. Once the primary sidewalks are well established we would recommend that the emphasis shift to the secondary and then neighborhood sidewalks.



Fig. 4.29 Downtown sidewalk



Fig. 4.28 Streetscape with proposed sidewalk amenities



Fig. 4.30 Sidewalk near shopping center

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## Primary Sidewalk Grid:

The hierarchy of primary sidewalks creates a grid that overlays the city, connecting all the major points of Sedalia. The criteria for deciding which streets should be chosen for the primary sidewalks are as follows:

- The system of primary sidewalks must respond and interact with the other components of the SMART system.
- They should cross trails and connect them to the rest of the city.
- These sidewalks should run along schools, parks, and major commercial areas whenever possible.
- The system should make sure adequate space is allowed for the particular type of sidewalk being proposed.
- The grid should ensure that the streets allow for a continuous sidewalk throughout the city.
- The system should consider the number of driveways interrupting the sidewalk (ex. Highways 50 and 65).

Using the above criteria, we suggest the following streets be developed with primary sidewalks:

### East/West Primary Sidewalks:

- 24th Street from Katy Park to Centennial Park
- 16th Street due to its wide open space on each side and connecting the extreme ends of town. 16th Street also passes two schools, Horace Mann and Whittier Elementary, Centennial Park, the State Fair Fairgrounds, and the State Fair Community College.
- Highway 50 and 65 east due to the large amount of open space on both sides.

## North/South Primary Sidewalks:

- New York Avenue due to its connection of Centennial Park, the Katy Trail, and the northeastern section of town.
- Ingram Avenue due to its connection of the northern middle school to the Katy Trail at its intersection with Highway 50.
- Ohio Avenue north of Highway 50 because it is a main street through downtown.
- Missouri Avenue because it connects the Katy Trail with Vermont Park and Hubbard Park.
- Grand Avenue since it helps connect 16th Street with the Katy Trail and Katy Park. Grand Avenue also connects a large area south of the Katy Park.
- South Park connects the Katy Trail and crosses Highway 50 and connects Liberty Park.
- Warren Avenue from Liberty Park to Highway 50 connecting Heber Hunt Elementary.
- State Fair Boulevard
- Thompson Boulevard and Clarendon Road because they connect northern Sedalia with Highway 50, the State Fair fairgrounds, and the State Fair Community College. In addition, these roadways lead to the new High School.

## Secondary Sidewalks:

Secondary sidewalks should be placed on a grid and spaced every 4 to 8 blocks. The number of secondary sidewalks should increase when placed near points of interest like schools, parks, and major commercial areas.

## Recommendations

### Sidewalk Design:

An average person requires 1.5 to 2 feet of width while standing and 3 to 4 feet while walking. Since walking is usually a social event, a minimum of 5 feet is required to allow for a two person width on the sidewalk. When a person is walking next to a building or a fence, an extra 2 feet, “shy area”, is required.

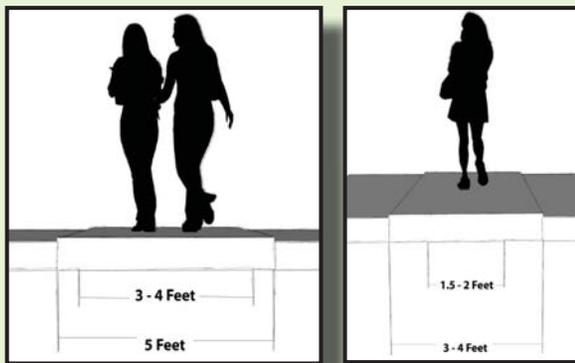


Fig. 4.31, 4.32 Minimum walking widths for single and double occupancy

Sidewalks should be buffered from vehicular traffic to make the pedestrian feel more comfortable and safe. For example: in commercial areas, such as downtown, the buffer can become an area called the “furniture zone” which is anywhere from 4 to 8 feet wide. The furniture zone would include streetscape elements as utility poles, lights,



Fig. 4.33 Downtown sidewalk with furniture zone, effective width, and shy distance

trees, hydrants, signs, benches, trash receptacles, information kiosks, transit shelters, and planters.

In residential areas we recommend a continuous landscaped buffer between the street and sidewalk. Wherever possible trees should be incorporated; they improve the actual and perceived safety and provide shade while walking. Ideally, this landscaped buffer should be a minimum of 6 feet wide. Even in constrained areas a narrow planting strip should be added. If the vegetated buffer is not possible, the addition of several extra feet to the sidewalk will help the pedestrian feel more comfortable and safe.



Fig. 4.34 Detached sidewalk with vegetated buffer



Fig. 4.35 Attached sidewalk with extra added

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## Sidewalks

- We recommend curb extensions be used where parking is permitted along the street. This is especially important when the sidewalks have no buffer area between the sidewalk and street. Curb extensions minimize the distance a pedestrian must travel to cross a street as well as ensure that people do not park on pedestrian crossings. They also improve sight lines allowing oncoming automobiles a better view of pedestrians waiting to cross the street.

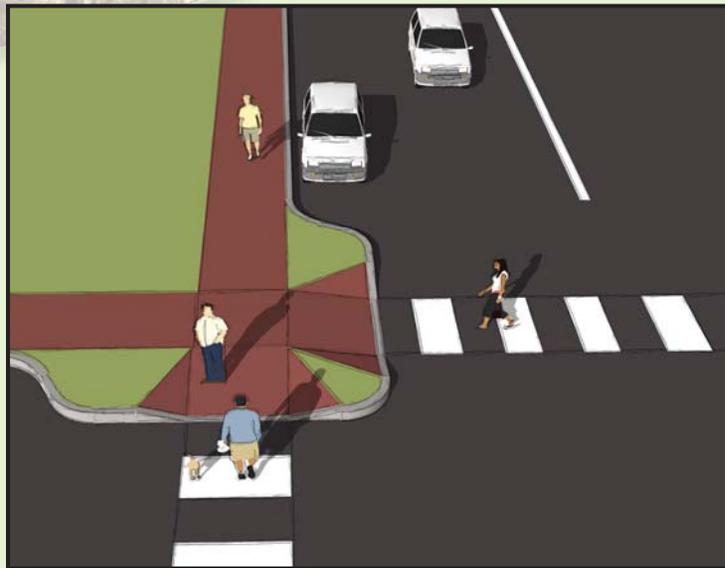


Fig. 4.36 Attached sidewalk

Fig. 4.37 An even, hard surfaced sidewalk material providing excellent traction is suggested



Fig. 4.38 Appropriately scaled light example for safety, resting areas, and informational kiosks



Fig 4.39 A suggested way-finding sign on a light post



# Recommendations

## Public Transportation

The final layer of the proposed SMART system is public transit. The public transportation works in conjunction with the bike and pedestrian trails to create a more efficient, useful, and cohesive community transportation system. Sedalia already has a public transportation system, but we are recommending the community alters and adds to it, in order for more efficiency and use. For instance, subtracting bus stops from the current arrangement would encourage use of the bike lanes and trail systems, offering fewer stops for more efficient routes. We recommend three

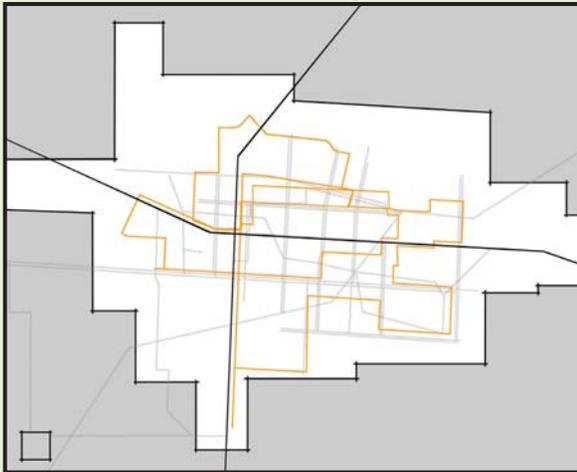


Fig. 4.40 Diagram of the three routes working cohesively to efficiently cover the major destinations of Sedalia



Fig. 4.41 Future multi-modal transportation hub

thirty minute bus routes to optimize efficiency. In the future, it is suggested that the current Amtrak station be remodeled again into a more overall transportation hub. This design should include an area to store and repair the trolleys from the transportation system. This would also be the stop where all routes converge. The facility would become a bus stop, Amtrak stop, a trailhead, and a park. This design suggests the overhang be converted into an eating area, complete with a small cafe. A monumental glass entry shows the importance Sedalia places on the convergence of their transportation system, and becomes an important welcoming piece to those entering the town on the train.



Fig. 4.42 Future multi-modal transportation hub



Fig. 4.43 Suggested transportation vehicle relating back to Sedalia's rail car heritage

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## Bus Stop Locations

The locations of the public transit stops were chosen for convenience and accessibility to all main areas of the city. We support the city's plan to place the central public transportation hub at the Amtrak station, along with the bus storage and repair facilities. We recommend that other bus stops be located throughout downtown and at the parks, Katy Depot, hospital, state fair grounds and schools. All transit stops should be located within convenient walking and/or biking distance of the SMART trail, sidewalk, and bike system. Each bus stop should have a "shelter" to provide a safe and inviting area for riders to wait. These shelters should provide protection from the weather, seating, bike storage and information kiosks.



Fig. 4.44 Diagram of the proposed bus stops, suggesting updating and subtracting from the existing structures



Fig. 4.45 The Katy Depot as a suggested bus stop relating back to Sedalia's train heritage

### Located Public Transit Stops

- Main stop = Amtrak station
- Hubbard Park stop and surrounding neighborhood
- Downtown stop
- Katy Depot stop -community center & surrounding neighborhood
- Housel Park stop and surrounding neighborhood
- Hospital stop
- East 16th street stop
- Centennial Park and school stop
- New High School stop
- State Fair Community College stop
- State Fair stop
- 2 Broadway stops (1 Wal-Mart, one at the corner of Broadway and Limit)
- Vermont Park and surrounding neighborhood stop
- Industrial park stop
- 2 other school stop
- 3 other neighborhood stops

## Recommendations

### Bus Stops

Bus stops are a key area of improvement for updating the current mass transportation system in Sedalia. While sitting in a traditional bus stop pedestrians typically feel exposed and on display often times in leftover spaces that are dominated by vehicular travel. The term 'bus stop' is improved upon in this section, replaced by the phrase 'bus shelter.' This implies a more permanent place of rest which is more comfortable and inviting.

Bus shelters should encourage the use of the public transportation system. They should instill dignity and pride to the user of the mass transportation system. They are a large part of the experience of the mass transportation system and should be treated as such.



Fig. 4.47 Suggested bus shelter that bears a strong relationship to the community center, suggesting dignity



Fig. 4.49 Three overlapping planes represent the three converging transportation types in this bus shelter design



Fig. 4.46

Curitiba, Brazil  
This bus shelter has a very functional and unique design, being raised off the ground to enable bus riders' easy entrance and exit. It also offers excellent protection from the elements.



Fig. 4.48

Seattle, WA  
Local children and citizens enhanced their community's stops with artwork. This creates a sense of pride, honor, and identity within each individual community.



Fig. 4.50

Kansas City, MO  
El Dorado  
Architects etched designs into this glass bus shelter. This provides another simple solution for improving the look and feel of bus shelters.



Fig 4.51 Proposed bus stop constructed of steel and glass



Fig. 4.52 Adding lighting and greenery around a bus stop can increase its appeal



Fig 4.53 Wooden timber bus shelter providing seating, gathering space, shelter, and display surfaces



Fig. 4.54 This design also allows for bicycle storage

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## Trailheads

A trailhead can be conceived of as something as simple as a public access point to the SMART system or as developed as a complex of facilities with trail amenities. All trailheads are located at points along the SMART system where multiple modes of transportation converge: sidewalks, bike trails and streets. We recommend that whenever possible the city should seek to develop trailheads within the city park system to optimize the use and cost of these facilities.

These trailhead facilities should be conceived of as transition points between the various transportation modes of the SMART system, such as from the automobile to a pedestrian form of transportation. Trailheads should also provide pedestrians and bicyclist with such services as: car parking, bicycle storage, shelter, rest areas, drinking fountains, restrooms and directional and informational signage.

Following this conceptual logic, we recommend that bus stops also be developed as trailheads to the SMART system. Therefore, bus stops and buses should provide bicycle storage, shelter, rest areas, drinking fountains, restrooms and directional and informational signage whenever possible.



Fig. 4.55 Neighborhood village trailhead example



Fig. 4.57 Suggested trailhead locations



Fig. 4.56 Gathering spaces at some trail heads



Fig. 4.58 Shopping along some trail heads

Another idea for trailheads would be to rethink shopping center design. Designing these commerce areas for the pedestrian would create another incentive to use the SMART system. Pedestrians would travel along the trail to arrive at these stores. This model can be placed along Highway 50 and 65 at entry points to the linear park. The trailhead would provide a destination to drive or ride a bus to, encouraging walking or biking along the trail.

This trailhead placement creates a direct connection to the linear park running through the dense commercial development. Since the linear park allows access to this area for pedestrians and bicyclists, the trailhead needs to provide amenities such as restrooms, water fountains, bike racks and rest areas for these users. This particular trailhead would also offer stores, shops, businesses, and cafes. These shopping center trailheads can be individually effective or strengthened as a series of developments along the linear park.

Using these commercial trailheads have several advantages. First, this model causes businesses to focus more on pedestrian forms of traffic. Secondly, it makes the pedestrian more comfortable while moving from one shopping area to the next. Thirdly, this model encourages people to use the trails by linking destinations. The trail becomes a very efficient mode of transportation to get from place to place. Once a pedestrian is out of his or her automobile, the trails make it very efficient to continue walking rather than driving to the next location.

This model for a trailhead allows citizens easy access to a larger selection of stores per parking space. This means once parked, the shops are connected so successfully by sidewalks and trails that the individual doesn't need to drive and park at another shop. The shopper continues along the paths walking between instead of driving. By converting these areas into usable space, the community makes better use of undeveloped areas around businesses, creating pleasant areas with multiple uses.

By grouping businesses that complement one another, a shopping area encouraging efficiency and ease creates convenient village areas providing amenities. Green Circle in Springfield, MO is a great example of rethinking shopping centers. This shopping center is the first to achieve LEED Platinum status, meaning it is an incredibly sustainable establishment. The Green Circle Shopping Center has a shared theme of sustainability throughout the shops. The tenants benefit because a person shopping at an outdoor store would also likely buy organic food for a camping trip. A shopper is more likely to go to and buy from an area of shops all within his or her interest. For example, the Green Circle Shopping Center holds an organic grocery store, a healthy smoothie stop, a healthy café, a Dynamic Earth sporting goods store, and a Dynamic Body yoga studio. This encourages the redevelopment of existing business districts within Sedalia and decreases additional sprawl.

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## Community Centers

Sedalia has already voiced a large interest in constructing a community center for their city. Placement of a community center on the Eastside of town is a great step toward breaking down previously perceived socioeconomic boundaries. Naming the building the Eastside Community Center would be another way to enhance this unification. When developing a program for the construction of the community center it is essential to explicitly state that the community center should work to deconstruct these perceived boundaries.

To further enhance connection to the city, the building exhibit a strong relationship to the mass transportation system. Additionally, the



Fig. 4.59 The relationship between community center and bus shelter should promote sustainable transport



Fig. 4.60 The 'Eastside Community Center' promotes socioeconomic equality and unifies the city

community center should exhibit a strong relationship to the Katy Trail. Promote this relationship is the first step to encouraging active living. The image below (Figure 4.62) displays the relationship between the trail and the community center. This relationship should encourage individuals at the community center to use the trail and trail users to use the community center, if only as a rest stop. This relationship is important because it should encourage individuals who would normally travel to the community center by car to take their bike instead. This is crucial because it displays an acknowledgement that the true beauty of either component lies in the relationship between them. Additionally this



Fig. 4.61 By distributing community centers throughout the city, citizens are encouraged to walk to their neighborhood location



Fig. 4.62 This relationship between the trail and a community center promotes interaction

relationship between trail and community center becomes a clearly identifiable landmark along the Katy Trail. Once distinct landmarks are created it will not only increase activity to and around those landmarks from citizens but it will also encourage tourists to visit and revisit the area.

The development of several community centers throughout the community makes walking for transportation a possibility. This effective decentralization would strengthen the SMART Districts. Careful consideration should be given to the locations for additional community centers. Community Centers should continue to be located along the Katy Trail or trail additions. Functional needs of each area district should be programmed into each center (i.e. a public pool may not be needed near Centennial Park). Each community center should be located in order to optimize connection of adjacent neighborhoods or SMART Districts.



Fig. 4.63 Community Centers should exhibit a strong relationship to trails



Fig. 4.64 This pathway encourages interaction between the community center and the trail



Fig. 4.65 The trail becomes the main artery through the community center

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### Pavilions

We recommend the development of a series of pavilions along the SMART trail system to provide places to rest and socialize. These pavilions would enhance the functionality of the trail, add aesthetic interest and become community landmarks. The pavilions should be located near neighborhood and activity nodes along the length of the SMART system.

These pavilions should be developed in a variety of sizes to accommodate families and large groups. At a minimum, the pavilion would provide shade, rest, water, bike racks and informational kiosks and seek to encourage the trail users to pause and enjoy these small sanctuaries in the heart of Sedalia.

The design of these pavilions should promote a variety of settings, uses and experiences. This pavilion is a light wood frame structure and art installation. The artwork adds excitement and diversity to the experience of Sedalia. Such functional art installations would give Sedalia a unique marketable identity and distinguish Sedalia from other towns along the Katy Trail.

The connection between the pavilion and trail user is the primary idea for the design of this pavilion. As you approach this pavilion from the southwest it appears disorderly. However, when approached from the northeast, the components



Fig. 4.66 Northeast of Katy Park on the Katy Trail is an ideal site for a pocket park and pavilion

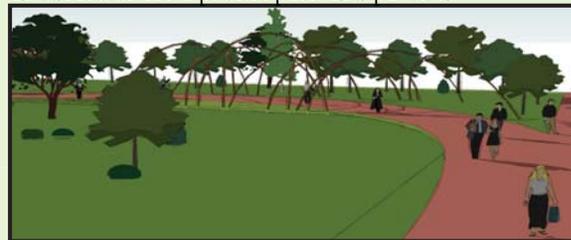


Fig. 4.67 From one direction the pavilion appears as a disorganized art installation



Fig. 4.68 From the opposite direction it appears as an archway, distinguishing experience and increasing awareness



Fig. 4.69 Pavilion Sites should be primarily reachable by foot to both reward and encourage the pedestrian

align to create a planned and organized archway.

This perceived functional and organizational shift when experienced from different vantage points creates interest and increases awareness

This pavilion can also be understood as a learning experience. In the morning a child on the way to school might be presented with a problem: the chaotic view. On the return home, the pavilion reveals its solution with an organized view. This learning can be perceived as a reflection on life.

This pavilion is only reachable by foot or bike and serves as both a rest area and a communal gathering space. This offers a physical connection between the Katy Trail users and Sedalia citizens.

The community could use the pavilion as a place to grill or a location for the bike share program. The addition of various multi-use pavilions throughout the city of Sedalia would help to promote active living. Additionally, these pavilions can help to create landmarks and aesthetic points of interest. The pavilions can become community gathering spaces which enhance and enliven their neighborhood surroundings. These pavilions should be simple in design and easily constructed and maintained.

The pavilions should be designed to accommodate a wide variety of activities: rest areas, educational and informational kiosks, family reunions, barbecues, wedding receptions, arts and craft festivals, farmer's markets, etc.

Neighborhood pavilions are a concept which can both strengthen and improve communities. A site (Fig. 4.67) northeast of Katy Park along the Katy Trail is a good example of unused space which can be both activated and improved by the addition of a neighborhood pavilion. A pavilion (Fig. 4.73, 4.72) designed in this space should act as a shaded rest stop with minimal amenities (i.e. water fountain, bench) to travelers through Sedalia as well as a communal gathering space for members of this neighborhood district.



Fig 4.70 Protection from the elements is essential for a pavilion



Fig 4.71 Pavilions may act as bridges, rest stops and community gatherings



Fig. 4.72 Neighborhood pavilions strengthen communities and bring people together



Fig 4.73 Farmer's Market pavilions reinforce the function of the weekly markets and act as a visual reminder when not in operation



Fig 4.74 Lighting a pavilion at night may increase its iconic impression as well as its safety



Fig 4.75 Pavilions may act as art installations as well as gathering space

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## Farmer's Markets

In addition to the new downtown Farmer's Market, we recommend that, overtime, the city develop smaller, more neighborhood based farmers' markets. These smaller neighborhood markets could move from place to place each week or month to promote activities and excitement throughout the community. These mobile farmer's markets would help to activate and promote the use of the bicycle, pedestrian and vehicular SMART trails system. We recommend the installation of a series of pavilions along the bicycle, pedestrian and vehicular SMART system to serve a variety of social, recreational and economic uses: farmers'



Fig. 4.76 Street markets make fresh produce available within walking to all citizens once a week



Fig. 4.77 Market Pavilion using vegetation for shading



Fig. 4.78 Proposed street market



Fig 4.79 Proposed Mobile Farmer's Market locations

markets, art and craft shows, family reunions, wedding receptions, picnics, etc.

If the mobile farmers markets concept is developed within the SMART system it will be important to select locations that are easily accessible by foot, bike and car. This suggests that these markets and pavilions could be located at major trailheads. A couple of elements that are beneficial to the success of the farmer's market are:

- Having a set times and locations
- Providing a visible and permanent location for the market
- Incorporating music, entertainment and educational activities

To accommodate a variety of activities, an open air pavilion design is recommended. Some design elements to consider are:

- To incorporate vegetative shading devices to cool and make the pavilion more functional and aesthetically pleasing
- To incorporate a variety of seating and table options

The existing Farmer's Market in downtown Sedalia is housed on two parking lots adjacent to four large masonry structures. To enhance this farmers' market experience we recommend that a few modifications be made to the site:

- The surrounding masonry walls should have murals added
- The vehicular parking should be kept off the site
- Vegetation should be added to cool the area and provide a setting with a more human scale

A few examples of successful markets that are worthy of further study are the City Market in Kansas City, MO and the mobile market in Volos, Greece.

The City Market in Kansas City, Missouri serves multiple functions and is the permanent facility for the region's largest farmer's market. The functions served by the City Market are commerce, horse trading, medicine shows, political rallies, circuses, a gathering place, farmer's market, concerts/events, shopping, dining, local attractions/services, arts and crafts, and much more. The market is home to a unique collection of gift shops, authentic restaurants and attractions (the Arabia Steamboat Museum). Rain or shine, the region's largest farmer's market is held every Wednesday, Saturday, and Sunday from March until October. As many as 140 farmer

stalls are present when in season. The City Market hosts an extensive event calendar including concerts, food festivals and children's activities and offers unique experiences, with lots of restaurants and cafes to choose from as well as several shops and boutiques.

The mobile market in Volos, Greece has four different locations throughout the week. Although it moves from place to place throughout the city it is always housed at the same location on the same day of every week in each neighborhood. This market brings fresh produce to the people instead of having the people travel to a central location to purchase the produce. This mobile market is extremely popular amongst the locals and continues to grow in size and success.



Fig. 4.80 Murals can enhance a market space



Fig 4.81 Mobile street market in Volos, Greece

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### Connecting the Katy Trail

The completion of the Katy Trail as it passes through the city of Sedalia is essential to the Sedalia's SMART system. For people traveling along the Katy Trail from the east this disconnected and incomplete section of the trail is their first impression of Sedalia. We propose a short term and a long term solution for improving this disconnected portion of the trail:

#### Short-Term Solution:

For a short-term, more economical, solution we propose improving the current residential street connection of the Katy Trail. We suggested that the bike lane be made more prominent by widening and painting the bike lane; this will codify the boundaries of the Katy Trail. We further recommend that the bike lane be widened to 8 feet to allow the two-way bike traffic to pass



Fig. 4.82 Initial Improvements for the Katy Trail include widening bike lanes and improving signage

more comfortably. The bike lanes may be marked using such paving methods as an asphalt print known as Streetprint. Streetprint and similar asphalt paving solutions create realistic looking brick, stone or other design prints solutions for a fraction of the price of pavers. This too will work toward creating an easily amendable temporary solution for the trail.

Signage should also be improved to clarify the route of this portion of the Katy Trail. Signage should be large and frequently placed to improve wayfinding capabilities as well as identity.

Lighting should be included to provide additional safety. The lighting should be focused primarily toward the ground in order to not contribute to light pollution and to save energy. The light should be regular to imply and reinforce the pathway.

#### Long-Term Solution:

Our long-term solution is a proposal for a linear park that creates a distinct connection between each segment of the Katy Trail. Land Acquisition proves to be the most difficult part of this long-term solution. But with persistence and determination the railroad has permitted allowances across their land. For more information regarding railroad relations we recommend that you contact, Mr. Terry Whaley of Springfield Greenways Trails (see reference page in the appendix). Mr. Whaley may be of some assistance as he has successfully

worked with the railroad in similar land easement acquisitions in the creation and development of the Springfield Greenways.

The proposed linear park will become the gateway to Sedalia, the first impression for visitors on the Katy Trail from the east and the last impression for visitors from the west. The creation of this park would create a gathering space to anchor together two neighborhoods on the eastside of Sedalia. This park would connect the Katy Depot, the new community center, and Housel Park.

This park will be centered around the connection of the Katy Trail as it intersects the railroad. The intersection of the Katy Trail will prove to be both an interesting and challenging task. Of the many creative possibilities we have explored a sunken plaza.



Fig. 4.83 Aerial of the proposed linear park connecting each segment of the Katy Trail

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In this design we propose sinking the walkway below the tracks and building a bridge for the train to cross. This will separate the pedestrians from the train tracks and remove any possibility for dangerous intersections. The area below the bridge should be at least two and a half times wider than its length, allowing enough natural light to shine below for safety and growth of vegetation. Additionally, the slope of the ramp should be less than 12:1 in order to safely accommodate all users. Lighting, furniture, and landscaping should be included throughout to enhance comfort and create an inviting atmosphere.

The creation of such a linear park would not only enhance the Katy Trail, it would benefit the city. Such an iconic creation would be a potential tourist draw as well as community building feature.

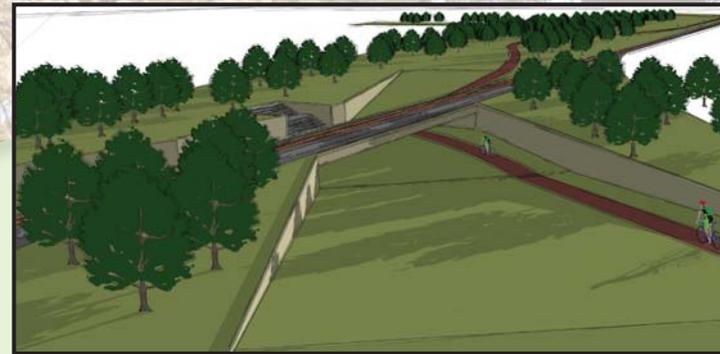


Fig. 4.85 View of sunken plaza providing a safe intersection between the Katy Trail and the railroad



Fig. 4.84 View of Katy Trail sunken plaza underneath the railroad

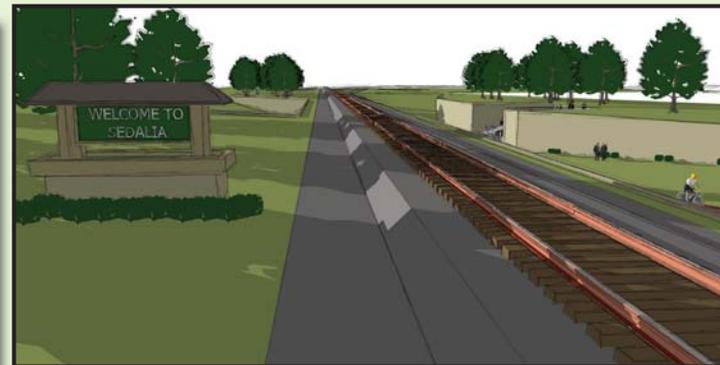


Fig. 4.86 Additional signage can create an entrance even by rail

## Recommendations

### Improving the Katy Trail

The Katy Trail has the potential within Sedalia to become a major artery throughout the city. The trail also becomes an iconic piece of Sedalia attracting more people to the city. There are a few different ways that Sedalia can achieve this quality along the trail.

The first idea enhances the experience of the bicyclist, runner, or walker by making the trail flow with the natural landscape. This would create an interaction between the users of the trail and the trail. Sculpture or moveable art along the trail would also make the trail unique and fun. Covering the trail with asphalt would allow

rollerbladers, skateboarders, wheelchair users, street bicycles, and strollers easier access to the trail that is currently not available. This change also would enable the trail to be used after heavy rains and would more easily clear during winter weather.

The second idea to enhance the Katy Trail centers on designing monumental and important places along the trail. These monuments can be archways crossing over the trail, pavilions bordering the trail, reflecting pools, or even community centers. The idea is to make Sedalia's section of the Katy Trail different from and more monumental than any other part of the trail. Sedalia then can become a destination along the trail. These elements would

only be accessible by foot or bike to give priority to the pedestrian. This space can offer rest areas, gathering spaces, and camping areas.



Fig. 4.87 Curves and landscaping can work to create a constantly changing views that create interest and diversity along the Katy Trail



Fig. 4.88 Monumental pocket park



Fig. 4.89 Katy Trail offers destinations

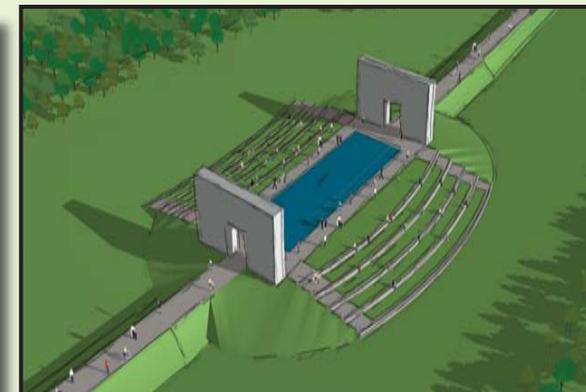


Fig. 4.90 A rest area along trail

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## Connecting Clover Dell Park to Sedalia

The city of Sedalia was given a tract of land just outside the city limits that was transformed into a thriving park. Unfortunately, due to the location, there is no easy way for pedestrians to reach the park safely. Thirty-Second Street is the primary entrance into the park, but is too narrow and dangerous for bicycle and pedestrian traffic. Another problem associated with the park is the lack of parking. During busy days in the summer and on weekends, there is a large issue with enough parking space. Another issue with Clover Dell is the lack of connection to the Katy Trail, so pedestrians have no good way of approaching the park.

The following are some suggestions for improving the park and providing a stronger connection to the city:

- Incorporate and utilize the section of the Katy Trail currently running directly behind the park. It may be beneficial to transform the back entrance into the primary entrance for pedestrians and bicyclists. This can potentially open up more parking spaces since people will travel by foot rather than automobile.
- The west side of the pond should contain a paved path running around the pond making it easier circulation throughout the park. The east side of the pond does not need a path, but instead should provide a place to sit and relax. Benches with trash cans could be placed periodically around the pond for those wishing to relax and have a picnic.
- This park will become a vital part of the Katy Trail in the future because it will be the entrance and exit point of Sedalia's section of the Katy Trail. This point may also be strengthened by the addition of a trailhead.



Fig. 4.91 Pavilion showing new entrance into Clover Dell

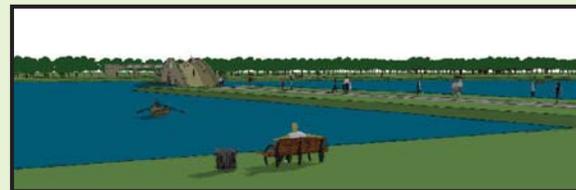


Fig. 4.92 Strengthening the connection of the Katy Trail to Clover Dell Park



Fig. 4.93 A rest stop distinguishes the entrance to Clover Dell Park

# Recommendations

## Connecting Clover Dell

Along with these solutions, additional elements can be incorporated into the park to potentially create iconic and unique experiences. One such element might be the addition of a bridge creating a direct path into the park. This bridge would connect the south side of the pond to the north side. It should be tall enough for boats to still travel beneath it. This would take advantage of the earth dock branching off the north side.

One advantage to this would be a faster way of getting to the rest of the park from the Katy Trail. This could become a good fishing area and would provide space for deeper water fishing without a boat. This bridge would become the centerpiece of the lake and the focal point of the park. The bridge could be constructed of natural stone, relating back to the park and Katy Trail.

A new pavilion should be added at the entrance to Clover Dell Park from the Katy Trail. This pavilion will act as a gateway to the park and encourage users of the Katy Trail to visit Clover Dell. It should also show people in the park that the Katy Trail is connected to the park to encourage them to use alternate forms of transportation. This structure strengthens the connection of the Katy Trail to Clover Dell and Clover Dell to Sedalia.



Fig. 4.94 New walkway around park



Fig. 4.96 New bridge spanning pond



Fig. 4.95 Clover Dell Park



Fig. 4.97 Entrance to the Katy Trail

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## Linear Park System

Another issue of concern for the new walkable Sedalia was Broadway and Limit, two incredibly busy highways bisecting Sedalia. Currently these two roads are too busy to walk or bike along because they are four lanes wide and lined with restaurants and stores. Even if sidewalks were applied, it would still be very dangerous to walk or bike due to frequent exit and entrance to these commercial areas. However, since these two roads hold a large portion of Sedalia's commerce, the area needs to be accessible to pedestrians for an entirely walkable community. Therefore, we suggest placing a linear park along these major roads, creating a barrier between the pedestrian, bicyclist, and vehicular traffic.



Fig. 4.98 Location of the linear park at Highways 50 and 65



Fig. 4.99 The proposed linear park would act as a pedestrian-safe transportation route



Fig. 4.100 Location of the linear park at Highways 50 and 65

## Recommendations

The linear park can be created by using current unused space between businesses and streets. The linear park green space will run along Limit from the Katy Trail to Liberty Park and on Broadway from the movie theater to Limit. The park will flow behind and in front of these businesses providing safety, security, and enjoyment. The elements making up this linear park will include walking paths, bike paths, green spaces, resting areas, eating spaces, other fun designed features, and signage. This will bring the scale of the two major roads down to the human and create a more comfortable pedestrian area.

There are multiple benefits for placing a linear park along these streets. First, it will enhance the SMART system. Secondly, it will provide a large buffer zone for pedestrians and bicyclists, from traffic, vehicles, and parking lots. New cross walks that making the motorist more aware of pedestrians will allow for easier and safer road crossings. Placing the park trail in front of and behind businesses allows pedestrians to easily access the commerce efficiently and conveniently. This will again reinforce the idea of walkability throughout all of Sedalia.



Fig. 4.101 Existing businesses would be encouraged to create outdoor eating spaces to interact with the trail



Fig. 4.102 Outdoor eating behind McDonald's



Fig. 4.103 Bike path and pedestrian path running through linear park in front of Wal-Mart



Fig. 4.104 The linear park compliments existing infrastructure and improves connectivity



Fig. 4.105 Gathering space in the linear park

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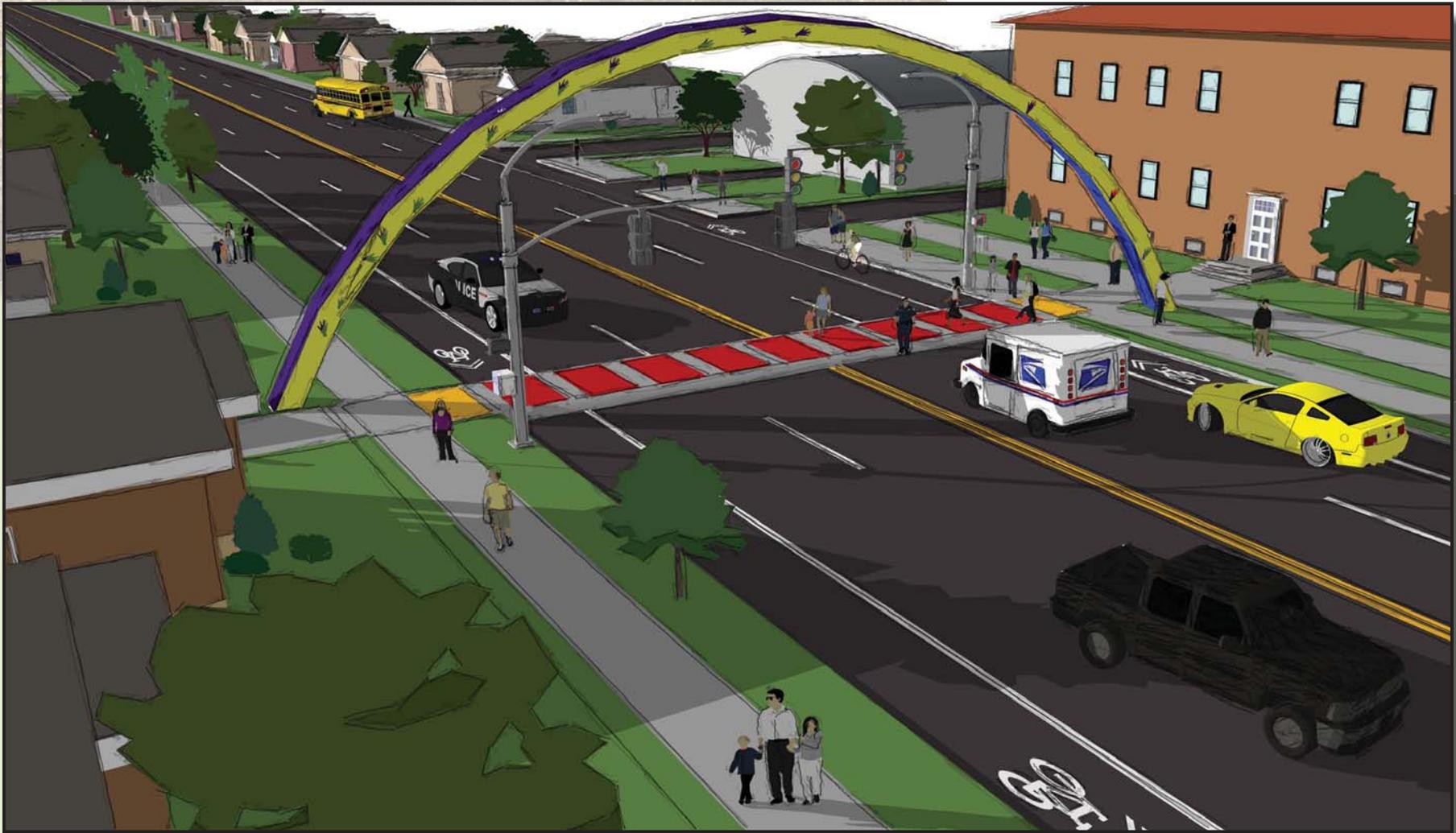


Fig. 4.106 Elaborate piece of art emphasizes pedestrian crossing

## Street Crossings

The strength and true beauty of the SMART system occurs where each of the various components (trails, sidewalks, bike lanes, and public transportation) intersect each other; the bigger the variety of interconnecting transportation modes at a given location the richer the social and functional experience. To illustrate how crossings can be designed to enhance the safety we studied a couple of crossings:

The proposed crossing at Horace Mann Elementary School and 16th Street reinforces the presence of the pedestrian by installing a type of symbolic 'bridge' spanning a crosswalk where children cross regularly. Although this piece is intended for a specific location, it may also be applied to other intersections.

In addition to the design requirements suggested above for the Horace Mann Elementary Crossing at 16th Street, we recommend the following:

- The piece is a functional art installation
- A cross-guard can be used to assist the functionality of this bridge during hours of high pedestrian traffic
- To further emphasize the archway, it can be painted with bright colors to create a playful feel. These colors also make the object identifiable and monumental.
- To further evoke a school crossing, children's handprints will be cut out of the steel structure, reducing wind loads and breaking up the monotony of a solid steel structure.



Fig. 4.107 Proposed crossing at Horace Mann and 16th St.



Fig. 4.108 Proposed crossings to improve connectivity

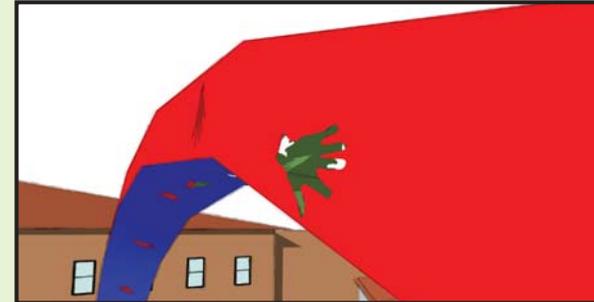


Fig. 4.109 Handprints emphasizing child safety

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This is the intersection of Warren and 5th Street by Heber U. Hunt Elementary School and is a typical intersection for the city of Sedalia. Our solution can be applied with minor alterations to other locations throughout Sedalia. -Some changes that can be made are attempts to make the space more pedestrian friendly and/or attempts to raise awareness of the driver and the pedestrian.

The street lights have been lowered to accommodate the human scale. The street lights can be oriented in the direction of pedestrian travel to reinforce pedestrian movement. The ramps leading to the crosswalk are colored yellow to caution pedestrians visually and textured differently as a physical caution. Audible cautions may be incorporated into pedestrian crosswalks to aid the visually impaired.

The crosswalks are raised as a continuation of the pedestrian space. This makes the motorists feel as if they are crossing the pedestrian's path rather than the pedestrian having to cross the motorist's path. The crosswalks should be paved, painted or textured separately to place emphasis on difference of the spaces. Crosswalk pavers should be oriented perpendicular to the flow of traffic to reinforcing the flow of pedestrian travel.

The crosswalks have been given a curving shape intended to encourage the pedestrian to face oncoming traffic at all times. The pedestrian's periphery is always turning toward oncoming traffic, increasing awareness of the oncoming vehicular traffic.



Fig. 4.110 Proposed crossing at Warren and 5th St. by Heber Hunt Elementary School



Fig. 4.111 Adding lighting and audio signals services all citizens



Fig. 4.112 By curving the path towards oncoming traffic, pedestrians always have motorists in sight

## Recommendations

The intersection of Highways 50 and 65 is the most heavily travelled intersection in the city. It should be avoided for major pedestrian travel. But the issue of pedestrian crossing still needs to be addressed for the potential occurrence. Generous time must be allotted in the electronic crosswalk system for pedestrian travel. Additionally, pedestrian-safe medians may be created to require pedestrians to cross no more than 3 lanes at a time.



Fig. 4.113 Adding a median allows pedestrians to cross minimal vehicular traffic



Fig. 4.114 Proposed crossing at Highways 50 and 65

## Katy Trail and Highway 65 Bridge

The current condition of the Katy Trail bridge crossing Highway 65 is not distinguishable. There is little to no signage explaining declaring its presence or its entrance. Katy Trail users have no access to the highway and pedestrians along Highway 65 have no obvious access to the trail.

Since the Katy Trail and Depot are such large pieces of Sedalia's history, there is no reason that the bridge over Highway 65 should be any less of a distinguishing element. The signage should be bold and emphasize the Katy Trail and the new SMART system.

The improved bridge will emphasize the importance of the SMART system by visually showing how the transportation systems interact. Access ramps are applied from the trail down to the highway, allowing for ADA (handicap) accessibility. Also connecting the two transportation types is a green space gathering area for people using the linear park along Highway 65's Katy Trail crossing.

The design of this bridge emphasizes the Rails to Trails idea. The Katy Trail is an old railroad, so the bridge can remind passerby of the heritage of Sedalia. The new ramps leading up to the Katy Trail are lined by trellis guardrails covered in ivy. The sides lining the Katy Trail are designed like railroad tracks.

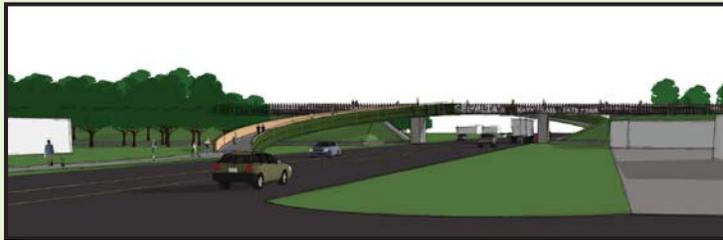


Fig. 4.115 Katy Trail Bridge across Highway 65



Fig.4.116 Convenient crossing for trail users



Fig. 4.117 New bridge offers a safe way to get across Highway 65

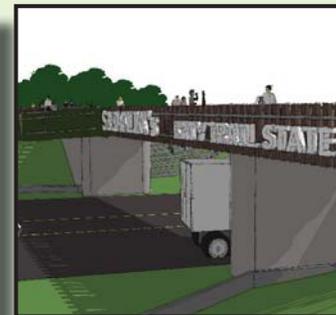


Fig. 4.118 Possibility to reuse railroad ties along bride

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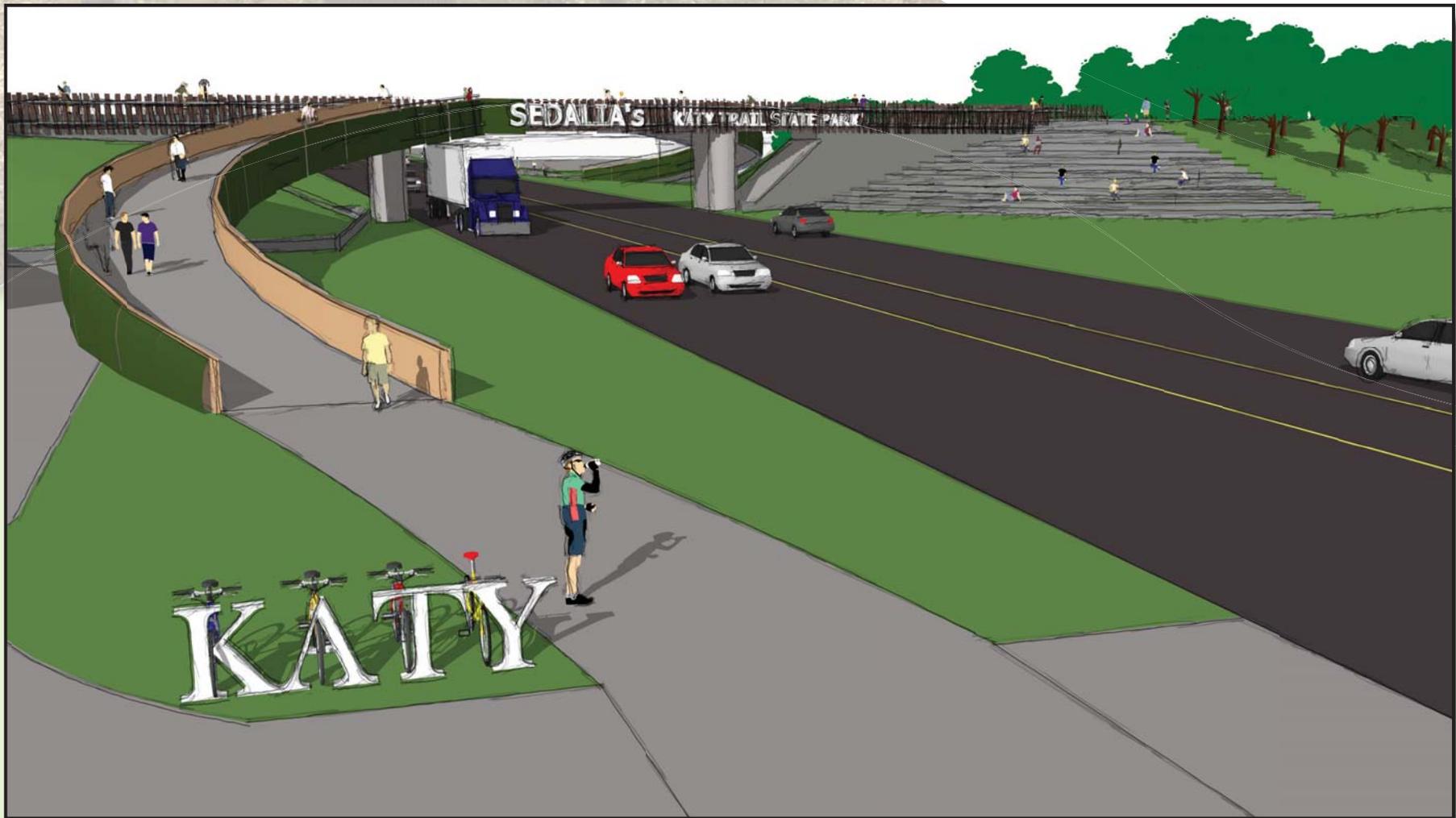


Fig. 4.119 New signage and a glorified pedestrian overpass offer a grand entrance into Sedalia

## Downtown

Downtown Sedalia is an economically thriving district of small businesses that cater mostly to customers who arrive by automobile. We examined the downtown streetscapes to see how a more functional, conducive and cohesive bicycle and pedestrian system could be introduced.

A proven traffic calming technique is to narrow the width of vehicular lanes in a downtown district; this slows the vehicular speed and improve pedestrian and bike safety and make the downtown a more comfortable place to work and shop. The economic cost of such an alteration would be minimal; the city would only have to adjust the lane lines slightly.

In addition to lane narrowing, eliminating parking on one or both sides of the street would provide the necessary space for the addition of a bike lane and wider sidewalks. This would improve the bike and pedestrian safety and promote a more enjoyable streetscape experience.

We recommend the addition of bike boxes at all major intersections to further increase the bicyclist's safety. This places the cyclist in front and in clear view of the vehicles at traffic lights and insures that the vehicle yields to the cyclist.

The alleyways in the downtown area are currently under-utilized. These alleyways provide a great opportunity for pedestrian and bike paths and could easily connect the downtown streets safely and effectively by utilizing already existing must be given to the development of these bike and pedestrian alleyways:

- Lighting must provide a safe environment for the users
- Greenery and seating options should be provided to promote a more alluring atmosphere along these pathways
- A variety of retail and entertainment activities should be considered to activate the pathways
- Secondary business entries should be encouraged

For comparison, the accompanying diagrams show Sedalia's Wal-Mart Supercenter parking lot superimposed over a map of the downtown. This diagram illustrates that walking just halfway across the Wal-Mart parking lot is as long, as walking from existing downtown parking lots to nearby shops and restaurants.



Fig. 4.120, 4.121 A diagram of downtown on the left, compared with a diagram of Wal-Mart's parking on the right (the white shapes are existing parking lots). A walk across half of Wal-Mart's parking lot is a similar distance as one block downtown.

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Fig. 4.122 An example of a thriving residential streetscape

## Defining Streetscapes

Streetscapes are the combination of all transportation systems converging around the streets; the collaboration of bike lanes, trails, sidewalks, public transportation, and vehicles to create a dynamic and inviting atmosphere. The entire interconnected system comes together within a streetscape.

Some design options and examples of what a thriving streetscape can be, and the elements applied to create a successful atmosphere are as follows:

- The addition of vegetation and various green spaces consisting of grass, flowers, bushes, and trees can create a more inviting and pleasant atmosphere.
- Increasing the number of areas for gathering and resting (such as bus stops, benches, etc.) can create a strong social atmosphere and encourage people to get out more often.
- The addition of dynamic design elements (such as highly developed bus stop shelters specifically designed for each location) can create site specific identities and make a much more vibrant streetscape.
- Offering clear material changes in order to clearly identify the different modes of transportation. For example, the streets could be asphalt, the sidewalks could be concrete, the trails could be stamped concrete, and the bike lanes could be colored asphalt. There are endless combinations that could be applied to make the system safer and more easily discernible.



Fig. 4.123 Trails, sidewalks, bike paths, and bus stops converging

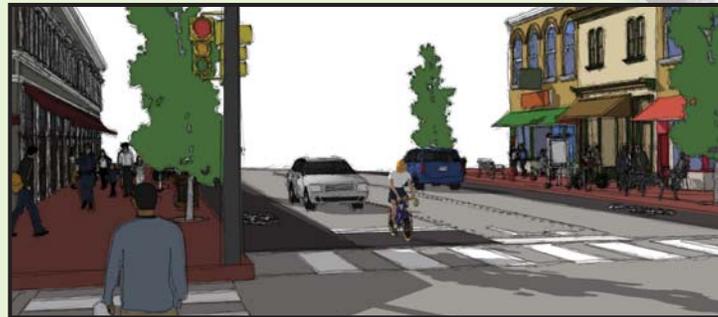


Fig. 4.124 Crossings, sidewalks, bike lanes, and streets downtown

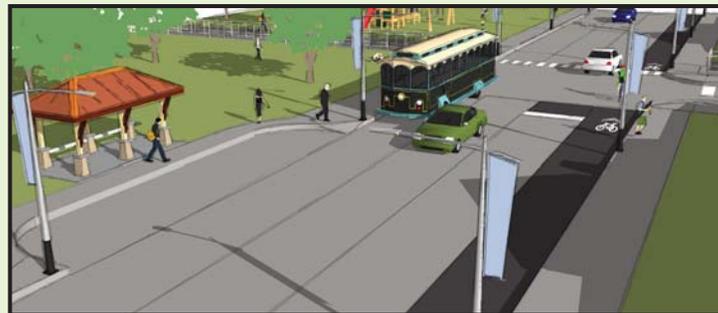


Fig. 4.125 Another example of the combined transportation systems

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## Recommendations

### Lighting:

A successful street and trail lighting system can enhance the streetscape of the city. There should be different types of lighting for vehicular and non-vehicular traffic. Shorter light poles using lower wattages are the most appropriate types of lighting for relating more closely to the pedestrian. Larger light poles using higher wattages are more appropriate for relating to the automobile. Therefore sidewalks, bike lanes and trails should all be lit with lower luminaries and streets should be lit with larger luminaries. With innovative streetscape lighting designs, the ability to use solar-powered lights becomes readily available and has the potential to increase the sustainability of Sedalia and possibly even boost the local economy.

By adding aesthetically pleasing solar street lamps along the outer edge of the widened sidewalks, the streets will become much more enjoyable to interact with and they will be cheaper to maintain in the long run. They will also allow motorists to clearly see if someone steps into their path.

Further, lighting along the sidewalks will create an ambient mood and set the tone for evening activities. By updating some existing lighting and even adding new pedestrian focused lighting the citizens of Sedalia will feel safer and will be more apt to utilize the SMART system even after the sun has set. Along the boulevards and in the downtown area light posts can also function as a place to house banners (for festivals and holidays).

Bollards and smaller post lighting can be placed along the proposed system of trails to enable prolonged usage. They can even be specifically designed for the Sedalia trails and really focus on the pedestrian. The most appropriate solution would probably be to incorporate a system of solar-powered, highly designed, site specific bollards set up at equal intervals along the trail. This would add to Sedalia's sustainable image and allow the trails to be utilized for longer periods of time.



Fig. 4.126 Boulevard lighting with banners  
98



Fig. 4.127 Sidewalk and street lighting



Fig. 1.128, 129, 130 Examples of various lighting options



Fig. 4.131 Bollard lights along the trails

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## Seating:

There should be ample seating (for waiting and resting purposes) set up all along the SMART system. Besides offering a place for relaxation, sidewalk seating is also a great gathering space that increases the social life of the downtown. It is common to provide seating in arrangements that inspire and encourage conversation between strangers, in addition to the intimate seating of a more private setting (such as long the trails).

When surrounded by landscaping, benches become attractive, comfortable spots amidst the downtown activity. Some appropriate options for seating in the downtown area and other areas of high traffic are benches that incorporate sculptural elements and/or planters.



Fig. 4.135 Seating along a proposed sidewalk



Fig. 4.132, 133, 134 Examples of various seating options



Fig. 4.136, 137 Examples of various seating options

## Recommendations

### Waste Management

Along with increased pedestrian activity comes the potential for increased litter. The addition of a variety of modern trash and recycling receptacles will help Sedalia become a fresh and more environmentally friendly city.



Fig. 4.138 Receptacle placed along proposed sidewalk



Fig. 4.139 Variety of trash/recycling receptacles. Recycling containers should be placed in the high traffic areas (such as downtown and along the proposed linear park system)



Fig. 4.140, 141 Examples of waste management options

In recent years, new innovative designs of trash cans have allowed for a sleeker functionality that contrasts the traditional, bulky receptacles. The appearance of the trash receptacles should remain the same throughout each designated area (downtown, along the trail, in neighborhoods, etc.), to compliment the atmosphere of each streetscape.



Fig. 4.142, 143 Examples of waste management options

In order to achieve a successful waste management system throughout the city, Sedalia must have a reliable maintenance crew that is conscious and attentive to the emptying of the receptacles and recycling processes for the city to uphold a clean and sustainable image.



Fig. 4.144 A reliable waste management crew is essential to maintain cleanliness in Sedalia



Fig. 4.145 Sample waste receptacle

## Security Measures:

Light System - motion lights to let you know when someone is on the property.



Fig.4.146, 147 Examples of security systems using lights

Alarm System - motion censored alarm system lets you know when someone is in an area when they're not supposed to be.



Fig. 4.148, 149 Examples of security systems using alarms

Camera/Alarm System - alarm sounds when triggered and camera watches multiple areas and is wired back to a central security area



Fig. 4.150, 4.151 Examples of security systems using cameras

Push Button System - provides anyone with the ability to contact security whenever they're needed - on site security will assist once the button has been pushed.



Fig. 4.152, 153 Examples of security systems using push-buttons

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## Recommendations

### Bike Racks

Bicycle racks should be installed for easy use and convenience, providing accoutrements needed for people to bike. These should be placed at community destinations, such as at schools, libraries, the city hall, theatres, and convenience stores. Below are some specification, suggestions, and facts about bicycle racks.

- The space between bars should be a minimum of 1 ½ inches for the bicycle tire to fit through.
- Chains could be welded onto the racks so the biker can ride up, slip the chain through their tire, and lock it. This stops the biker from carrying a heavy chain around. Instead bikers can simply carry a lock with them.
- Bicycle racks must be located in lit and visible spaces to prevent vandalism and theft.
- Up to 10 bicycles can be stored in the space occupied by one car.
- Hooks can be installed on walls for vertical storage in tight areas.
- Racks should be made of steel and powder coated to ensure long life and durability.

To encourage the transition from automobile to bike transportation, the city should consider ways of enticing people to bike throughout town. For example, replacing parking on the streets with bike racks and bike lanes allows more people to

bike. Specialty bike racks can also respond to their surrounding environment. For example, a dollar sign shaped bicycle rack can be located outside a bank, and a guitar shaped bike rack can be placed outside a night club. Keywords that reinforce communal identity can form bicycle racks such as ‘SEDALIA’, ‘KATY’, and ‘SMART’.



Fig. 4.154 Alternative “KATY” Bike Rack



Fig. 4.155 Alternative “KATY” Bike Rack



Fig. 4.156 Alternative “SEDALIA” Bike Rack



Fig. 4.157 Alternative “SEDALIA” Bike Rack



Fig. 4.158 Suggested bik rack for a shoe store



Fig. 4.159 Music store bike rack



Fig. 4.160 Bank Bike Rack



Fig. 1.461 Bike rack example



Fig. 4.162 Another suggested bike rack



Fig. 4.163 Artistic bike rack

## Signage



Fig. 4.164 This sign could be used all over the city and functions more as a warning sign than an actual barrier for protection. It is a fairly inexpensive way to keep pedestrian crossings safer. Research has shown that crosswalks featuring this type of sign significantly increase the percent of vehicles stopping for pedestrian from 62% to 81%.



Fig. 4.165 This type of sign could be used along the trails and will create a safer non-vehicular environment because it creates a right-of-way for pedestrians from vehicular and bicycle traffic.



Fig. 4.166 This on road sign can be stamped into the surface or simply painted on the asphalt. This symbol is used in areas of high pedestrian traffic, such as schools or churches



Fig. 4.167 This kind of sign could be used in areas where only pedestrians are permitted or where service vehicles are allowed access (such as entrances and exits to pavilions along the trail).

## Recommendations



Fig. 4.168 This sign could be used along the trails as a reminder or educative element to instruct cyclists on proper bicycling rules and how to follow them.



Fig. 4.169 These signs can also be stamped into the asphalt surface or simply painted on. This option is cheaper than metal signage and can be applied more often for a repeatable visual reminder.



Fig. 4.170 This sign reminds pedestrians that they have a specific area designed specifically for their use and that they should remain in that area for their own safety and for the safety of others.



Fig. 4.171 These signs are good reminders for vehicular traffic running alongside the inserted bike lanes. They have the potential to increase traffic's awareness of cyclists and remind that the cyclists own right-of-way.



Fig. 4.172 This particular sign can be used all over the city in high traffic areas, including vehicular and/or pedestrian traffic. The signs may also suggest doubled fines for vehicles that put pedestrians in danger.



# Recommendations

## Park and Plug

Encouraging programs are crucial to the success of SMART 2040. The infrastructure can be put in place, but the community fully utilize it unless they know how to correctly function within it.

One suggested program for the SMART system involves electric vehicles. They are a more sustainable practice and would support a more environmental, walkable Sedalia. Electric cars release fewer emissions into the air, as well as economically freeing citizens from fluctuating gas prices. Free ‘plugs’ for electric cars could be offered by business or the town of Sedalia as SMART advertising and SMART encouragement.

Segways are another sustainable option for moving around town. These vehicles could utilize the trails system or designated lanes. Some cities even give tours via Segway. These transporters could also utilize the plug-ins around town.



Fig. 4.181 Segways using trails



Fig. 4.183 Electric car plugged in

## Safe Routes to School

School children arriving safely at school is a very important part of the SMART system. Sedalia already has begun utilizing the concept of a walking school bus. This is a very good, safe approach to children getting to and from school safely that should be elaborated upon.

Sedalia should seriously consider creating more walking school bus routes. This allows children to actively use the SMART system.



Fig. 4.180 Designing to accommodate future technologies is essential



Fig. 4.182 Walking School Bus

The SMART system in as a whole encourages safe routes to all destinations around town. Therefore, school children will also have routes to safely arrive at school, via sidewalks, trails, bike paths, and the public transit.

## Funding

Funding for this massive undertaking becomes a big concern. As suggested in the following pages, phasing this project will significantly help in the feasibility of the SMART system. However, other assistance will be needed. Increasing community taxes is one option. There is also some government and other agency funding available.



Fig.4.184 Suggested educational sign for Sedalia's bike system



Fig. 4.185 Educational signs posted in bus stops



Fig. 4.186 Bike rental program

The following are some suggested organizations to contact:

- ASHTO standards
- Americantrail.org
- American Greenways
- MODOT – bicycle trail specifications
- League of American Cyclist
- Complete the Streets
- Recreational Trails Grant (RTP)
- Land Water Conservation Fund (LWCF)
- IRS: which gives up to \$240 to a person to offset fees for biking to work
- [fhwa.dot.gov/environment/bikeped/](http://fhwa.dot.gov/environment/bikeped/)

## Bicycle Programs

Bike and pedestrian safety is important to a community when applying a trail system. The benefits of the SMART system allow people to bike or walk short trips and practice exercise in daily life.

The community needs an education program to inform bikers, pedestrians, and motorists how to safely share the roads. Sedalia can enact this education program by requiring citizens to take educational classes, and offering incentives when the program is complete. In Philadelphia, the Neighborhood Bike Works Program offers programs for kids and adults. One they use is the Earn a Bike Program, which requires children to attend fourteen free after-school lessons teaching them how to repair bikes, the rules of safety, and proper bike handling. When the course is complete, the students select a donated bike, fix it up, and keep it.

The Bicycle Friendly Communities Campaign is an awards program recognizing municipalities actively support bicycling. A Bicycle-Friendly Community provides safe accommodations for cycling and encourages residents to bike for transportation and recreation.

Some programs from the state and federal level can be adapted and applied to Sedalia. Safety is the top priority of the SMART System.

Below are some organizations providing bike safety information and examples of cities that have successfully implemented similar programs.

Bicycle & Pedestrian Program of the Federal Highway Administration's Office of Human and Natural Environment promotes bicycle and pedestrian transportation use, safety, and accessibility.

Each State has a Bicycle and Pedestrian Coordinator in its State Department of Transportation to promote and facilitate the increased use of non-motorized transportation. This includes developing facilities for the use of pedestrians, bicyclists, and public educational. The State Coordinators can help with questions specific to your state.

The FHWA Bicycle & Pedestrian Program issues guidelines and is responsible for overseeing that requirements in legislation are understood and met by the implementing agencies.

On the FHWA site is the federal funding spent on pedestrian and bicycle projects in each state, available federal funding sources, existing legislation, and guidance on accessible design.

FHWA also sponsors resources such as the Pedestrian and Bicycle Information Center which provides information on engineering, encouragement, education, and enforcement topics. The Center was established with funding from the US DOT and is operated by the University of North Carolina Highway Safety Research Center, in cooperation with the Association of Pedestrian and Bicycle Professionals.

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# Recommendations

## SMART 2040

The SMART transportation system being proposed for Sedalia is a large project. It can be very exciting to envision Sedalia as a walkable city containing minimal car usage, but it probably seems like an overwhelming proposal. However, when applied in phases, this system can be built up over time until Sedalia reaches this ultimate goal. For this system to work the many pieces must be built up together. We are proposing a layering system, meaning each element depends on the others to create a successfully walkable and livable community. Therefore, it is important to understand that the SMART system cannot be achieved overnight, and should be thought of as a long term project achievable in 30 years.



Fig. 5.1 Logo for a new walkable Sedalia

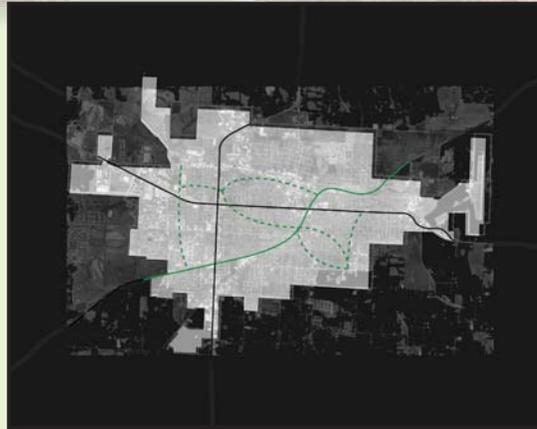


Fig. 5.2 Trails

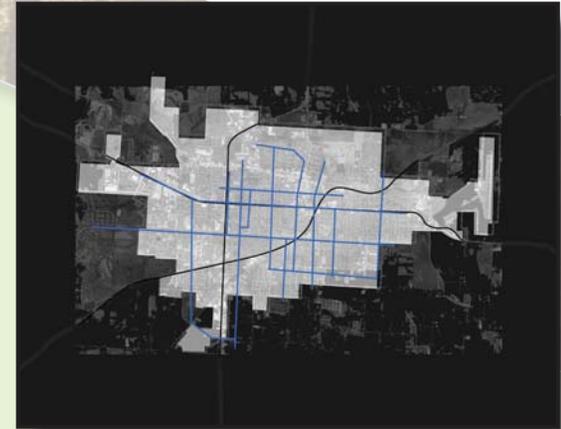


Fig. 5.4 Bike Lanes



Fig. 5.3 Mass Transit



Fig. 5.6 Sidewalks

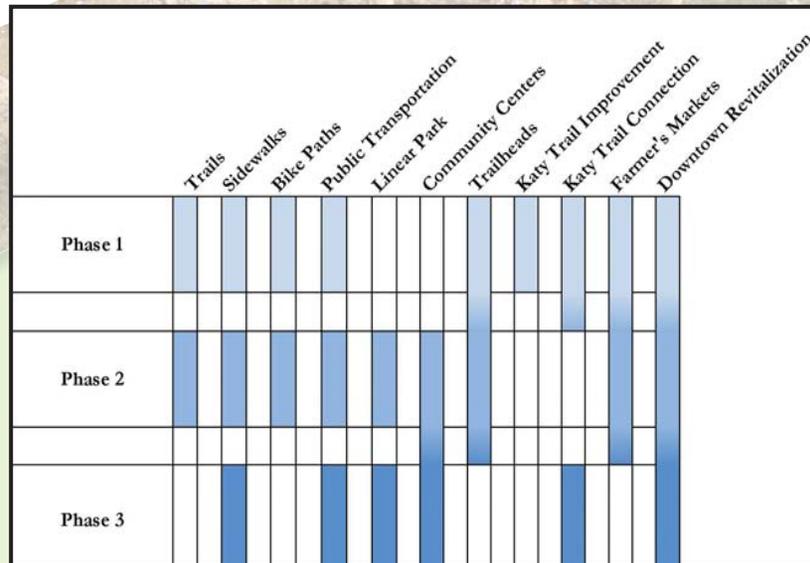


Fig. 5.7 Chart depicting a suggestion of how to manageably achieve the SMART system

This diagram shows the stages of the phasing system. The blue bar represents where a phase is enacted. The white space represents where the previous phase must be completed before continuing on. For example, sidewalks have three stages. Phase one of the sidewalk system has to be wholly installed before phase two can begin. The community centers, in contrast, don't begin construction until phase two. No white bar is between phase two and three, meaning phase two and phase three are continuous with no major completion required in between.

Phase 1

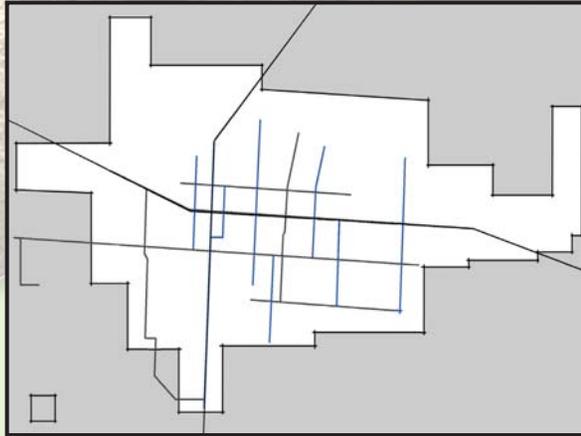


Fig. 5.8 Phase 1 Bike Lanes

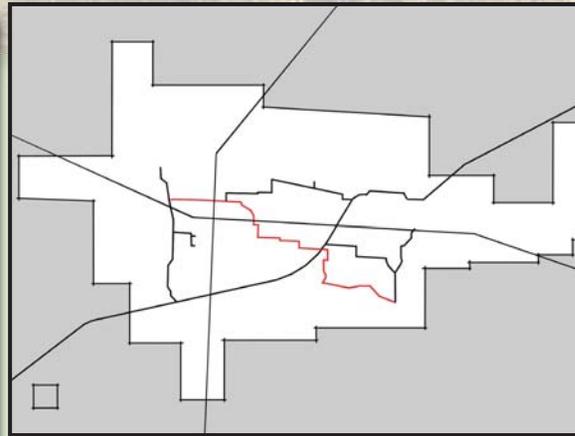


Fig. 5.10 Phase 1 Trails

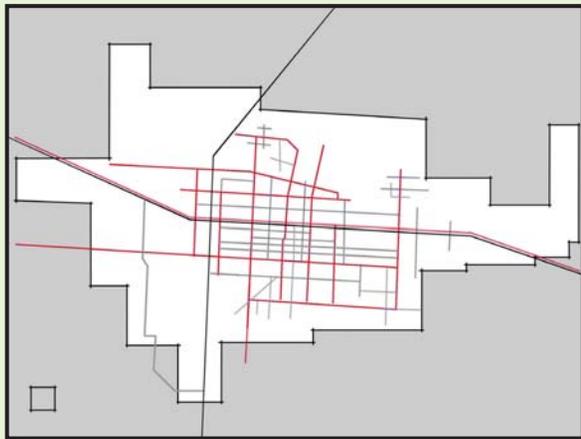


Fig. 5.9 Phase 1 Sidewalks

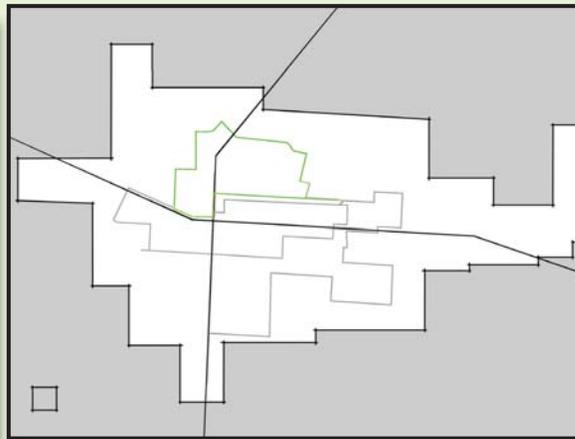


Fig. 5.11 Phase 1 Public Transit

# Phasing System

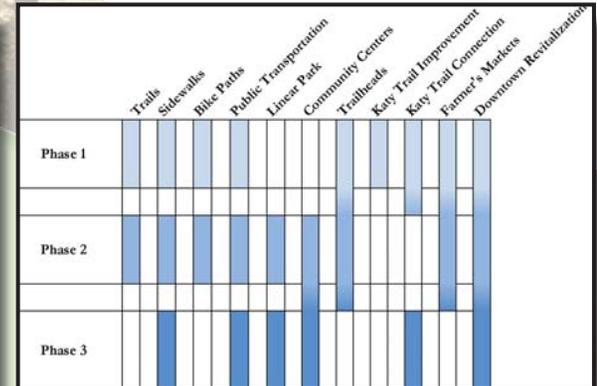


Figure 5.12 Phase 1 Suggested Chart

Phase 1 contains the foundation and initial components of implementation, which require immediate attention. The connection of the Katy Trail is one of the projects identified as critically important. Also, improvements to road signs, bike lane markings, and crossings along the current streets connecting the Northeast Katy Trail are important for safety and identity.

Additional projects to be completed in the first phase are 'home run' projects, which develop community support and gain public momentum. These are relatively easy projects with a lot to gain. By creating a trail perpendicular to the Katy Trail, Sedalia will gain iconic recognition and build identity. Completing the project within drainage ditches is a good choice since it is already city owned land and relative beautification is high.

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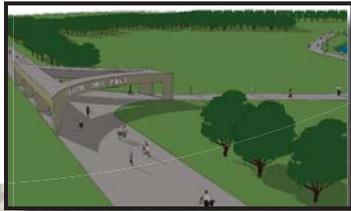


Fig. 5.13 Possible Katy Trail entrance to Clover Dell Park



Fig. 5.14 Conversion of an alleyway into an urban trail



Fig. 5.18 A more pedestrianfriendly intersection at Hwy 65 and Hwy 50, with pedestrian safe zones at medians and brightly painted or separately texture crosswalks



Fig. 5.15 Bike Lane and Sidewalk Intersection near Heber Hunt Ele.



Fig. 5.16 An Active trail encourages community interaction and a healthy lifestyle



Fig. 5.17 Extending bike lanes into urban downtown creates mobility and awareness



Fig. 5.19 Crosswalk at 16<sup>th</sup> and Horace Mann Elementary

## Phase 2

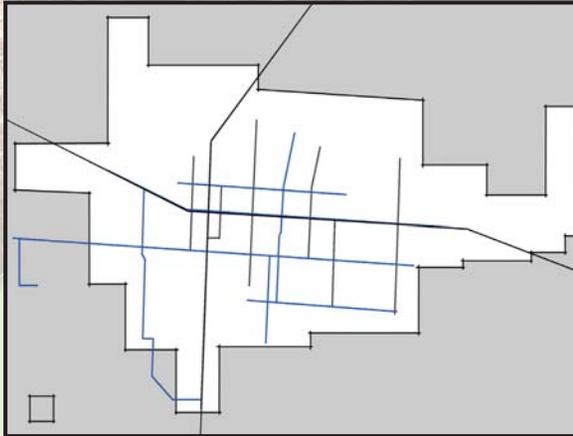


Fig. 5.20 Phase 2 Bike Lanes

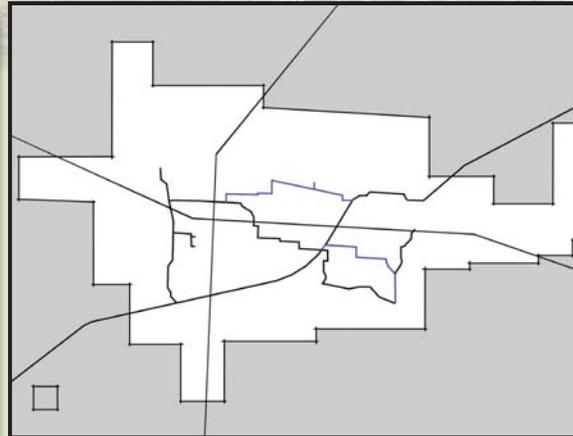


Fig. 5.22 Phase 2 Trails



Fig. 5.21 Phase 2 Sidewalks

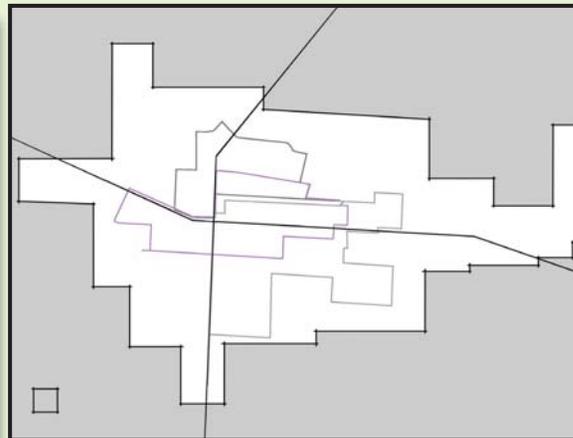


Fig. 5.23 Phase 2 Public Transit

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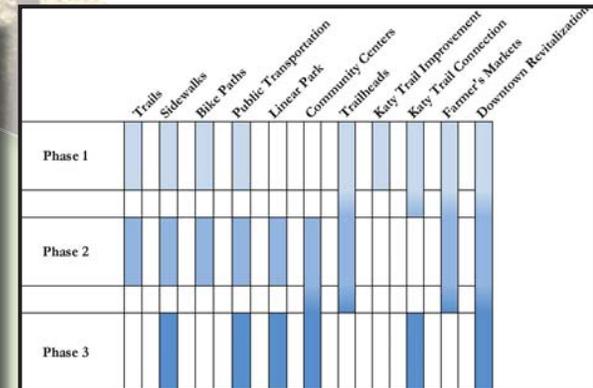


Figure 5.24 Phase 2 Suggested Chart

Phase 2 incorporates increasing complexity and uniqueness into the development of Sedalia's trails, sidewalks, bike lanes and mass transportation system. This phase focuses on improving the connectivity between each of the layers. Intersections become more defined features of this phase with the complexity of the overlap layers becoming more apparent and unique. Farmer's Markets become mobilized markets in this phase and community centers begin to become decentralized throughout the city. This decentralization begins to reinforce the development of SMART Districts. The passage of legislation strengthens each district into more complete walkable zones, with the development of neighborhood markets, local community centers, post offices and other daily needs stores.



Fig. 5.25 Developing a mobile Farmer's Market provides fresh produce within walking distance of each district each week



Fig. 5.30 In the second phase intersections of bike lanes, mass transportation, sidewalks and trails create unique spaces where mobility and ease of movement are celebrated



Fig. 5.26,27 Pavilions create outdoor spaces for community involvement and interaction, emphasizing the experience of the outdoors while encouraging trail use



Fig. 5.31 Alleys Downtown may be transformed to urban walkways



Fig. 5.33 Drainage ditches transformed into river walks



Fig. 5.28 Possible Trail interaction with a Community Center



Fig. 5.29 Heavy Timber Bus Stop provides shade, shelter



Fig. 5.32 Signage along the Katy Trail Bridge Across Hwy 65



Fig. 5.34 Add curves and landscape to the Katy for interest

## Phase 3

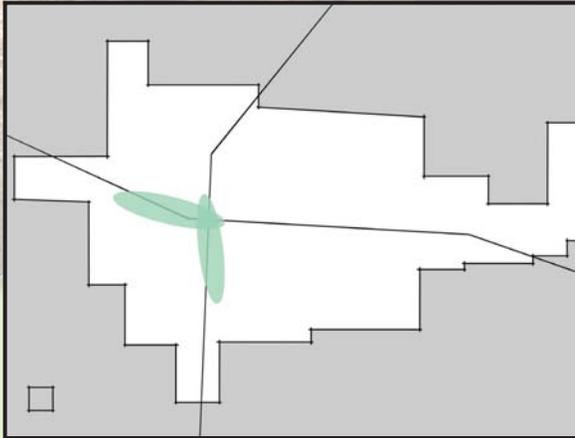


Fig. 5.35 Proposed Linear Park

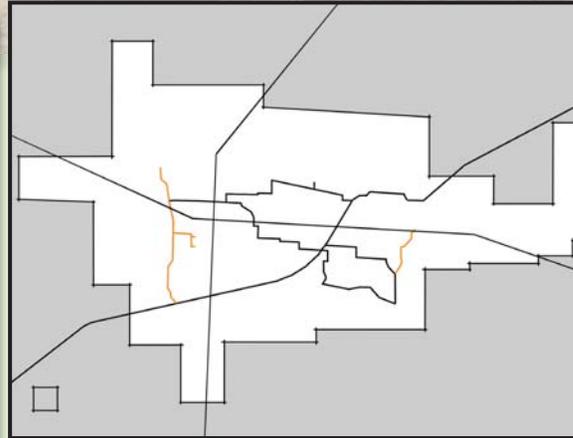


Fig. 5.37 Phase 3 Trails

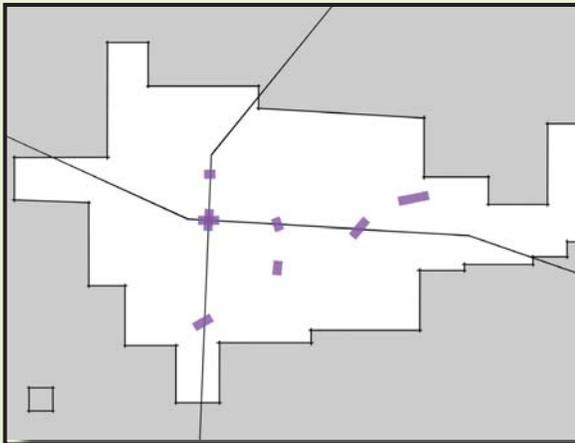


Fig. 5.36 Proposed Bridges and Major Crossings

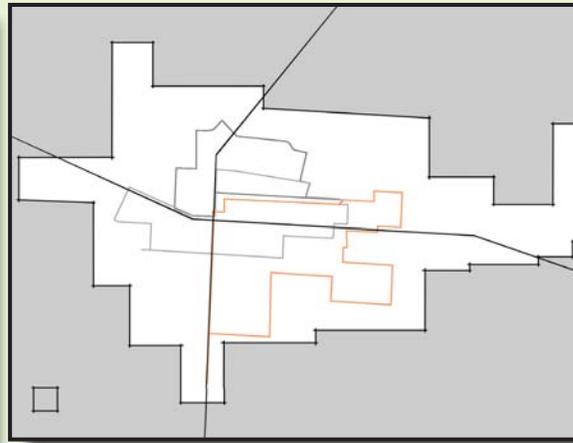


Fig. 5.38 Phase 3 Public Transit

## Phasing System

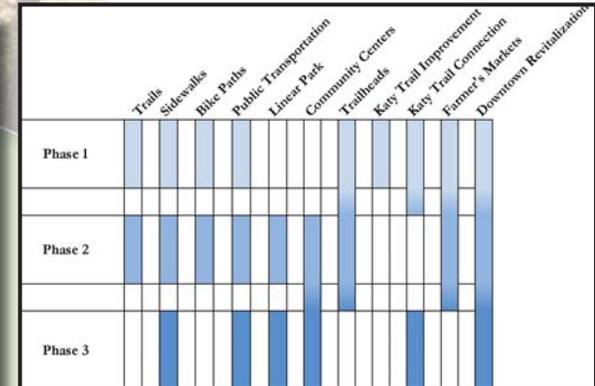


Figure 5.39 Phase 3 Suggested Chart

The final phase of implementation incorporates the many unforeseen elements. The visioning process must be revisited every five years to ensure that the city's continuing needs are met. The Katy Trail is an integrated showpiece of pride within the community. Within Sedalia's city limits is the most beautiful, interesting, and extensive portion of the Katy Trail, which raised the standard for urban trails and improved the quality of the trail.

Rising fuel costs and an emphasis on livability have led to an active lifestyle for which Sedalia has readily prepared. Walking is the norm in Sedalia, communities are knit tightly, and a strong sense of identity exists in each district.

Sedalia has a keen understanding of the changing world and is reaping the benefits of its previous investments.

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Fig. 5.40 Bridge and Gateway to Sedalia at the intersection of Highway 65 and the Katy Trail



Fig. 5.42 Phase 3 Develop several mixed-use urban villages

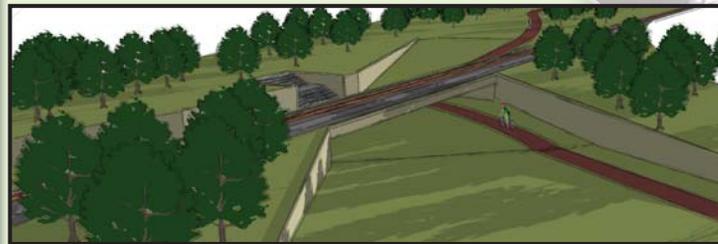


Fig. 5.43 An elaborate solution to the Katy Trail connection, connecting Housel park with the Katy Depot



Fig. 5.41 A linear park allows safe, convenient access to the existing commercial district offering a healthier more rewarding lifestyle



Fig. 5.44 A linear park acts as both a greenway and a gathering space

## Shane's Approach

My approach to design is structured on the fundamental belief that the primary purpose of architecture is to improve the lives of human beings. This need is constantly changing and evolving with the evolution of man. It is up to each generation to redefine their needs. With a deteriorating natural environment and an ecosystem out of balance; our need is very clear. It is this human necessity of design which intrigues me most and drives me to constantly rethink how we interact with each other and the built environment.

When given the chance to work with Sedalia, I seized the opportunity to address the underlying problems which plague American cities across the United States. The primary issues of concern that I focused on are all interrelated. The answer to one must begin to address them all. The issues are urban sprawl, suburbia's failure to address humanity, dependence on the car and the modern cities lack of livability.

I sought a new alternative; there is no norm only, normalized behavior. I examined the effects of the previously mentioned issues on Sedalia. I then applied this more generalized approach to Sedalia's specific situation. Through a few simple restructuring moves, reinforced by new policy

such as rezoning, Sedalia can begin to rethink its future. Sedalia is a great case for this exercise because there are so many untapped resources to be utilized in the reformation of the city.

The major weakness of our approach is the over-complication of the scope of the project by assuming a large scale both within the context of the city and in the implications of our proposal. The result of this approach to the project was a systematic assumption of the debt that all previous generations had surmounted. We inherited all conceivable failures of urban design and attempted to propose solutions.

The greatest strength of this proposal is the scale of its vision. The project tackles some of the most plaguing issues of our time; the relevance, importance and potential are invaluable. Combined with Sedalia's foresight, the implications of this vision may have extremely rewarding effects. If Sedalia can work to create a more sustainable future now, it can become a model for other cities to follow.

Other strengths include the creativity of the project. Within this creativity is the relationship between complexity and simplicity. While the combination of each of the proposed systems and

the relationship between them are increasingly complex, the systems themselves are simple.

The final and perhaps greatest accomplishment, if only on a more personal level, is that the whole is greater than the individual components of this project. The sum of our work on this project is greater than our individual capabilities; subsequently, the project reflected the team's ability. Working on this project has been a rewarding and cultivating experience and I hope that the project reflects this work.

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## Team Member Approaches

## Britney's Approach

Being from a much smaller town than Sedalia, I know the difficulties and challenges in proposing something new and innovative. Once moving to Springfield, I realized what unique and great spaces can be created when design-oriented people make their visions reality.

In being introduced to Sedalia, our whole group immediately recognized some great assets. There is a great park system, with successful green spaces evenly distributed throughout the community. The Katy Trail, a very unique attribute, runs directly through the center. The State Fair Grounds provides great facilities for events year-round, providing citizens with a variety of entertainment. Sedalia also holds various other attributes not typically collaborated in smaller towns, such as an air force base and a community college. The downtown area is also not a dead zone, like many are, and the Amtrak has a connection there.

Having an interest in urban design, I was very excited to address the challenges presented by Sedalia. In seeing their concerns and attributes, I wanted to give Sedalia the most unique identity possible. With so many unique issues and assets, the designs addressing Sedalia need to elaborate individuality. Sedalia is already a destination for hundreds of thousands a year, going to the State Fair and traveling the Katy Trail. This stop might as well be a memorable location, making it a more desired place for travelers, but more importantly creating a great community for Sedalians living within.

Since we were asked to assist this community with their application of bike paths, trails, and sidewalks, this immediately turned the design over to the efforts of sustainability. We aren't suggesting a sustainable lifestyle for the sake of being trendy and popular. Sustainability is the politically correct thing to do right now, yes. But we are suggesting SMART Sedalia 2040 for the benefit of the community. The sustainable lifestyle we are suggesting would promote healthier lifestyles, create a more beautiful city, create a more efficient and interesting form of transportation, be more economical for individuals, and promote connection between the people, creating a more cohesive, close, and interactive community.

These are my design values – to create better communities for people to reside in. Designing places is different than just creating spaces. A place is a destination, an enjoyable place people want to go gather and interact. This is what Sedalia should become – a more cohesive community. A place should create happy people, intriguing spaces, and also be functional. Providing some unique, monumental design, a sustainable lifestyle, and approaching all the elaborated issues with functionality and extravagance was my technique to better the community and stretch their perception of reality. This was my design approach to Sedalia's Movement for an Active and Recreational Tomorrow.

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## Amanda's Approach

When we began this project the community's excitement about creating a more walkable city really got me thinking about walkability. Active living is a new kind of life style that people in other cities have adopted. They change the way you move around the city and the way you think about your life. I wanted to figure out a way that we could make Sedalia an active and walkable city.

When physical activity is integrated into daily routines, you have active living. Children should participate in at least 60 minutes of moderate-intensity physical activity five or more days per week. Unfortunately, 64 percent of youth do not meet this recommendation. Policy-makers can help improve active living options by implementing policies and programs in schools and communities that promote routine daily physical activity. I started by looking for other examples of communities around the same size that have implemented this idea successfully.

Columbia, Missouri has made some huge changes to their community to make it a more livable and walkable city. They have improved roads to include bike lanes, fixed and widened sidewalks to make travel more comfortable. They also have a portion of the Katy Trail that runs to the south of their town, and while it is not directly

connected to the town they have made it easy to reach. This has encouraged people from town to utilize the trail as well as invited people traveling along the trail to visit the city.

Taking this idea of active living and finding ways in which to apply it was one of our many concerns for the city of Sedalia. I wanted to find multiple ways that bike lanes could be applied in Sedalia. I believe that bike lanes are a major key to connecting the city as well as connecting people to the Katy Trail.

## Team Member Approaches

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## Robbie's Approach

When approaching the problems facing Sedalia I began by looking at the location of school, parks, and major points of interest within the city. I also started to look at housing and commercial districts and the problem of sprawl within the city. I then turned my attention to how the city could connect these schools, parks, and points of interest as well as solve the sprawl problem. I then started to look at the system of smart growth since it solves all these problems.

There are six main goals that smart growth helps to achieve. The first goal is neighborhood livability. Neighborhoods should be safe, convenient, attractive, and affordable for all people. The second goal is better access and less traffic. Sprawl causes a car to be necessary, while grouping developments can offer more choices other than driving. The third goal is thriving cities, suburbs, and towns. This puts the primary emphasis on cities that are built up instead of building new ones. The fourth goal is shared benefits. This says that all areas within the city will be able to prosper instead of only a few rich areas. The fifth goal is lower costs, lower taxes. It says that by limiting sprawl there will be less cost for things such as cars and help lower taxes by using existing infrastructure. The sixth goal of smart growth is keeping open space open. It says that by building in already built up areas then we aren't building on precious land and destroying natural resources.

Smart growth and the six goals are very difficult to achieve. However, by using ten techniques that have been developed the six goals become much easier to achieve. They ten principles are: 1. Mix Land Uses, 2. Take Advantage of Existing Community Assets, 3. Create a Range of Housing Opportunities and Choices, 4. Foster "Walkable," Close-Knit Neighborhoods, 5. Promote Distinctive, Attractive Communities with a Strong Sense of Place, Including the Rehabilitation and Use of Historic Buildings, 6. Preserve Open Space, Farmland, Natural Beauty, and Critical Environmental Areas, 7. Provide a Variety of Transportation Choices, 8. Strengthen and Encourage Growth in Existing Communities, 9. Make Development Decisions Predictable, Fair, and Cost-Effective, 10. Encourage Citizen and Stakeholder Participation in Development Decisions.

By using creative development strategies Sedalia can preserve natural lands and critical environmental areas, protect water and air quality, and reuse already-developed land. It can conserve resources by reinvesting in existing infrastructure and reclaiming historic buildings. By designing neighborhoods that have shops, offices, schools, churches, parks, and other amenities near homes, residents and visitors have the option of walking, bicycling, taking public transportation, or driving.

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## Megan's Approach

After our first meeting with the committee, I immediately began considering what kinds of trails could be implemented in Sedalia in order to provide the “connected” city that the committee was so anxious to achieve. I was fascinated by this idea of “connection” from the very beginning and spent an extensive period of time doing research and trying to figure out innovative, yet financially feasible ways in which to attain this connection.

I began by looking at examples of successful greenway trails in the United States. I quickly learned that greenway trails are linear paths that make use of public land. They are sometimes used to connect points of interest, landmarks or parks and can dramatically increase the value of surrounding land. I also learned that they commonly replace older, unused transportation modes such as roads, railroads (like the Katy Trail), or canals.

By utilizing existing roadways and open, unused land, a system of city-wide trails seemed extremely feasible and I began to diagram specific possibilities.

I came up with a basic system of primary, secondary, and tertiary trails that would run along some of the major traffic ways throughout Sedalia, utilizing existing sidewalks and drainage

areas. We, as a group, decided that this system of “trails” may not be enough to really convey the ideals of the people of Sedalia. This is where the SMART system developed. The main goal of the SMART system is to completely connect the entire city through a system of multiple modes of transportation that do not rely heavily on the automobile. The overall goal eventually developed into the desire to make the city of Sedalia entirely walkable.

In addition to the new system I became interested in bringing healthier, more active lifestyles to the citizens of Sedalia. In order to accomplish this I began researching different types of zoning that might reinforce walkability in Sedalia’s future. I came across Enterprise Zoning which is a way for the local government to provide incentives (tax breaks and such) for local businesses to develop in a particular area.

This would ensure that commercial and mixed-use developments could be spread evenly throughout the city, making it that much easier for the citizens of Sedalia to travel by foot or by bike to access all of their daily needs.

Another approach I took towards making Sedalia a little more active was looking at the initiation of

a mobile farmers market; one that would actually bring fresh produce to the people rather than requiring that the people drive themselves to the market. The reason for this would be to make sure that everyone within the city would have access to the freshest produce Sedalia has to offer and that it would be within walking distance in order to reinforce this concept of walkability.

At the beginning of this project I was examining the idea of “connection” through a system of trails, but by the end my approach had developed into the desire to make the citizens of Sedalia lead healthier and more active lifestyles through the incorporation of a unique system of multiple modes of transportation.

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## Team Member Approaches

## Travis's Approach

After meeting the committee and hearing the problem statement for the first time, I immediately felt unqualified and questioned whether I had the ability to produce a suggestion capable of making any significant difference. I felt overwhelmed with the project's scale of an entire city, considering that in previous semesters I had only worked with individual buildings. I instantly started looking at precedents and examples of cities that shared qualities similar to what we were trying accomplish. I also started revisiting local parks and trails observing them from a new critical point of view.

From this point I started thinking about how far certain aspects of a walkable city could be pushed. I started wondering where the line existed between what was possible for a city such as Sedalia and what was unobtainable. At this point I became fascinated with the impossible, fully believing it should not simply be discarded, but that there was considerably more to learn from it. I felt that limiting this initial phase of design to what is deemed as "practical" for a city the size of Sedalia severely limited the potential for producing a dignified result.

From here I, and later the rest of the group, started to look at extreme ideal solutions for cities. I was looking into these utopian ideas, not as solutions, but rather extreme ends of a spectrum that could later be dissected. I was taking those ideas and asking what made them "ideal"; what were the positive aspects of these ideas?

Ultimately, I was asking myself if there was any way to keep the positive aspects of these extreme ideas while discarding the negative aspects. Could the good qualities of the unrealistic solutions be kept and introduced into our solutions?

At this point I started looking more into Sedalia. I looked at site context and diagrammed site analysis. I started considering what it meant to be a walkable city. I started looking at what needed to be connected. It was in this stage, that it quickly became apparent that a single mode of pedestrian circulation would not make a walkable city. I realized it would take several different modes working together as a single system to make Sedalia walkable. This is where the layering system was imagined.

After determining the different types of pedestrian circulation and the different destinations that needed to be connected, I was then able to start looking at more specific design details. My approach was representational, and in no case did I imagine a design to be considered final. Rather I imagined them to be viewed as tools to aid in the understanding of our ideas and possibly of the project.

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## Resources and References

Terry Whaley, the executive director of the Ozark Greenways, he told us that 90 percent of pollution can be attributed to driving within 3 miles of your own home. Mr. Whaley also informed us that transportation is the second largest expense within a household. Trails will attract both employers and community members due to tax breaks for people riding their bikes to work as well as for employers providing facilities for bikers to freshen up at work. We found these facts very informative and considered them when designing Sedalia's SMART system.

When considering the different materials used for trails, Mr. Whaley told us the costs for the different types of trails:

- Wood chips for a 6 ft. wide trail would cost about \$15 a linear foot
- Asphalt for a 10 ft. wide trail would cost \$32 a linear foot
- Concrete for a 10 ft. wide trail would cost \$55 a linear foot
- The maintenance for a trail would be \$1500 per mile a year

The best material application for trails projects, according to Terry Whaley, is concrete because of its durability for 30 to 40 years without maintenance. Concrete also allows for nearly every travel type, including bikes, wheelchairs, rollerblades, walking, and running. Asphalt is a close second, having minimal upkeep. It also allows for versatile transportation types. The third material of choice for trails according to Mr. Whaley is gravel. Gravel requires more maintenance and is less cost effective in the long run than the other two options.

Terry also informed us that there is federal funding available for trails as long as certain guidelines are followed while designing the trails. For example, most funding is for trails that are at least 10 ft. wide and use particular paving. Here is a list of places to look for funding for trails:

- ASHTO standards
- Americantrail.org
- American Greenways
- MODOT - bicycle trail specifications
- League of American Cyclist
- Complete the Streets
- Recreational Trails Grant (RTP)
- Land Water Conservation Fund (LWCF)
- IRS: which gives up to \$240 to a person to offset fees for biking to work

## Useful Books

Planning and Urban Design Standards by, Steiner and Butler 2007

This book describes standards and guidelines about urban design. It also has a chapter dedicated to the types of transportation such as automobile, bicycle, and the pedestrian. It illustrates widths, standards and recommendations.

Barrier Free Site Design by The American Society of Landscape Architects Foundation & The U.S. Department of Housing and urban Development Office of Policy Development and Research 1975

This book goes through the different barriers a pedestrian may encounter and gives suggestions for ways to city planners to successfully avoid promoting these barriers. The barriers included in this book can include sidewalk widths, ramps, stairs, walls, parking, vegetation, lighting, signage, bicycle consideration, and site furniture.

Cities For People by, Ronald Wiedenhoeft 1981

This book gives literature and theories about how to make cities more accessible for pedestrians.

For Pedestrians Only Planning, Design And Managements of Traffic Zones by Roberto Brambilla & Gianni Longo 1977

This book gives an understanding of pedestrian zones, how they work, and the different approaches between America and Europe.

Accommodating the Pedestrian Adapting Towns and Neighborhoods for Walking and Bicycling Richard K. Untermann 1984

This book goes through the different issues involved with being a pedestrian and tries to suggest solutions.

Peacemaking on a Budget: Improving Small Towns, neighborhoods, and Downtowns Without Spending a Lot of Money by, Al Selinka & Susan Jackson Harden 2005

This book goes though simple and cheap ways to create a sense of identity for neighborhoods and towns.

Making Places Special Stories of Real Places Made Better by Planning by Gene Bunnell 2002

this book describes what making places special means and gives detailed examples.

Passages by Andy Goldsworthy 2004

This book gives inspiration for ideas and designs that could be introduced along parts of Sedalia's SMART system

## Additional Resources

### AASHTO

<http://www.transportation.org/>

The American Association of State Highway and Transportation Officials advocates transportation-related policies and provides technical services to support states in their efforts to efficiently and safely move people and goods.

### Active by Design

<http://www.activelivingbydesign.org>

Active Living by Design is a national program that establishes innovative approaches to increase physical activity through community design, public policies and communications strategies.

### Active Living Network

<http://www.activeliving.org/>

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 obesity as an individual health problem, the Network focuses on how the built environment including neighborhoods, transportation systems, buildings, parks and open spaces can promote more active lives. The Active living Network gives examples, suggestions and literature research about how communities can reintegrate physical activity into daily life

### The American Public Transportation Association

<http://www.apta.com/>

The American Public Transportation Association works to ensure that public transportation is available and accessible for all Americans in communities across the country.

### American Trails

<http://www.americantrails.org>

The American Trails organization is a national nonprofit organization that promotes organization and communication between all types of trails and trail related activities. They also give awards and help communities discover new ways to fund their trails

### American with Disabilities Act

<http://www.ada.gov/>

The ADA website gives important information about minimum widths and dimensions.

### Federal Highway Administration

<http://www.fhwa.dot.gov/>

The FHWA gives sidewalk design guidelines and existing practices

## Resources and References

### Green Circle Shopping Center

<http://www.greencirclesshoppingcenter.com/>

This website illustrates an example of an environmentally friendly building that addresses issues of sustainability and innovative ways of looking at the shopping center.

### League of American Bicyclists

<http://www.bikeleague.org>

League of American Bicyclist Promotes bicycling for fun, fitness, and transportation. They promote bike safety, bicycle education, safe routes to school, and actively promote a bicycle-friendly America

### LEED

<http://www.usgbc.org/leed>

The Leadership in Energy and Environmental Design (LEED) provides a suite of standards for environmentally sustainable construction.

### MoDOT

<http://www.modot.org>

MoDOT gives state specifications for minimum dimensions and widths for bike lanes and sidewalks. MoDOT also states current pedestrian and bicycle laws.

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National Center for Bicycling and Walking

<http://www.bikewalk.org/>

The National Center for Bicycling and Walking's vision is to make communities bicycle friendly and walkable.

Safe Routes to School National Partnership.

<http://www.saferoutespartnership.org/>

The SRTS National Partnership serves a diverse national community of organizations that advocates for and promotes the practice of safe bicycling and walking to and from schools throughout the United States.

Smart Growth America

<http://www.smartgrowthamerica.org/>

Smart Growth America is a coalition of advocacy organizations working to support citizen-driven planning that coordinates development, transportation, revitalization of older areas and preservation of open space and the environment.

Whaley, Terry

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[terry@ozarkgreenways.org](mailto:terry@ozarkgreenways.org)

Bicycle Friendly Community

<http://www.bicyclefriendlycommunity.org/about.htm>

This status, awarded by the League of American Bicyclists, designates a city that actively supports bicycling. A Bicycle-Friendly Community provides safe accommodation for cycling and encourages its residents to bike for transportation and recreation.



## Resources and References

### LEED for Neighborhood Development

What is LEED for Neighborhood Development?

LEED for Neighborhood Development is a green neighborhood certification program that integrates the principles of smart growth, new urbanism, and green building into the first national program for neighborhood design. It is being developed by USGBC in partnership with the Congress for the New Urbanism (CNU) and the Natural Resources Defense Council (NRDC).

The LEED for Neighborhood Development Rating System integrates the principles of smart growth, urbanism and green building into the first national system for neighborhood design. LEED certification provides independent, third-party verification that a development's location and design meet accepted high levels of environmentally responsible, sustainable development. LEED for Neighborhood Development is a collaboration among USGBC, the Congress for the New Urbanism and the Natural Resources Defense Council.

The pilot program, which began in the summer of 2007 and tested nearly 240 projects, is wrapping up. The pilot experience and further discussion about the rating system led to the creation of a 1st Public Comment Period Draft. The post-pilot version of the rating system, which will be available to the public, is expected to launch in late summer of 2009.

Benefits of Developing a LEED for Neighborhood Development Community:

#### 1. Encourage healthy living

LEED for Neighborhood Development emphasizes the creation of compact, walkable, vibrant, mixed-use neighborhoods with good connections to nearby communities. Research has shown that living in a mixed-use environment within walking distance of shops and services results in increased walking and biking, which improve human cardiovascular and respiratory health and reduce the risk of hypertension and obesity.

#### 2. Reduce urban sprawl

In order to reduce the impacts of urban sprawl, or unplanned, uncontrolled spreading of urban development into areas outside of the metropolitan region, and create more livable communities, LEED for Neighborhood Development communities are:

- Locations that are closer to existing town and city centers.
- Areas with good transit access.
- Infill sites.
- Previously developed sites.
- Sites adjacent to existing development.

Typical sprawl development, low-density housing and commercial uses located in automobile-dependent areas, can harm the natural environment in a number of ways. It can consume and fragment farmland, forests and wildlife habitat; degrade water quality through destruction of wetlands and increased storm water runoff; and pollute the air with increased automobile travel.

### 3. Protect threatened species

Fragmentation and loss of habitat are major threats to many imperiled species. LEED encourages compact development patterns and the selection of sites that are within or adjacent to existing development to minimize habitat fragmentation and also help preserve areas for recreation.

### 4. Increase transportation choice and decrease automobile dependence.

These two things go hand-in-hand; convenient transportation choices such as buses, trains, car pools, bicycle lanes and sidewalks, for example, are typically more available near downtowns, neighborhood centers and town centers, which are also the locations that produce shorter automobile trips.

## Benefits to Project Developers of LEED for Neighborhood Development Communities

### 1. Potentially reduced fees or waiting periods

Increasingly, municipalities are reducing fees or review periods associated with the approval process for community projects that can demonstrate a commitment to sustainability. Successfully completing the first stage of LEED for Neighborhood Development certification (pre-review approval) may assist projects that are still in the planning stages to gain the necessary approvals as expediently and cost-effectively as possible.

### 2. A good impression on your neighbors

A LEED for Neighborhood Development certification can help projects explain the environmental and community benefits of a project to residents and businesses in nearby areas. The rating system also encourages projects to work collaborators with the existing neighborhood to make sure their needs are taken into account.

### 3. Higher tenancy rates

Rising demand for housing and commercial space in highly walkable or transit-accessible areas can result in higher tenancy rates.

## Resources and References

### Heat Island Effect

The Heat Island Effect is when a city is hotter than the urban areas that surround it. The temperature differences are greater during the summer months and at night than they are in the winter and during the day.

Heat Island Effect Impacts:

- Increased energy consumption: Demand for electricity (air conditioning) peaks during hot summer months because of high temperatures. It has been estimated that the heat island effect can increase electricity by as much as 5–10% in cities.
- Elevated emissions of air pollutants and greenhouse gases: Increasing energy demand generally results in greater emissions of air pollutants and greenhouse gas emissions from power plants. Higher air temperatures also promote the formation of ground-level ozone.
- Compromised human health and comfort: Warmer days and nights, along with higher air pollution levels, can contribute to general discomfort, respiratory difficulties, heat cramps and exhaustion, non-fatal heat stroke, and heat-related mortality.
- Impaired water quality: Water temperatures are raised because of the heat island effect. Water that rolls off of hot pavement and rooftop surfaces gets that heat transferred into it. This water then raises temperatures of the water in streams, rivers, ponds, and lakes.

Four Main Strategies communities can take to reduce the heat island effect:

- Increasing tree and vegetative cover
- Creating green roofs (also called “rooftop gardens” or “eco-roofs”)
- Installing cool—mainly reflective—roofs
- Using cool pavements

### Smart Growth

Smart Growth is a system that concentrates growth in the center of the city to help avoid urban sprawl. Communities across the country are using creative strategies to develop in ways that preserve natural land and critical environmental areas, protect water and air quality, and reuse already-developed land. They conserve resources by reinvesting in existing infrastructure and reclaiming historic buildings. By designing neighborhoods that have shops, offices, schools, churches, parks, and other amenities near homes, communities are giving their residents and visitors the option of walking, bicycling, using public transportation, or driving as they go about their business. A range of different types of homes make it possible for senior citizens to stay in their homes as they age, young people to afford their first home, and families of all kinds to find a safe, attractive home that they can afford.

There are six main goals that smart growth can help to achieve:

1. Neighborhood livability
2. Better access and less traffic
3. Thriving cities, suburbs, and towns
4. Shared benefits
5. Lower costs, lower taxes
6. Keeping open space open

Ten principles designed to achieve these six goals:

1. Mix land uses
2. Take advantage of existing community assets
3. Create a range of housing opportunities and choices environmental areas
7. Provide a variety of transportation choices
8. Strengthen and encourage growth in existing communities
9. Make development decisions predictable, fair, and cost-effective
10. Encourage citizen and stakeholder participation in development decisions

## SMART 2040

Sedalia's Movement for an Active and Recreational Tomorrow looks 30 years into the future to what the city of Sedalia could potentially become.

We, at Drury, have made it our task to imagine what kind of future the current citizens of Sedalia will pass on to their children and grandchildren; what kind of legacy this generation will leave behind for future generations to enjoy.

We begin by examining the addition of a system of multiple modes of transportation. This multi-modal transportation system is meant to accommodate users of all kinds; motorists, pedestrians, cyclists, etc. The system is comprised of four different elements that are intended to accommodate the four modes of transportation (walking/running, biking, driving, and using mass transit); these four elements are trails, sidewalks, bike lanes, and mass transportation. This new system should connect nodes within each SMART district, as well as each district to the surrounding districts.

Once this system was laid out, it became apparent that there were several opportunities to make the community even more connected. Through the addition of elements like trailheads, pavilions, community centers, and farmers markets the community can be given the opportunity to become truly engaged and interactive. The introduction of programs into the community (for safety and recreation) can connect the city even more so.

All of these elements converge to create a well-connected, exceptionally cohesive system which has the potential to create an entirely walkable and an overall healthier city for the citizens of Sedalia. SMART 2040 will give Sedalia its identity.

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## Active Living

Active Living is a way of life that integrates physical activity into daily routines, like walking to the store, biking to work and eating healthier foods. Community planning plays a big role in the active living of many members in a community. Some schools are replacing old soft drink vending machines with different vending machines holding healthier substitutes (such as milk, water and juice). Some communities are lobbying for corner markets next to their schools that sell healthier snacks to encourage students to make better eating choices. Many cities across the country have started community gardens to keep people active and eating healthy. In addition, many cities are seeing a revival of farmer's markets. Most of these activities are started by organizations within the community and do not require much assistance financially or from people outside the community.

Some improvements are needed, however, such as improvements to the streets of many downtown areas (to make people feel more comfortable biking and walking). Some cities have designed systems of greenway paths to connect parks across the city and to encourage exercise. In addition to the greenway trails and parks, more and better bicycle paths and sidewalks are needed to accompany the road systems. Illinois is the first state to pass a "complete street" law which means that all new and reconstructed road systems have to allow for equal pedestrian, bicycle, and motorist access. New York has started a "streets as places" project which calls for the streets to respond to community needs and not solely vehicular access. An example of a street which responds to the community would be one with narrower lanes, defined curbs, raised cross-walks, wider sidewalks, planted trees, bus lanes and pullouts, and public amenities like pay phones and newspaper stands.

## Resources and References

Creating better streets and more parks and greenways sounds like a simple solution, but many people find other problems with their communities that keep them from using these amenities. A recent study found that adolescent girls do not walk to school because of the fear caused by the growing crime rates around their neighborhoods. Studies have also shown that even if greenway paths did exist in some cities that people think it is simply too far to walk or bike to work. Also, work places can have inadequate facilities to support biking to work. According to a recent survey 62% of Americans would bike to work if they had somewhere to clean up once they arrived.

## Neighborhood Districts

Neighborhood districts split the city into smaller communities which provides easy access to many everyday activities. These small communities encourage interaction with the people that are inside them by offering several points of interest. They help to develop familiarity with people inside the community and encourage community interaction.

Neighborhood districts seek to reestablish the scale of our environments to fit the human being. They wish to recapture human scale and allow people to live within reasonable distances of neighborhood nodes (grocery stores, pharmacies, schools, parks, and other general needs facilities). Further, they seek to make the route to the nodes welcoming and comfortable. These proposed zones break the city into smaller, more walkable pieces, creating a ten minute bike ride or fifteen minute walk as opposed to a 40 minute bike ride or an hour long walk.

With the creation of neighborhood districts each district has a unique identity. Building upon unique features of the city helps to create an image that is distinct and memorable. We can expand on these components of Sedalia to create more powerful images and experiences and through the cultivation of individualized neighborhood centers we can work to establish new forms of identities for the city.

Neighborhood centers were founded based on where schools and parks are located; therefore, it is important that each neighborhood center strives to include a school and park.

## SMART Districts

The SMART system becomes the catalyst for the neighborhood districts, which we're dubbing "SMART districts". It begins with the coupling a school and park within each district. It then further expands the concept to include the daily needs of the citizens within each district.

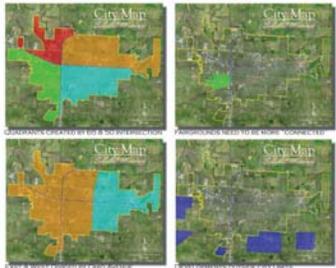
Each oval is approximately a mile and a half wide, which is transpires to about a 20 minute walk. Using this scale helps to keep this idea of 'walkability' reasonable. This further places emphasis on re-scaling the city according to the human. To emphasize this scale even further, zoning can be proposed to bring future commercial development to these districts, making daily needs facilities more readily available to the people of each district. In order to accomplish the desired result of these new SMART districts, several aspects of the city will need to be designed or redesigned to accommodate. That is where the SMART 2040 plan comes in to play.

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# Appendix

### SEDALIA, MO. CONTEXT



**ISSUES:**

1. THE CITY IS SPLIT INTO QUADRANTS BY THE TWO MAIN ARTERIES RUNNING THROUGH THE CITY: US HIGHWAY 65 (LAMY AVENUE) AND US HIGHWAY 240 (DOWNTOWN BOULEVARD).
2. THERE IS A DIVIDE BETWEEN THE EAST AND WEST SIDES OF TOWN (SEPARATED BY CHURCH AND MAIN). THE COMMERCIAL AND INDUSTRIAL DISTRICTS ARE TO THE WEST AS WELL AS THE UPPER CLASS. THE WORKING CLASS ON THE EAST SIDE OF THE RAIL FIELDS ROUTED AND CUT OFF FROM THE REST OF THE CITY AS A RESULT.
3. THERE IS A SMALL CULTURAL, SHOPPING, MARKET ON THE NORTH AND SOUTH SIDES OF THE RAILROAD TRACKS.
4. THE STATE FAIR BRINGS AN AVERAGE OF 275,000 PEOPLE INTO THE CITY OF SEDALIA EVERY YEAR, BUT THE POPULATION TENDS TO INCREASE SOLELY ON THE MARGINALS.
5. THERE ARE SEVERAL DEVELOPMENTS BEING WORKED ON OUTSIDE THE CITY LIMITS THAT HAVE A "TRANSFORMER" FEEL TO THEM (CLUBHOUSE, GOLF PARK, HOUSING DEVELOPMENTS, ETC.).

**WANTS/NEEDS:**

1. THE GENERAL CONCERN BETWEEN ALL COUNTEE MEMBERS AND THE REST OF THE COMMUNITY APPEARS TO BE THAT THERE IS A DIVIDE OR BIAS FOR THE CITY TO BE MORE "CONNECTED."
2. THE COMMUNITY WOULD BENEFIT AND THE NUMBER ONE AREA THAT PEOPLE WERE FOCUSED ON WAS TRAILS.
3. THE CITY WANTS A SENSE OF "TRAIL" THAT WILL "CONNECT" THE CITY AS A WHOLE, NOT SPECIFICALLY A PHYSICAL, "WALK" WHAT THE ISSUE IS THAT THE PEOPLE WANT TO BE ABLE TO "FOLD" THE TRAILS DOWN THEIR DAILY ROUTES AND INTO THEIR EXISTENCE.
4. THERE IS A STRONG DESIRE FOR WANTING TO BE ABLE TO NAVIGATE THE CITY WITHOUT THE NEED FOR A VEHICULAR MODE OF TRANSPORTATION. "THEREFORE THERE IS A DESIRE TO NAVIGATE TO GO OR BY BICYCLE THROUGHOUT THE CITY."
5. THE CITY WOULD LIKE TO LINK SOME MAJOR POINTS OF INTEREST TOGETHER VIA TRAILS (WALK, BIKE, HORSEBACK, ETC.).

**OVERALL GOAL:**

TO SUCCESSFULLY CONNECT THE PIECES OF THE CITY TO CREATE ONE UNIFIED "COMMUNITY" THROUGH THE BLENDED AND LAYER OF AN INTEGRAL TRAIL SYSTEM.

### SEDALIA, MO. CONCEPT

**Do's**



**Don't's**



**CONNECTION + AWARENESS:**

**SMART GROWTH PRINCIPLES:**

1. INCORPORATE MIX LAND USES.
2. TAKE ADVANTAGE OF EXISTING COMMUNITY ASSETS.
3. CREATE A RANGE OF HOUSING OPPORTUNITIES AND CHOICES.
4. FOSTER "WALKABLE" NEIGHBORHOODS.
5. PROMOTE DIVERSE, ATTRACTIVE CORES WITH A STRONG SENSE OF PLACE AND NATURAL BEAUTY.
6. PRESERVE OPEN SPACE, FARMLAND AND OTHER OPEN SPACES.
7. PROMOTE AND ENCOURAGE GROWTH IN EXISTING COMMUNITIES.
8. PROVIDE A VARIETY OF TRANSPORTATION CHOICES.
9. MAKE DEVELOPMENT DECISIONS PRACTICAL, FAIR, AND COST-EFFECTIVE.
10. INCLUDE CITIZEN PARTICIPATION IN DEVELOPMENT DECISIONS.

**ACTIVE LIVING GOALS:**

1. INTEGRATE PHYSICAL ACTIVITY INTO DAILY LIFE.
2. ESTABLISH BASIS OF ACTIVE LIFESTYLE IN TODAY'S TOWN.
3. PROVIDE ACCOMMODATING INFRASTRUCTURE WHICH CATER TO ALL USERS.
4. PROMOTE PUBLIC HEALTH AND WELL-BEING.
5. REMOVE OBSTACLES TO LIFE.

### SEDALIA, MO. OVERVIEW

**BACKGROUND & HISTORY:**

SEDALIA WAS DEVELOPED ALONG THE PACIFIC RAILROAD IN 1860. AFTER A BRIEF STAY IN THE CIVIL WAR, THE MISSOURI, KANSAS AND TEXAS (MKT) OR KATY LINE BEGAN MOVING PASSENGERS THROUGH THE REGION IN 1850. IN 1853, ADDITIONAL LINES WERE DEVELOPED TO LINK SEDALIA TO ST. LOUIS. HISTORIC HISTORIANS, THE BACKBONE OF AMERICA, RAN NEARLY 3,077 MILES FROM THE EAST TO THE WEST COAST. A RECEIPT SERVICE, THE HIGHWAY TO FORTIFICATION, INTENDS TO EXPAND THE HIGHWAY TO FOUR LANES THROUGHOUT THE MISSOURI SECTION. THIS ROAD PROMOTES CONICAL ACCESS TO THE METROPOLITAN COLONIAL OF KANSAS CITY TO THE WESTWARD.

**PARKS AND ATTRACTIONS:**

SEDALIA CURRENTLY HAS A GREAT CENTRIC PARK AND RECREATION SYSTEM. IT HAS NUMEROUS PARKS OF DIFFERENT SIZES AND LOCATIONS LOCATED THROUGHOUT THE CITY. THE KATY TRAIL CUTS THROUGH THE CITY AND CONNECTS SEDALIA TO A LARGER SYSTEM OF RECREATION AND TRAILS. SEDALIA HAS WORKS THAT WITH A LITTLE ORGANIZATION IN THE FUTURE A SYSTEM OF GREENWAYS AND TRAILS CAN HELP CONNECT AND UNITE THE PARKS AROUND THE CITY.

**LAYOUT & CONTEXT:**

THE MOST RECOGNIZED PATHS IN SEDALIA ARE MAIN STREET, BROADWAY (OLD PAVED US HIGHWAY 65), LAMY AVENUE (US HIGHWAY 65), 18TH STREET AND STATE HIGHWAY 240 (DOWNTOWN BOULEVARD). THE RAILROAD TRACKS AND THE KATY TRAIL, SOME MAJOR POINTS OF INTEREST AT FRACTIONS IN THE AREA INCLUDE THE DRAIN BASIN, THE PARKING, THE HOTEL, BOTHWELL, THE SEDALIA PUBLIC LIBRARY AND THE RAY CENTER. THERE ARE SCHOOLS AND COMMERCIAL ENTERIES THAT WOULD BENEFIT FROM A WELL-CONNECTED TRAIL SYSTEM.

**STATE FAIR & FAIRGROUNDS:**

THE MISSOURI STATE FAIR IS HELD IN SEDALIA EVERY YEAR. THE CITY IS CURRENTLY IN ITS 103<sup>RD</sup> YEAR AS THE HOST OF THE FAIR. THIS EVENT BRINGS APPROXIMATELY 275,000 PEOPLE TO THE CITY OF SEDALIA FROM THE EAST TO THE WEST EVERY YEAR. BECAUSE OF THE DRASTIC CHANGE IN POPULATION DURING THE YEAR, THE SEDALIA CITY GOVERNMENT SHOULD FOCUS ON BOTH THE GENERAL, EVERYDAY POPULATION AS WELL AS THE DISCALCATED POPULATION. THE SEDALIA SHOULD BE AIDED FOR VARIOUS OTHER EVENTS 150 DAYS OUT OF THE YEAR AND HAVE THE POTENTIAL TO PROMOTE THE TRAILS COMMUNITY A GREAT IDEAL IF UTILIZED CORRECTLY.

**THE KATY TRAIL**

THE KATY TRAIL IS ONE OF THE LONGEST RAILROAD TRAILS IN THE COUNTRY. IT IS 2,235 MILES LONG, RUNNING WEST BY CHURCH AND MAIN TO THE EAST BY CHURCH AND MAIN. FORMER MISSOURI, KANSAS, TEXAS RAILROAD. FUTURE PLANS INCLUDE CONNECTING THE TRAIL TO THE DOWNTOWN OF KANSAS CITY AND ST. LOUIS AND POSSIBLY TO THE SURROUNDING STATES.

### SEDALIA, MO. OVERVIEW

**DIVERSITY IN TRANSPORTATION**



**PIQUA, OH**

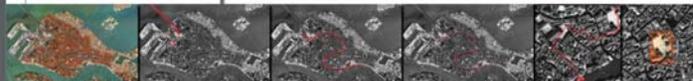
PIQUA HAS A DIVERSE RANGE OF TRANSPORTATION MODES, INCLUDING BICYCLES, WALKING, AND PUBLIC TRANSPORTATION. THE CITY IS CURRENTLY IN THE PROCESS OF DEVELOPING A TRAIL SYSTEM THAT WILL CONNECT THE CITY TO THE SURROUNDING STATES.

THE CITY OF PIQUA IS CURRENTLY IN THE PROCESS OF DEVELOPING A TRAIL SYSTEM THAT WILL CONNECT THE CITY TO THE SURROUNDING STATES. THE CITY IS CURRENTLY IN THE PROCESS OF DEVELOPING A TRAIL SYSTEM THAT WILL CONNECT THE CITY TO THE SURROUNDING STATES.

A DIVERSITY OF TRANSPORTATION SYSTEMS CAN ENHANCE THE SUSTAINABILITY, EFFICIENCY, AND HEALTH OF A TOWN. USING A SUSTAINABLE MEANS TO ENTER THE TOWN BY MASS TRANSPORTATION, A FORM OF PUBLIC TRANSPORTATION FOR LONGER OR FURTHER DISTANCES WITHIN TOWN AND TRAILS FOR MOVEMENT OR RECREATION CAN BE A SUCCESSFUL WAY TO CUT DOWN ON TRAFFIC AND MAKE A HAPPIER, MORE CONNECTED COMMUNITY. PIQUA, OH AND WENICE, ITALY ARE TWO EXAMPLES OF TOWNS THAT HAVE INSTALLED SOME OF THESE TRANSPORTATION MEANS.

### DIVERSITY IN TRANSPORTATION

#### VENICE, ITALY



**APPLICATIONS FOR SEDALIA:**

The Venetian system of canals is a unique and historic form of transportation. It provides a means of travel that is both efficient and scenic. The system is a testament to the ingenuity of the Venetians, who built a city on water. The system is a model for modern urban planning, showing how a city can be designed to accommodate a variety of transportation modes. The Venetian system is a source of inspiration for the design of the Sedalia system, which will provide a similar level of efficiency and scenic value.

### SEDALIA, MO PRECEDENT

#### PORTLAND, OR



**COLUMBIA, MO**



The local reference for the Sedalia system is the Columbia system. The Columbia system is a model for modern urban planning, showing how a city can be designed to accommodate a variety of transportation modes. The Columbia system is a source of inspiration for the design of the Sedalia system, which will provide a similar level of efficiency and scenic value.

### SEDALIA, MO PRECEDENT

#### INDIANAPOLIS, IN A Livable City



**Components of a Livable City**

- Walkability
- Access to Public Spaces
- Safety
- Connectivity

**Why Sedalia Calls for a Livable City**

Sedalia is a city that is in need of a livable city. The city is in need of a livable city because it is a city that is in need of a livable city. The city is in need of a livable city because it is a city that is in need of a livable city. The city is in need of a livable city because it is a city that is in need of a livable city.

### SEDALIA, MO PRECEDENT

#### SPRINGFIELD MO LINEAR PARKS AND TRAILS

#### DOWNTOWN SPRINGFIELD



**FOUNDERS PARK**

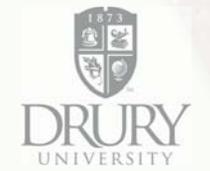
**JORDAN VALLEY**

**DRAINAGE TUNNEL**

**ABANDONED RAILS**

**FLOOD ZONE**

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# Appendix

### Neighborhood Centers

Environmental	Economic	Community	Thematic
<p>Concept for vertical density in a diverse urban environment. This model serves the neighborhood as the economic, learning hub.</p>	<p>University for vertical density in a diverse urban environment. This model serves the neighborhood as the economic, learning hub.</p>	<p>Multi-level, interconnected walkable communities that have strong sense of activity and place.</p>	Thematic
<p>This model places great importance on the density of its residents and quality of life for the pedestrian.</p>	<p>Farmer's Markets help economic growth, local and encourage walking.</p>	<p>Mixed-use high density sustainable compact promotes smart growth.</p>	Thematic
<p>Accommodating strategies for improving the quality of car and pedestrian.</p>	<p>Seeing things that are different and fun for the community. Encourage people to walk.</p>	<p>High density urban encourages suburban sprawl and starts to encourage more transit and urban trails.</p>	Thematic
<p>It provides a higher efficiency alternative to driving alone a carpool.</p>	<p>Speed still drives developers to seek cities further, causing long term maintenance and fuel prices to cost buyers more.</p>	<p>Suburban sprawl encourages the use of vehicles, traffic, air and separates commercial from residential.</p>	Thematic
<p>A new, sustainable model for city growth creates a more efficient building but still requires cars for transport.</p>	<p>Big business sprawls economic growth and encourages city sprawl.</p>	<p>Urban Sprawl + Low Density</p>	Thematic
<p>A solid economy and job growth are essential for transportation.</p>	<p>Urban Sprawl + Low Density</p>	<p>Urban Sprawl + Low Density</p>	Thematic

SEDALIA, MO

Urban Sprawl + Low Density

### No Cars vs. Cars

Environmental	Economic	Community	Thematic
<p>Environmental</p>	<p>Economic</p>	<p>Community</p>	Thematic
<p>Environmental</p>	<p>Economic</p>	<p>Community</p>	Thematic
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**Multi-Modal Transportation Layering System**  
The Broad Perspective

**Sedalia, MO**

**Detail-Oriented Design Elements**

- Trails**
- Bike Paths**
- Katy Trail Condition**
- Streetscapes**

**Sedalia, MO**

**Detail-Oriented Design Elements**

- Connection of the Katy Trail**
- Trailheads**
- Farmer's Market**
- Street Crossings**

**Sedalia, MO**

**Detail-Oriented Design Elements**

- Linear Park**
- Sidewalks**
- Bus Stops**
- Community Centers**

**Sedalia, MO**





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SEDALIA, MO • RECOMMENDATIONS



**CONNECTING THE KATY TRAIL**  
 THE SMALL SECTION OF THE KATY TRAIL THROUGH THE PREVIOUS OF THIS SMALL SECTION SITES SEDALIA THE CURRENTLY EXISTING TRAIL AND THE PROPOSED ONE OPTION WOULD BE TO KEEP THE EXISTING CONNECTION BUT MAKE SPECIFIC IMPROVEMENTS TO THE BRIDGE AND INCLUDE BUILT-UP CHANGING MATERIALS AND INCREASING SIGNAGE. ANOTHER OPTION MIGHT BE TO ACQUIRE LAND FROM THE MUNICIPAL AND ACTUALLY PHYSICALLY CONNECT THE TWO SIDES. DISADVANTAGES TO THIS ARE THE COST OF ACQUIRING LAND FROM THE MUNICIPAL AND ACTUALLY PHYSICALLY CONNECT THE TWO SIDES. DISADVANTAGES TO THIS ARE THE COST OF ACQUIRING LAND FROM THE MUNICIPAL AND ACTUALLY PHYSICALLY CONNECT THE TWO SIDES. DISADVANTAGES TO THIS ARE THE COST OF ACQUIRING LAND FROM THE MUNICIPAL AND ACTUALLY PHYSICALLY CONNECT THE TWO SIDES.



**MAKING THE KATY TRAIL MORE USABLE AND MONUMENTAL**  
 THE ADDITION OF CURBULAR PATIO ELEMENTS ALONG THE TRAIL WOULD CREATE AN INTERSECTION BETWEEN THE SIDES OF THE TRAIL AND THE TRAIL ITSELF. IT WOULD ALSO MAKE THE TRAIL MORE USABLE AND FUN. IMPROVING THE TRAIL WITH ASPHALT WOULD ALLOW FOR BICYCLING, WHEELCHAIRING, WHEELCHAIR USERS, STREET VEHICLES, AND STROLLER ACCESS TO THE TRAIL THAT IS CURRENTLY UNAVAILABLE TO THEM. CHANGING MATERIALS AND STRUCTURES PLACED ALONG THE TRAIL, SIGNAGE, PAINTINGS, REFLECTING POOLS, COMPOSTING CENTERS, ETC. COULD MAKE SEDALIA A SECTION OF THE KATY TRAIL. SEDALIA IS THE CURRENTLY A SECTION ALONG THE TRAIL.



**KATY TRAIL BRIDGES OVER HIGHWAYS 65 AND 50**  
 THE CURRENT CONDITION OF THE KATY TRAIL BRIDGE CROSSING HIGHWAY 65 IS NOT IDEAL. THERE IS LITTLE SIGNAGE REGARDING ITS PRESENCE. KATY TRAIL USERS HAVE NO ACCESS TO THE HIGHWAY AND PEDESTRIANS HAVE NO ACCESS TO THE HIGHWAY. THE BRIDGE SHOULD BE BUILT AND EXPANDED TO THE KATY TRAIL AND THE EXISTING SYSTEM ACCESSIBLE TO ALL AS APPLIED FROM THE TRAIL DOWN TO THE HIGHWAY ALLOWING FOR ADA COMPLIANT ACCESSIBILITY. ALSO, CONNECTING THE TWO TRANSPORTATION TYPES IS A GREEN SPACE GATHERING AREA FOR PEOPLE TO USE THE LEARN PARK ALONG HIGHWAY 65 & KATY TRAIL CROSSING.



**CONNECTING CLOVER DELL**  
 THERE IS NO TRAIL OFF OF PEDESTRIANS TO REACH THE PARK. 32ND STREET IS THE PRIMARY ENTRANCE INTO THE PARK, BUT IS TOO NARROW AND DANGEROUS FOR BICYCLE AND PEDESTRIAN TRAFFIC AND THE PARK IS NOT DIRECTLY CONNECTED TO THE KATY TRAIL. SOME SUGGESTIONS ARE TO HAVE THE SIDE OF THE PARK CONNECT TO THE KATY TRAIL AND HAVE THAT THE PRIMARY REAR ENTRANCE. THERE SHOULD BE A PARK PATH AROUND THE POND FOR EASE OF TRAVEL. ADDITIONAL DESIGN ELEMENTS SUCH AS BRIDGES CAN BE INCORPORATED FOR FUNCTIONALITY.



**PROPOSED ACTIONS TO KATY TRAIL**



**THE SOLUTION FOR HIGHWAY 65 AND 50**



**PROPOSED ACTIONS TO CLOVER DELL PARK**

SEDALIA, MO • CONCEPTUAL IDEALS

**PURPOSE:**  
 THE FOLLOWING CONCEPTS FOR SEDALIA ARE LARGE, MEANINGFUL IDEAS. SOLUTIONS TO THE MAIN ISSUES ARE CONCERNING. OUR INTENTION IS NOT TO APPLY THESE UTOPIAN CONCEPTS TO THE CITY OF SEDALIA, BUT INSTEAD TO STIMULATE SOME EXTENSIVE TRAILS AND RESEARCH INTO A VAILABLE CONCEPTS. A COMBINATION OF CERTAIN ELEMENTS FROM EACH OF THESE IDEAS HAS THE POTENTIAL TO PROMOTE AND ENHANCE THE CITY AS A WHOLE. WE HAVE REALIZED THAT THERE ARE MORE ISSUES TO DEAL WITH THAN JUST CONSIDERING THE CITY AS A WHOLE TO HAVE A SYSTEM OF TRAILS. WITH THIS IN MIND, CONSIDER THE FOLLOWING IDEAS.

**WALKABLE SEDALIA:**  
 IMAGINE AN UTOPIAN CITY THAT CHALLENGED THE USE OF AUTOMOBILES. A CITY WHICH CAN BE EASILY TRAVELLED AROUND BY FOOT OR WHEELCHAIR. THE BENEFITS ARE OBVIOUSLY ENDLESS. THE CITY WOULD AUTOMATICALLY BECOME CLEANER, SAFER, AND MORE HEALTHY. THE ENVIRONMENTAL TRAFFIC SYSTEM WOULD BE ABLE TO NAVIGATE AND EXIST IN SAFETY. SEDALIA WOULD EXPERIENCE A MUCH MORE COMFORTABLE AND SOCIAL ATMOSPHERE. ACTIVE LIVES BECOMES NECESSARY. HAVING THE COMMUNITY SOCIAL AND ACTIVE AND HAPPY. MOST IMPORTANTLY, IT WOULD GIVE SEDALIA AN IDENTITY OF ITS VERY OWN. THEY COULD POTENTIALLY BECOME THE FIRST WALKABLE PEDESTRIAN CITY IN THE U.S.

**NEIGHBORHOOD DISTRICTS:**  
 NEIGHBORHOOD DISTRICTS ARE DEFINED AS AREAS SEPARATING THE CITY INTO SMALLER COMMUNITY REGIONS. EACH COMMUNITY NECESSARY COMPONENTS OF DAILY LIFE. EACH NEIGHBORHOOD SHOULD CONTAIN A SCHOOL, PARK, COMMUNITY CENTER, AND ACCESS TO LOCALLY GROWN PRODUCE. OUR SOCIETY CANNOT BE FULLY FUNCTIONAL UNLESS WE ARE GROWING OUT OF PROPORTION WITH THE URBAN. NEIGHBORHOOD DISTRICTS SEEM TO REESTABLISH THE SCALE OF OUR ENVIRONMENTS. THEY SHOULD PROVIDE ACCESS TO EVERYDAY ACTIVITIES AND NEEDS. THE SMALL PEDESTRIAN TRAFFIC MORE PRACTICAL. CHECK CITIZENS ARE ABLE TO EAT, SHOP, AND WORK WITH A LOCAL NETWORK. A SYSTEM DEPENDENT ON OTHER MEMBERS OF THE COMMUNITY DEVELOPS. THIS SYSTEM IS MORE VISIBLE BECAUSE IT ENCOURAGES THE GROWTH OF SMALL BUSINESSES.

**SEPARATED TRANSPORTATION:**  
 A MULTILEVEL SYSTEM OF HOV, SEPARATE TRAIL & BIPOLE CREATE A SAFER, MORE PEDESTRIAN FRIENDLY CITY. A SYSTEM OF PATHS LOCATED AT VARIOUS VERTICAL LEVELS THROUGHOUT THE CITY WOULD ALLOW FOR VEHICLES TO SEDALIA, UTILIZING VERTICAL SPACE BETWEEN HOV LEVELS. SPACE IS NOW WASTED FROM AN ENVIRONMENTAL AND ECONOMIC STANDPOINT. WHEN PEDESTRIAN AND BICYCLE TRAFFIC IS SEPARATED THROUGH THE DESIGN OF AN ELEVATED OR RECESSED SYSTEM, THE DEPENDENCE ON THE AUTOMOBILE DECREASES. THIS INCLUDES INCLUDING SEPARABILITY IN SEDALIA, BUT COULD BE WITH THE ADDITION OF AN ELEVATED SYSTEM AND CONNECTIONS TO THE KATY TRAIL. THE CITY POTENTIALLY BECOMES PRIMARILY "GREEN". A SYSTEM OF ELEVATED PATHS HAS THE POTENTIAL TO CREATE AN IDEAL ENVIRONMENT FOR SEDALIA.



**WALKABLE COMMUNITY**



**TRAIL SIDE GREEN**



**BIPOLE AND ELEVATED PATH**



**ELEVATED URBAN PATH**



**PEDESTRIAN FRIENDLY CITY**



**URBAN DISTRICTS**



**SEPARATED TRANSPORTATION**



**ELEVATED PEDESTRIAN PATH**



# Appendix

## Introduction

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## Precedents

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Fig. 2.9	<a href="http://strawville.files.wordpress.com">strawville.files.wordpress.com</a>
Fig. 2.10	<a href="http://www.indygreenways.org">www.indygreenways.org</a>
Fig. 2.11	<a href="http://files.residentworks.com">files.residentworks.com</a>
Fig. 2.12	<a href="http://smallerindiana.ning.com">smallerindiana.ning.com</a>
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Fig. 2.16	<a href="http://media.pointz.com">media.pointz.com</a>
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Fig. 2.33	<a href="http://www.piquaoh.org">www.piquaoh.org</a>

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Fig. 2.39	<a href="http://www.gsd.harvard.edu">www.gsd.harvard.edu</a>
Fig. 2.40	<a href="http://www.archicentral.com">www.archicentral.com</a>
Fig. 2.41	<a href="http://taylormadepress.com">taylormadepress.com</a>
Fig. 2.42	<a href="http://www.seattlewaterfront.org">www.seattlewaterfront.org</a>
Fig. 2.43	<a href="http://imgs.ebuild.com">imgs.ebuild.com</a>

## Research of Project Challenge

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Fig. 3.15	Drawing by Travis Smith
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Fig. 3.17	<a href="http://www.lominous-landscape.com">www.lominous-landscape.com</a>
Fig. 3.18	<a href="http://www.fosterandpartners.com">www.fosterandpartners.com</a>

Fig. 3.19 Diagram Shane Algieri  
 Fig. 3.20 www.flickr.com  
 Fig. 3.21 www.flickr.com  
 Fig. 3.22 www.lifewithalacrity.com  
 Fig. 3.23 Drawing by Shane Algieri  
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 Fig. 3.26 Drawing by Shane Algieri  
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 Fig. 3.33 www.flickr.com  
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 Fig. 3.36 Drawing by Megan Eli  
 Fig. 3.37 www.flickr.com  
 Fig. 3.38 www.skyscraperlife.com  
 Fig. 3.39 Rendering by Megan Eli

### Recommendations

Fig. 4.1 www.cybertelecom.org  
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 Fig. 4.3 www.subwaynut.com  
 Fig. 4.4 www.greenroofs.com  
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Fig. 4.7 www.aviewoncities.com  
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Fig. 4.115 Rendering by Robbie Bryant  
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Fig. 4.124 Rendering by Travis Smith  
Fig. 4.125 Rendering by Amanda Behrens  
Fig. 4.126 Rendering by Amanda Behrens

Fig. 4.127 Rendering by Travis Smith  
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 Fig. 4.129 <http://www.7ail.net>  
 Fig. 4.130 <http://got2begreen.com>  
 Fig. 4.131 Rendering by Britney Bagby  
 Fig. 4.132 <http://www.tradebit.com>  
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 Fig. 4.134 [www.davidrichert.com](http://www.davidrichert.com)  
 Fig. 4.135 Rendering by Britney Bagby  
 Fig. 4.136 <http://www.pacalowski.com>  
 Fig. 4.137 <http://tygnewlife.wordpress.com>  
 Fig. 4.138 Diagram by Travis Smith  
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 Fig. 4.155 Rendering by Robbie Bryant  
 Fig. 4.156 Rendering by Robbie Bryant

Fig. 4.157 Rendering by Robbie Bryant  
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 Fig. 4.183 [www.flickr.com](http://www.flickr.com)  
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## Resources and References

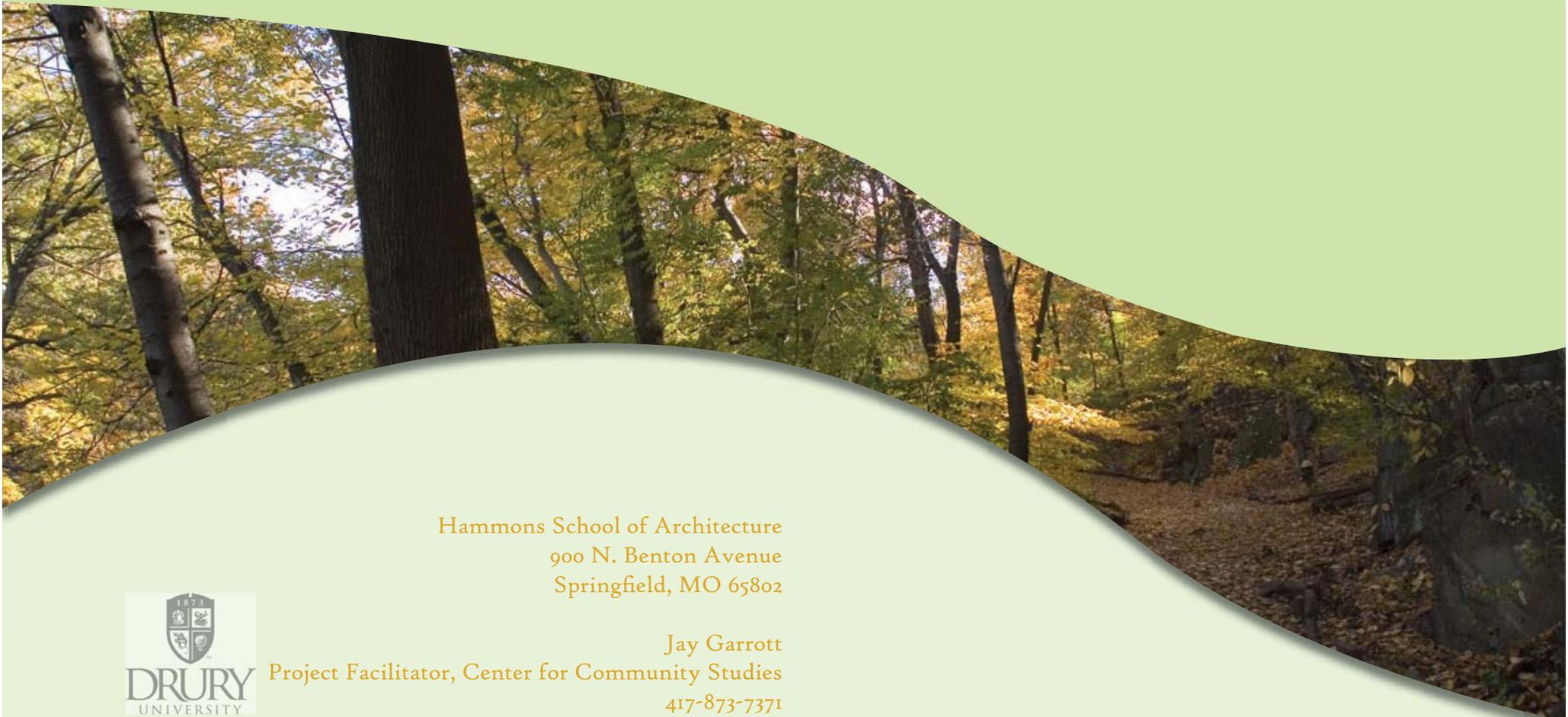
Fig. 5.1	Image by Megan Eli	Fig. 5.29	Rendering by Shane Algieri
Fig. 5.2	Diagram by Shane Algieri	Fig. 5.30	Rendering by Shane Algieri
Fig. 5.3	Diagram by Shane Algieri	Fig. 5.31	Rendering by Robbie Bryant
Fig. 5.4	Diagram by Shane Algieri	Fig. 5.32	Rendering by Britney Bagby
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Fig. 5.8	Diagram by Travis Smith	Fig. 5.36	Diagram by Travis Smith
Fig. 5.9	Diagram by Travis Smith	Fig. 5.37	Diagram by Travis Smith
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Fig. 5.11	Chart by Britney Bagby	Fig. 5.39	Diagram by Britney Bagby
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Fig. 5.15	Rendering by Travis Smith	Fig. 5.43	Rendering by Travis Smith
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