



Page Avenue

Health Impact Assessment

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Executive Summary

Executive Summary

In 2009-2010, an interdisciplinary team at Washington University along with St. Louis area community and academic partners led a comprehensive health impact assessment (HIA) of the Page Avenue redevelopment. Funded partially by tax increment financing (TIF), the redevelopment has been planned for Page Avenue between Kingsland Avenue and Buckner Avenue in Pagedale, Missouri located in St. Louis County. TIF is a tool to use future tax revenue to finance the current improvements that will create that revenue. The design generated for the passing of the TIF ordinance in 2007 was expected to have significant health impacts on area residents and therefore became the focus of the Page Avenue HIA. The redevelopment plan includes:



The Page Avenue HIA was focused on answering these questions:

- Do current conditions in this community promote health?
- How will the Page Avenue redevelopment affect the health of the community?
- What actions can be taken to maximize community health benefits?

The HIA was intended to provide an impartial assessment of the health impacts of the redevelopment. It was also hoped that this HIA would (1) increase awareness among regional decision-makers and stakeholders regarding the many factors that impact health and (2) encourage local and regional discussion surrounding how to define and plan for a healthy community.

Key decision-makers and stakeholders

The Page Avenue redevelopment is the product of an ongoing partnership between the City of Pagedale and the non-profit organization, Beyond Housing, one of the region’s leading providers of housing and support services for low-income families and homeowners. The project evolved out of the 2001 Pagedale Community Action Plan carried out by the City of Pagedale, Beyond Housing, and St. Louis County. Beyond Housing is acting as the master developer of the Page Avenue redevelopment.

The HIA team identified the following types of individuals and organizations who are or will be involved in making decisions about the Page Avenue redevelopment:

- Developer, including Beyond Housing Executive Director and Board of Directors
- City of Pagedale, including the Mayor, Board of Aldermen, Residents, and Police Department
- St. Louis County, including TIF Commission, Economic Council (and subunit Economic Development Collaborative), and County Government (Planning, Health, and Transportation)
- East-West Gateway Council of Governments
- Missouri Department of Transportation

Community stakeholders include:

- Residents
- Business owners
- Civic and religious leaders
- School officials

What is an HIA?

An HIA is a combination of procedures, methods, and tools by which a policy, program, or project may be judged as to its potential effects on the health of a population and the distribution of those effects within the population. HIA seeks to provide decision makers from the non-health sector with recommendations to mitigate the negative and maximize the positive impacts on health or health inequities.¹ HIAs view health from a broad perspective, taking into account a wide range of environmental factors, such as housing conditions, roadway safety, and social and economic factors. Often, HIAs can promote civic engagement by engaging community members and other stakeholder groups who will be affected by a decision.

Executive Summary Continued

DO CURRENT CONDITIONS IN THIS COMMUNITY PROMOTE HEALTH?

The Page Avenue HIA examined the potential health impacts of the redevelopment on individuals, youth, and families living primarily in Pagedale, MO as well as surrounding communities in University City and Wellston as defined by the 63133 zip code and area of the 63130 zip code north of Olive Boulevard. Although the focus area is relatively small in geography and population size, the HIA has the potential to impact decision-making currently underway for the 24 municipalities that make up the Normandy School District in St. Louis County.

Policy and socioeconomic environment

Historically, the area bounded by the Normandy School District has been fragmented given the multiple jurisdictions in a small geographic area. The lack of centralized policy-making has led to competition between municipalities and limited political influence at the county and state levels—particularly with regard to the distribution of government-funded resources. From 2006-2008 in the Normandy School District, 21 percent of residents were living in poverty, 95 percent of residents identified as black or African American, and there is an unemployment rate of 13 percent. The HIA study area saw improved high school graduation rates and reduced drop out rates between 1990 and 2000, however these are still low compared to St. Louis County.

Health-related indicators

This region of St. Louis County experiences a high rate of early mortality from chronic disease. Between 2000 and 2007, Pagedale and its surrounding communities (zip code 63133) were in the upper tertile of cardiovascular and diabetes death rates for persons aged 45 to 64 years in the St. Louis region. In addition, in 2007, African American adults in St. Louis County had a much higher prevalence of obesity than non-Hispanic White adults. Based on the Pagedale household survey, the prevalence of self-reported physical activity and healthy eating were found to be low. The majority of residents surveyed reported no leisure-time physical activity or use of nearby parks, and two-thirds of adults reported consuming one or fewer daily servings of fruits and vegetables. Healthy eating is challenging when there is a lack of places to shop for healthy food. Prior to the opening of the new full-service grocery store in the redevelopment, this area was served by small groceries and convenience stores; of those audited, they did not serve lean cuts of meat, fresh fruit, or low to no-fat dairy.

Physical infrastructure

This area has experienced decreasing population and declining investment over the years, resulting in deteriorating infrastructure, vacant housing, and boarded up commercial structures. More recently, the area was disproportionately affected by the U.S. foreclosure crisis relative to the rest of St. Louis County, resulting in a dramatic increase in vacant and abandoned property. Pagedale lacks a bank, laundromats,

What is a healthy community?

Health is viewed not merely as the absence of disease or infirmity, but as a state of physical, mental, and social wellbeing.² This definition recognizes that numerous factors influence individual health, not just the qualities of the individual. To stem the rising tide of chronic disease and create safe, thriving communities, health needs to be regularly factored into policy and program decisions in sectors that do not traditionally focus on health outcomes. Pagedale community members and government decision-makers described a healthy community as one with the following traits:

- lack of crime
- access to healthy foods
- promotes unity
- high quality school district
- economic stability
- walkable
- neighbors knowing neighbors
- decent housing in sound condition
- lots of social interaction
- leadership and community management

dry cleaners, and shops. The conditions of the sidewalks do not generally promote walkability. Beyond Housing has greatly improved the existing housing stock of the area by building new homes and subsidizing housing repair to older homes.

HOW WILL THE REDEVELOPMENT AFFECT THE HEALTH OF THE COMMUNITY?

The Steering Committee of stakeholders for the Page Avenue HIA identified seven priority impacts of the redevelopment on health (Figure 1).

Figure 1. Priority Impact Issues

These seven impacts represent important social, physical, and economic determinants of health, as supported by scientific evidence and documented in the full report. In addition, several issues were identified that address the limitations, challenges, and opportunities associated with the redevelopment’s capacity to improve community health and well-being. Using data from community assessments, scientific evidence, and stakeholder input, the full report documents (1) how each priority impact is connected to health, (2) what we learned about the community, (3) opportunities the redevelopment presents to maximize the health benefits for each priority impact, and (4) recommendations.



The Impact Table at the end of this section summarizes the direction and likelihood of the effects of the Page Avenue redevelopment, as well as the top five HIA recommendations, on each of the priority impacts. The likelihood of the effects was based on the strength of supporting evidence, as explained in the key. An estimate of the population impact of the redevelopment and recommendations are provided at the bottom of the table. These estimates were determined by the expected reach of the proposed change on the community or at-risk populations, as well as the likelihood of impact.

Overall, there was consensus across the HIA team, stakeholders, and decision-makers that the redevelopment will positively impact the health of the community. However, because of concerns about prolonged phasing or lack of detail in the current plan, some priority impacts were more certain (access to goods, services, and recreation; access to healthy foods; housing) than others (employment, pedestrian safety, community safety, community identity). The only potential negative impacts concerned relocation of people’s homes and businesses. Both businesses and homeowners have been and will be fairly compensated; therefore, deeming negative impacts to be minimal in light of many anticipated benefits.

Executive Summary Continued



Healthy PAGE Project

WHAT ACTIONS CAN BE TAKEN TO MAXIMIZE THE COMMUNITY HEALTH BENEFITS?

The top five Page Avenue HIA recommendations in the Impact Table at the end of this section represent common themes that emerged from the assessment of each priority impact, as well as a separate assessment of leading challenges and opportunities concerning the redevelopment and larger area. More detailed information about each recommendation can be found in the full report. Below briefly describes the meaning and importance of each of the top HIA recommendations.

1 Replace symbols of disinvestment and improve pedestrian infrastructure in the short-term.

The redevelopment will occur over many years during changing political landscapes, funding opportunities, and community priorities. Boarded up and deteriorating buildings are signs to both residents and outside observers that they are in a poor and struggling area. Tearing down boarded up buildings and soliciting funding from MODOT, Saint Louis County, and other resources for infrastructure improvements including medians, sidewalks, lighting, traffic lights and landscaping features would help support and attract investment. Moreover, such improvements have high likelihood of improving and sustaining perceptions of personal safety and pedestrian safety, encouraging walking in the neighborhood, and enhancing community identity.

2 Implement orchards and gardens.

An initiative is currently underway to implement a pilot project for turning vacant lots in Pagedale into community orchards and gardens. The Fruit Hill Initiative builds on a history and memory of fruit trees being prevalent in most neighborhoods in Pagedale, once known as Fruit Hill. Planting orchards and gardens has multiple benefits related to attracting investment in the redevelopment and to health outcomes: (1) provides spaces for public gathering to encourage social interaction and possibly improve perceived safety; (2) improves marketability and sense of community by creating physical features that convey an identifiable character and remedying concerns over vacant lots; and (3) promotes healthy eating by increasing access to and awareness of healthy foods.

3 Supplement physical improvements with education and programming.

Multiple strategies are required to improve complex health-related outcomes – including changing environments and policies to make healthy opportunities and choices easier, enhancing social norms and social support, and educating and motivating individuals to take advantage of opportunities. The Page Avenue redevelopment will need to be supplemented with education and programming (e.g., nutrition classes, information about job training and job application, walking clubs) to have the greatest impact on community well-being.

4 **Prioritize spaces and programs for youth recreation.**

Lack of opportunities for youth, especially those aged 12 to 18 years, emerged as a consistent theme from the qualitative data and stakeholder input collected as part of this HIA. Design that promotes accessibility for the youth is very important for addressing this existing disparity. Specific priorities aimed at resources that are utilized by youth include expanding park facilities and recreation opportunities. Such spaces and programs could have positive health impacts on youth physical activity, community safety, and social networks.

5 **Foster stakeholder engagement.**

Plans for the Page Avenue redevelopment have the potential to change over time due to changing forces and opportunities. A periodic reassessment of stakeholder priorities will keep the public well informed about project progress and engage stakeholders in the planning process. Forming a chamber of commerce may organize business owners to be involved in the civic process and better integrate their concerns and needs into decision-making. Promoting civic engagement and social capital has health benefits. In addition, stakeholders can organize a task force to oversee actionable elements of the Page Avenue HIA and potentially increase the likelihood that recommendations are carried out in the implementation phase of the redevelopment.



Healthy PAGE Project

Executive Summary Continued

Impact Table: Summary of the expected health effects of (1) the current Page Avenue redevelopment plan and (2) the top HIA recommendations, for each priority impact.

Key:

- The + or – signs indicate the direction of the impact, where
 - + = potentially beneficial impact
 - = potentially harmful impact.
 - 0 = no known or significant impact

• The number of signs indicates the likelihood of the impact based on the strength of evidence supporting the relationship between the current redevelopment plan or recommendation and the priority impact (or associated longer-term health consequences).

1 sign = speculative. The impacts are supported by expert opinion such as the Healthy PAGE team or key informant decision-maker.

2 signs = probable. The impacts are supported by community stakeholder input and/or individual scientific studies. These boxes are highlighted in yellow.

3 signs = definite. The impacts are based on multiple studies or scientific review(s) and supported by community stakeholders. These boxes are highlighted in yellow.

• The estimates of the community health impact of the redevelopment and recommendations at the bottom of the table are based on (1) expected reach of the proposed change on the community or at-risk populations and (2) the likelihood of impact on health across all of the priority impacts

Priority Impact	Current Page Ave Redevelopment Plan <i>Conditions that minimize the likelihood of positive health impacts</i>	Top Recommendations from Page Avenue HIA				
		#1: Replace symbols of disinvestment and improve pedestrian infrastructure in the short-term	#2: Implement orchards and gardens	#3: Supplement physical improvements with education and programming	#4: Prioritize spaces and programs for youth recreation	#5: Foster stakeholder engagement
Employment <i>Lower risk of morbidity and premature death</i>	+ Local employment opportuni- ties will be improved. <i>The types of businesses that will be attracted and whether new jobs will be sufficient or fit residents' skills are unknown.</i>	+ Investment in infrastruc- ture may help attract businesses which could lead to more and earlier employment opportuni- ties.	+ Incorporating the Fruit Hill initiative into a marketing plan may help attract businesses with employment op- portunities.	++ Providing information about job training and job ap- plication may increase the chances that residents are qualified and knowledgeable about job opportunities.	++ Youth programs may im- prove youth job readiness.	+ A chamber of commerce could maintain com- munication among local businesses and work with developer on strategies for attracting new busi- nesses.
Access to goods services and recreation <i>Physical activity, obesity, alcohol- related harms, wealth, and health events associated to health care services</i>	++ The redevelopment will improve access to goods and services within walking distance of most residences. <i>Attracting businesses can be challenging in this region, and no known policies are planned for the TIF district to limit busi- nesses associated with negative health impacts.</i>	+++ Investment in infrastruc- ture may help attract businesses that provide goods and services to the community. Improved connectivity and acces- sibility of businesses will likely support multiple forms of physical activity.	+ Incorporating the Fruit Hill initiative into a marketing plan may help attract businesses that provide goods and services to the com- munity.	0	+++ Improving access to recreational opportuni- ties may contribute to increased physical activity levels and healthy weight among youth, a currently underserved population at high-risk of obesity based on current health trends.	+ A chamber of commerce could maintain com- munication among local businesses and work with the developer on strate- gies for attracting new businesses.

Top Recommendations from Page Avenue HIA						
Priority Impact	Current Page Ave Redevelopment Plan	#1: Replace symbols of disinvestment and improve pedestrian infrastructure in the short-term	#2: Implement orchards and gardens	#3: Supplement physical improvements with education and programming	#4: Prioritize spaces and programs for youth recreation	#5: Foster stakeholder engagement
Key health-related outcomes	Conditions that minimize the likelihood of positive health impacts					
Access to healthy foods <i>Healthy eating, obesity, chronic disease</i>	++ The new grocery store will increase the proximity to and options for affordable healthy food for all residents. <i>There is no guarantee that residents will eat healthier or patronize the new store or that the store will sell a variety of healthy options.</i>	0	++ Planting gardens and orchards represent promising strategies for increasing fruit and vegetable intake and awareness of healthy eating among participants and patrons.	++ Serving healthy foods at meetings, offering cooking and nutrition classes, and posting signs to promote healthy food choices can encourage healthy eating beyond improved access.	0	++ The success of gardens and orchards will depend on local leadership, volunteers, and skill-building opportunities for participants.
Pedestrian Safety <i>Physical activity, obesity, chronic disease, pedestrian injuries/death</i>	++ Pedestrian improvements are planned for the redevelopment. <i>The timing and extent of improvements to pedestrian infrastructure along this thoroughfare are unknown.</i>	+++ Prioritizing pedestrian infrastructure improvements in the short-term will likely improve safety and increase physical activity in the area surrounding the new grocery store.	0	+++ Publicizing and offering more walking clubs can improve physical activity levels beyond physical improvements to pedestrian environment.	0	+ Creating a task force of stakeholders to advocate for walkability may increase the likelihood that these pedestrian infrastructure improvements are implemented.
Community safety <i>Stress, anxiety, poor mental health, chronic disease, physical activity and obesity</i>	+ New homes and businesses may increase pedestrian activity which could improve the natural surveillance of the area. Mixed-income housing may promote social cohesion and thus safety. <i>No known policies are planned for the TIF district to limit establishments associated with high crime (e.g., bars).</i>	++ Replacing boarded up buildings and poor street lighting will help remedy environmental conditions that support crime.	+ Having more users on the street at varying times of day and throughout the day increases surveillance (eyes on the street) and is associated with reduced incidence of crime. Orchards and gardens may improve social activity on the street and contribute in part to improved surveillance.	0	++ Providing organized spaces for youth may prevent crime committed by idle and unsupervised youth.	+++ Communities with high levels of social control and cohesion have lower levels of crime and improved perceptions of safety.

Top Recommendations from Page Avenue HIA						
Priority Impact	Current Page Ave Redevelopment Plan	#1: Replace symbols of disinvestment and improve pedestrian infrastructure in the short-term	#2: Implement orchards and gardens	#3: Supplement physical improvements with education and programming	#4: Prioritize spaces and programs for youth recreation	#5: Foster stakeholder engagement
Community identity <i>Mental and physical health, lower risk of premature death</i>	+ Opportunities to strengthen community identity are likely. <i>There are no known plans for marketing the community or for remediating the empty lots or poorly maintained buildings that affect community identity.</i>	++ Replacing boarded up and deteriorating buildings and improving infrastructure may improve morale and perceptions.	++ Incorporating the Fruit Hill initiative, planting orchards and gardens, and creating public space in empty lots could enhance the character of the street and promote community and social engagement.	0	++ Designing smaller recreational spaces for youth and older adults, rather than larger public parks as is planned would assist in fostering social networks.	++ Enhancing stakeholder involvement will likely improve community engagement and social networks, which in turn are strongly associated with improved health.
Healthy housing <i>Asthma, cancer, unintentional injuries, cardiovascular disease, arthritis, poor sleep, mental health</i>	++ The redevelopment will increase the number of homeowners, provide senior housing, replace older homes on Page Avenue, and possibly increase property values. <i>Current plans separate market-rate and affordable housing and do not specify the design and management of individual units</i>	- Approximately 15-20 additional residents on Page Avenue will need to be relocated. However, it is likely that Beyond Housing will fairly compensate them.	0	++ Beyond Housing's existing programs to promote homeownership, maintenance and repair will continue to help improve and sustain healthy housing in the community.	0	0
Overall Impact on community health	High if successfully implemented as planned	High Implementing this recommendation would likely benefit the entire community, and changes are positively associated with multiple priority impacts.	Moderate Gardens and orchards may improve the health of a subset of the population (participants). Their implementation is positively associated with multiple priority impacts; however their feasibility and effects on the success of the redevelopment are mostly speculative.	Moderate Providing educational opportunities and programs benefits a subset of the population (participants) yet capitalizes on physical improvements of the redevelopment to enhance population level health.	High Recreational resources for youth benefit an underserved population and are positively associated with multiple priority impacts.	Moderate Stakeholder engagement may increase the likelihood that the redevelopment will improve priority impacts. Community engagement and social capital are independently associated with many positive health outcomes. It is unknown to what extent stakeholders can organize and influence decisions.

Reader's Guide

The Page Avenue Health Impact Assessment is color-coded to provide for easy navigation of its contents. Each page contains a colored sidebar which indicates what component of the HIA one is looking at and to whom the content of that page is pertinent to.

This sidebar indicates that information on this page is relevant to state officials, county officials, developers, municipal officials, and residents.

This tab color indicates that you are located on the Reader's Guide page. Additional tab colors and their respective subjects are provided here:

Executive Summary
Reader's Guide
Summary of Recommendations
Introduction
Overview of Redevelopment Area
Project HIA Methodology
Priority Issues
Challenges and Opportunities
Identifying Redevelopment Options
References
Appendices
Additional Resources

Terms or abbreviations that are used frequently in this report are listed here:

THE HEALTHY PAGE PROJECT: The objective of the Healthy PAGE Project is to improve the health outcomes for residents of Pagedale and neighboring municipalities. The tasks of the project are to evaluate the needs of the community, identify areas of improvement, identify strategies and/or designs to implement, and to deliver evidence-based recommendations to the appropriate decision-maker(s).

HEALTH: Health is broadly defined as a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity. Health and health behaviors are influenced by the social, physical, and economic environment of a community.²

(TIF) TAX INCREMENT FINANCING: TIF assistance allows the use of a portion of property taxes, sales taxes, earnings taxes and other locally collected tax resulting from new development to contribute payment for recognized categories of development costs. This use of future gains to finance redevelopment has helped incentivize private investment in Pagedale.

SOCIAL CAPITAL: This concept refers to the values of social networks that connect a diverse range of people and places. Factors such as healthy residents, visible community involvement, and physically intact infrastructure are among many that contribute to a community's overall enriched sense of social capital.

MODOT: The Missouri Department of Transportation

The end of each Priority Issue section contains a chart of recommendations. These recommendations are suggestions for changes regarding *policy*, *design*, *education*, and *program*. Here is an example:

Strategy	Recommendations	Decision-maker	Source of Recommendation
Policy	1. Recruit businesses that prioritize employing local residents	Beyond Housing; City of Pagedale	Community
	2. Incentive Pagedale employers to offer a Living Wage at a minimum of \$8.30/hr.	City of Pagedale	Research
	3. Incentivize employment of residents in new retail and to fund workforce development programs with a development agreement or community benefits agreement.	City of Pagedale; Developers	Research
Design	4. Design buildings for mixed use.	Beyond Housing	Research
	5. Provide space for a community market-place to support local microenterprises.	City of Pagedale; UMSL Extension	Key Informant
Program	6. Increase entrepreneurship training and business management support to job training services to improve the employability of residents	Social service agencies	Key Informant; Research
Education	7. Inform residents of potential job opportunities offered by new enterprises.	City of Pagedale; Social service agencies	Community
	8. Provide information about job training and job application.	Social service agencies	Community

Details of the sources of these recommendations are outlined here: _____

- RESEARCH:** Based on independent scientific research.
- COMMUNITY:** Based on feedback from residents in the household survey, focus groups, or discussions.
- STEERING COMMITTEE:** Based on discussion with steering committee composed of community stakeholders and local experts.
- KEY INFORMANT:** Based on interviews with municipal, county, or state level decision-makers.
- ASSESSMENT:** Based on Healthy PAGE Project maps or audits of the community.

Summary of Recommendations

Top Recommendations

1. Replace symbols of disinvestment and improve pedestrian infrastructure in the short-term.
2. Implement orchards and gardens.
3. Supplement physical improvements with education and programming.
4. Prioritize spaces and programs for youth recreation.
5. Foster stakeholder engagement.

Summary of Recommendations

EMPLOYMENT

Strategy	Recommendations	Decision-maker	Source of Recommendation	Relation to Top Recommendations
<i>Policy</i>	1. Recruit businesses that prioritize employing local residents.	Beyond Housing; City of Pagedale	Community	
	2. Incentivize Pagedale employers to offer a Living Wage at a minimum of \$8.30/hr.	City of Pagedale	Research	
	3. Incentivize employment of residents in new retail and to fund workforce development programs with a development agreement or community benefits agreement.	City of Pagedale; Developers	Research	
<i>Design</i>	4. Design buildings for mixed use.	Beyond Housing	Research	
	5. Provide space for a community marketplace to support local microenterprises.	City of Pagedale; UMSL Extension	Key Informant	
<i>Program</i>	6. Increase entrepreneurship training and business management support to job training services to improve the employability of residents.	Social service agencies	Key Informant	3
<i>Education</i>	7. Inform residents of potential job opportunities offered by new enterprises.	Social service agencies	Community	3
	8. Provide information about job training and job application.	Social service agencies	Community	3

ACCESS TO GOODS, SERVICES, AND RECREATION

Strategy	Recommendations	Decision-maker	Source of Recommendation	Relation to Top Recommendations
<i>Policy</i>	9. Develop branded identity and marketing materials for potential retailer in the community, i.e. Fruit Hill, "Growing Pagedale Together."	City of Pagedale	Key Informant; Steering Committee	2
	10. Prohibit or limit retail establishments associated with adverse health outcomes such as liquor stores.	City of Pagedale	Research	
	11. Partner with Financial Institutions to help residents access micro-business loans.	City of Pagedale; Beyond Housing	Research	
<i>Design</i>	12. Recruit health-related goods and services, such as a pharmacy, health clinic, and recreational spaces, for redevelopment.	City of Pagedale; Beyond Housing	Community	
	13. Implement orchards and community gardens.	City of Pagedale; Beyond Housing	Steering Committee	2
	14. Provide space for a community marketplace to support local microenterprises.	City of Pagedale	Key Informant	
	15. Design buildings for mixed use.	Beyond Housing	Research	
	16. Recruit full-service banks for the redevelopment.	City of Pagedale; Beyond Housing	Community; Steering Committee; Research	
	17. Improve pedestrian and bicyclist connections to existing recreational opportunities.	MoDOT; City of Pagedale	Community; Assessment; Research	1
	18. Prioritize infrastructure improvement, including comprehensive sidewalks, medians, crosswalks, street lighting, bike lanes, and plantings.	MoDOT; City of Pagedale	Community; Assessment; Research	1
	19. Ensure sidewalk bicycle racks are co-located with retail uses.	City of Pagedale; Developer	Research	1

ACCESS TO HEALTHY FOODS

Strategy	Recommendations	Decision-maker	Source of Recommendation	Relation to Top Recommendations
<i>Policy</i>	20. Adopt land use policies to protect and establish new community gardens.	City of Pagedale	Key Informant	2
	21. Adopt a Healthy Food Zone ordinance to limit new fast food restaurant chains from locating within a certain distance of schools, parks, child care centers, and other locations children frequent.	City of Pagedale	Research	
	22. Serve healthy foods at community events and meetings.	City of Pagedale; Beyond Housing	Research	3
	23. Supplement food pantries with fresh produce.	Beyond Housing; other food pantries	Research	3
<i>Design</i>	24. Implement orchards and gardens.	City of Pagedale; Beyond Housing	Steering Committee	2
<i>Program</i>	25. Consider cooking and nutrition classes for residents.	Beyond Housing; social service agencies	Research	3
<i>Education</i>	26. Post signs and displays to encourage customers to purchase healthy food products in stores.	Save-A-Lot	Research	3

PEDESTRIAN SAFETY

Strategy	Recommendations	Decision Makers	Source of Recommendation	Relation to Top Recommendations
<i>Policy</i>	27. Invest Community Development Block Grant funds (\$67,000/year) into pedestrian amenities.	City of Pagedale: County Department of Community Development	Key Informant	1
	28. Transition bus stops near TIF District to ADA standards on an accelerated schedule.	MoDOT; Metro	Assessment	1
<i>Design</i>	29. Prioritize infrastructure improvement, including comprehensive sidewalks, medians, crosswalks, street lighting, bike lanes, and street plantings.	City of Pagedale; MoDOT	Assessment Research; Community	1
	30. Maximize pedestrian and transit access to the site from adjacent land uses.	Developer	Research	1
	31. Ensure that fencing and landscaping does not create barriers to pedestrian mobility.	Developer	Research	1
<i>Program</i>	32. Organize additional community walking clubs.	Residents	Research	3

COMMUNITY SAFETY

Strategy	Recommendations	Decision-maker	Source of Recommendation	Relation to Top Recommendations
<i>Policy</i>	33. Require durable, vandal-resistant materials so maintenance is minimal.	Beyond Housing; Developers	Research	
	34. Recruit businesses that are open at different times of day.	City of Pagedale; Beyond Housing	Research	
<i>Design</i>	35. Provide adequate and pedestrian-scaled lighting for all public areas, residential streets, and public streets.	City of Pagedale	Research	1
	36. Maximize visibility, especially for high risk areas such as parking garages, stairwells, and underpasses.	City of Pagedale; Beyond Housing; developers	Research	
	37. Provide programmed spaces for a diversity of age groups, i.e. playground for young children, basketball court for older youth, chess for older residents.	City of Pagedale; Beyond Housing	Steering Committee; Research	4
	38. Integrate public art and performance spaces.	City of Pagedale; Developer	Research	

COMMUNITY IDENTITY

Strategy	Recommendations	Decision-maker	Source of Recommendation	Relation to Top Recommendations
<i>Policy</i>	39. Incentivize locally-owned business development.	City of Pagedale	Research	
	40. Develop branded identity and marketing materials for potential investors in the community, i.e. Fruit Hill, "Growing Pagedale Together."	City of Pagedale	Key Informant; Steering Committee	2
	41. Adopt public planning policy to encourage greater community involvement.	City of Pagedale 24:1 Initiative	Research; Key Informant	5
	42. Utilize existing websites as information-sharing venues for area residents regarding local news.	City of Pagedale; Beyond Housing	Key Informant	5
<i>Design</i>	43. Demolish vacant buildings on Page Ave. slated for new construction and develop interim infill orchards to promote identity, and encourage future investment.	City of Pagedale; Beyond Housing; St. Louis County	Research; Steering Committee	1
	44. Integrate affordable and market-rate housing, minimizing difference between nature and quality of units.	Beyond Housing	Research; Steering Committee	
	45. Provide programmed spaces for a diversity of age groups, e.g. playground for young children, basketball court for older youth, chess for older residents.	City of Pagedale; Beyond Housing	Research; Steering Committee	4
	46. Implement orchards and community gardens.	City of Pagedale; Beyond Housing	Steering Committee	2
	47. Provide space for a community marketplace to support local microenterprises.	City of Pagedale; UMSL Extension	Key Informant	

Strategy	Recommendations	Decision-maker	Source of Recommendation	Relation to Top Recommendations
<i>Design</i>	48. Integrate affordable and market-rate housing minimizing differences between the nature and quality of units.	Beyond Housing	Steering Committee; Research	
	49. Promote healthy air quality and noise levels within housing units through proper ventilation and noise control design measures that reduce exposure from highway traffic.	City of Pagedale: Developer	Steering Committee; Research	
	50. Select building materials and ventilation systems for housing units to reduce allergies and toxic exposures.	Developer	Research	
	51. Build housing units to EPA's Indoor airPLUS construction specifications.	Developer	Research	

Introduction & Overview

Introduction

WHY HEALTH MATTERS

Before we can evaluate the health impact of a plan or policy, we should first answer the question: why does the impact on health matter? Health is a measure of influence on what is known as quality of life. Individual health has far reaching effects on society, from economic vitality to social participation. To give an example in quantitative terms, the negative health effects of physical inactivity are paralleled by staggering economic consequences: the annual cost directly attributable to inactivity in the U.S. is an estimated \$24 billion–\$76 billion, or 2.4%–5.0% of national health care expenditures.³ Creating environments that promote health can play a significant role in reducing rates of chronic diseases, the leading cause of death and disability in the United States and internationally. Understanding the relationship between health and planning or policy decisions allows decision-makers to “gain better insight of outcomes, balance health against other policy considerations, appraise options, and improve the trade offs.”⁴ Simply put, knowing more allows for more nuanced and comprehensive solutions to the complex problems decision-makers face.

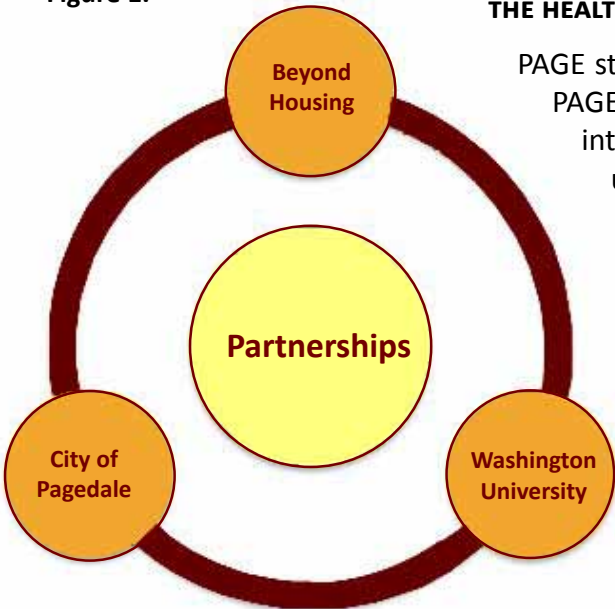
HEALTH IMPACT ASSESSMENT

This report presents results of a comprehensive Health Impact Assessment (HIA) whose focus is a \$45 million revitalization project along Page Avenue in Pagedale, Missouri, an inner-ring suburb within metropolitan St. Louis. An HIA is a combination of procedures, methods, and tools by which a policy, program, or project may be judged as to its potential effects on the health of a population and the distribution of those effects within the population. HIA seeks to provide decision makers from the non-health sector with recommendations to mitigate the negative and maximize the positive impacts on health and health inequities.

Following an extensive decision-making process involving many stakeholders and community input, the lead developer Beyond Housing and redevelopment consultants Prairie Dog Development Company developed a redevelopment plan that was approved in 2007 as a Tax-Increment Finance (TIF) District. A TIF district is a tool that uses future tax revenue to finance the current improvements that will create that revenue. TIF is designed to channel funding toward improvements in blighted areas where development might not otherwise occur. Subsequent site development will include housing, jobs, parks and open space, retail, and public and commercial facilities. Given this, the Page Avenue TIF District has the potential to bring many community and health benefits to the city. The design generated for the passing of the TIF ordinance is the focus of this Health Impact Assessment.

Figure 1.

THE HEALTHY PAGE PROJECT TEAM



PAGE stands for Policies and Actions Guided by Evidence. The Healthy PAGE Project team carried out the HIA and is composed of an interdisciplinary team of experts within the fields of public health, urban design, land-use and urban policy, social and economic capacity building, active living research, participatory research, and community engagement. Many members on the team have worked or are presently working across sectors in the St. Louis region and bring a strong understanding of the political, social and physical landscape of this region. Working relationships and trust with decision-makers, community leaders, and organizations have already been established by the team. The primary community decision-maker and partner in this research project is the developer Beyond Housing, in cooperation with the City of Pagedale.

Beyond Housing is a non-profit organization in St. Louis with a 30-year history in bringing stability to individual families through housing and support and in so doing has helped lower income families escape areas of concentrated poverty. This is accomplished by providing affordable housing and home ownership services; providing support services to families, children, and seniors; being a catalyst for community-wide rebuilding efforts; empowering residents to be leaders of their own neighborhood revitalization efforts; and promoting individual and community asset building. Under the leadership of Chris Krehmeyer, its President and CEO, Beyond Housing has been working with Pagedale and St. Louis County since 2000 to develop a holistic and participatory development model. Beyond Housing staff participated in all project meetings and served as an ex-officio member of the Steering Committee, while Chris Krehmeyer served on the Advisory Team.

RATIONALE FOR THE HIA

The Page Avenue HIA is a tool for making the health of the community a priority for discussion concerning the Page Avenue redevelopment. Many aspects of the plan have yet to be defined which could influence health behaviors, including for example (a) the types of businesses that will be drawn which could promote or discourage health behaviors (e.g., fast food, bars, video stores), (b) utilization of adjacent vacant lots which have the potential to be used for community gardens or playgrounds, (c) connections of sidewalks to existing walking and bicycling trails, and (d) street design characteristics to encourage or discourage walking or bicycling (e.g., trees, crossing aids, traffic calming).

VALUES OF THE HIA

The three defining values of the Page Avenue HIA are (1) interdisciplinary problem-solving, (2) actionable recommendations, and (3) meaningful community engagement. The Page Avenue HIA team is primarily staffed by three arms of Washington University, its schools of Medicine, Social Work, and Design, and also includes the School of Public Health at Saint Louis University. These disciplines represent different methods of working, different ways of defining and responding to problems. This HIA seeks to have these differences add to the comprehensiveness of the assessment and to the strength of the recommendations. This HIA seeks to deliver highly relevant information and tangible recommendations to decision-makers (Figure 2) to improve the positive impact and scope of their work. Community involvement is a vital component of a successful HIA and assists in identifying areas of both the strength and disparity of the affected population. Utilizing community participation to establish health impacts and identify locally relevant issues is built into the HIA process. Community involvement in the Page Avenue HIA occurred at numerous levels, took a number of forms, and built on the strong, existing partnerships between members of the project team, Washington University, Beyond Housing, City of Pagedale, and the Normandy School District. Some community members were involved in the Steering Committee, playing a role in planning and oversight of the process. Broader engagement was sought during larger community events and with community member involvement in other data collection exercises such as household surveys, focus groups, and informal discussions.

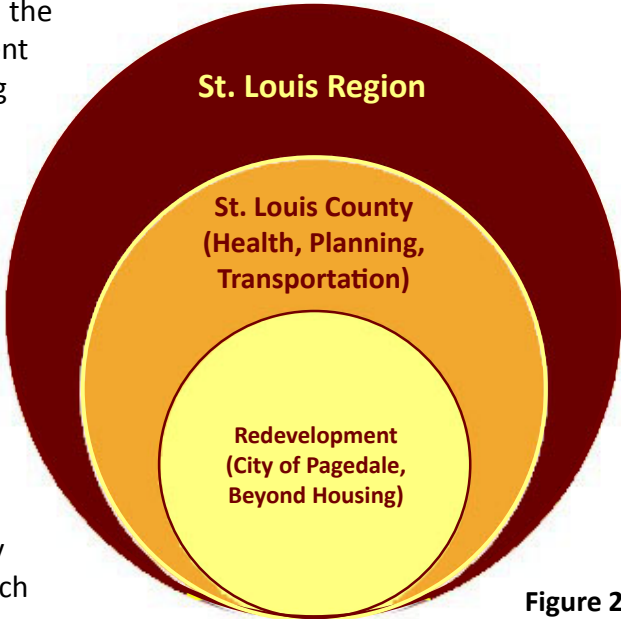


Figure 2.

Overview of Redevelopment Area

OVERVIEW OF THE PROPOSED REDEVELOPMENT PLAN

The Page Avenue redevelopment plan that resulted from the process required to achieve approval for the Tax Increment Finance zone is described in full in the design chapter “Identifying Redevelopment Options”. Overall, the plan included: a recently completed grocery store (16,000 sf), a bank (5,000 sf), 48 units of senior housing (360 sf each), office space (55,000 sf), retail commercial development (10,000 sf) and 175 units of residential townhouses (1000 sf each), and an urban park.

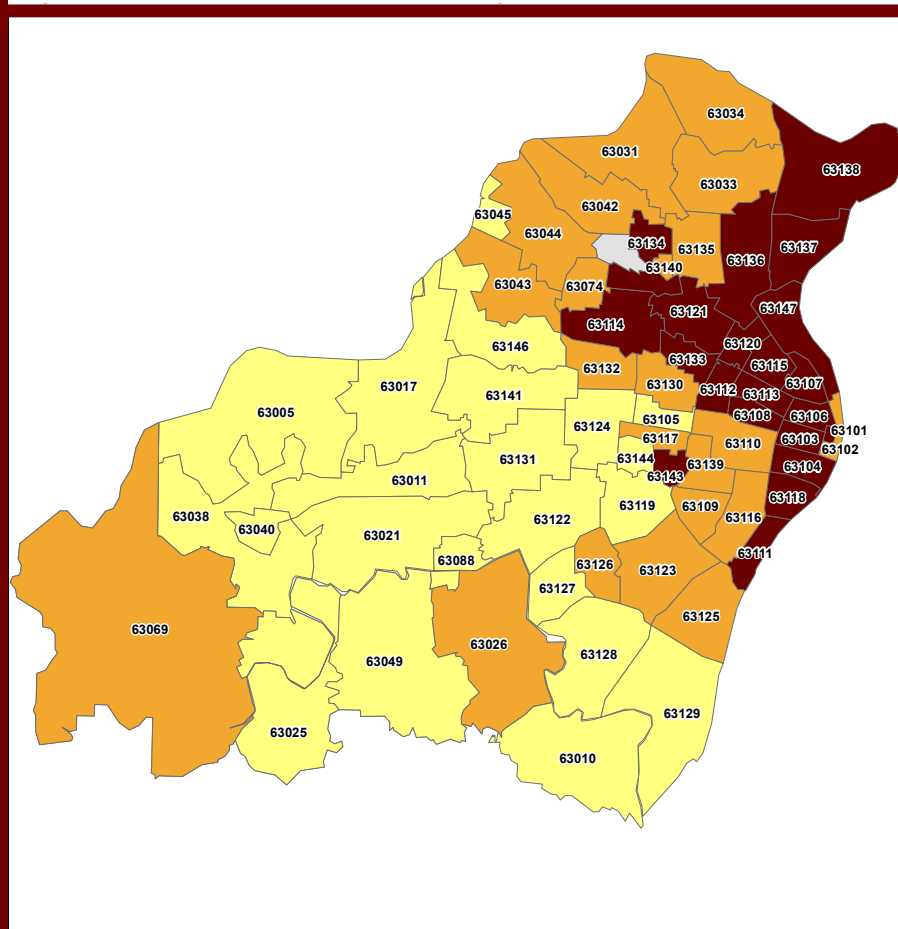
STUDY AREA

While the primary data collected for this HIA was focused on the municipality of Pagedale where the Page Avenue redevelopment is located, it was recognized that the area potentially impacted by the redevelopment extends beyond the Pagedale city limits. The study area was determined by zip code and natural boundaries formed by major roads.

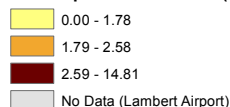
LARGER AREA

St. Louis County, Missouri is made up by 91 municipalities and encompasses 524 square miles immediately to the west of St. Louis City. Local government service delivery in St. Louis County is divided among over 150 political jurisdictions. The State of Missouri, St. Louis County government, 91 municipalities,

and a large number of special districts levy taxes separately and provide services directly to County citizens.⁵ The area of focus of this HIA is part of a geographic area comprised of 24 inner-ring suburbs that share the distinct boundary lines of: the City of St. Louis to the east, the city of University City to the south, the I-170 beltway to the west and Interstate 70 to the north. These 24 municipalities make up the Normandy School District. Like many inner-ring suburbs of American cities, this area has experienced decreasing population and declining investment over the years, resulting in deteriorating infrastructure, vacant housing and boarded up commercial structures. More recently the area was disproportionately affected by the U.S. foreclosure crisis relative to the rest of St. Louis County,⁶ resulting in a dramatic increase in vacant and abandoned properties. From 2006-2008 in this area, 21 percent of people were in poverty. Thirty-five percent of children under 18 were below the poverty level, compared with 15 percent of people 65 years old and over.⁷ Twenty percent of all families and 32 percent of families with a female householder and no husband present had incomes below the poverty level.



Cardiovascular and Diabetes Death Rates for Persons Aged 45-64 Years
Deaths per 1000 Persons (tertiles)



RHCDA
Regional Health and Community Development Authority
Map developed by RHCDA
August 16, 2010
RHCDA does not
guarantee the accuracy,
completeness, or
timeliness of this map.

Wide disparities in chronic disease indicators are apparent across geography and race/ethnic groups in the St. Louis area. The zip codes where the redevelopment is taking place (63133) and where the Normandy School District is located (63121) are ranked in the top third for early death due to obesity-related chronic diseases (cardiovascular disease and diabetes). In general, these geographic patterns in obesity-related mortality rates strongly overlap with geographic patterns in poverty and race/ethnicity in St. Louis. Further, compared to their White counterparts in the St. Louis metropolitan area, African Americans have a higher prevalence of many of the leading risk factors for chronic disease, for example, fair or poor health status, no leisure-time physical activity, obesity, high blood pressure, high cholesterol, and diabetes (Chart A, Appendix 1).

PAGEDALE AREA

The City of Pagedale was incorporated as a fourth class city (generally a city with population between 500 and 3,000 persons) in 1950, and encompasses 1.2 square miles.⁸ The majority of development occurred prior to incorporation between 1915 and 1930. Two major east/west roadways, St. Charles Rock Road (State Route 180) and Page Avenue (State Route D) are significant regional traffic arteries that connect the outer suburbs (to the west) with downtown St. Louis City (to the east), and both intersect the major beltways of I-170 and I-270. One Metro Link (light rail) station lies in Pagedale with another just beyond the city limits in Wellston. An existing railroad line with a spur is also within the limits of Pagedale.

As of the 2000 census, there were 3,616 people, 1,213 household and 891 families residing in the city of Pagedale. According to the 2000 census, the median household income of Pagedale is \$23,873 and the median age is 33 years old. Approximately 20 percent of the Pagedale population represents school age children; 12 percent are adults over 65; and, 56 percent of the population are adults between 18 and 65 years of age. Ninety-five percent of the residents in Pagedale are African American.

OVERVIEW OF BEYOND HOUSING AND RECENT PLANNING PROCESSES

Beyond Housing is a non-profit with 30 years of experience working in lower income communities and began its partnership with the City of Pagedale in 2000. That year, Beyond Housing and the City of Pagedale, with the assistance of St. Louis County, developed the Pagedale Community Action Plan. The purpose of the plan was to “incorporate the ideas and thoughts of the residents of Pagedale into a usable, dynamic plan that will initiate change in the areas of housing and family support services.” A combination of focus groups, public meetings and community survey were used to gather data that was then developed into a plan by a Citizen’s Advisory Board. The resulting plan included information regarding past planning, data on demographics and trends, compiled community input, goals and implementation recommendations with detailed actions for housing and family services. In 2005, in keeping with goals established by the 2001 Community Action Plan, Beyond Housing together with the City of Pagedale began efforts to redevelop a 4 block stretch of Page Avenue (State Route D), one of the primary commercial districts in the municipality. Between 2001 and 2005 several new initiatives were established as part of the community building plan. Among these initiatives were: the Pagedale Community Association, a home repair assistance program, and the Pagedale Family Support Center, which oversees the coordination of social services targeting children, youth, unemployed adults, renters, and the elderly.

Overview of Redevelopment Area Continued

In 2005, planning began for the Pagedale Economic Development Proposal as a comprehensive development strategy to redevelop areas of disinvestment and bring economic growth to the City of Pagedale and beyond. In January 2007 Prairie Dog Development Company and Scott Associates Planning Group were retained and an initial development program was generated in March 2007. The goals of the program were to:

- Empower the residents to be leaders of their own neighborhood revitalization
- Create conditions for mixed income families to settle in Pagedale
- Have pedestrian-friendly and green development approaches to all future development proposals
- Incur mixed-use development and generate avenues for further economic investment and growth
- Utilize innovative redevelopment tools

The first phase of development was identified as the Page-Ferguson Node with the Page Avenue Corridor identified as the second phase. In August of 2007, Beyond Housing and the City of Pagedale began the four steps necessary to designate the four block area which makes up the Page-Ferguson Node and the Page Avenue Corridor as a Tax Increment Finance (TIF) district. The steps for TIF approval were carried out between September and December of 2007 and included: the design of a redevelopment plan, the formation of a TIF commission which included area stakeholders, the holding of a public TIF commission hearing regarding the proposed redevelopment, and the passing of a TIF ordinance. The TIF ordinance designating the area as a TIF district was passed in December of 2007 and is the primary financing structure for current and proposed redevelopment. The design generated for the passing of the TIF ordinance is the focus of this Health Impact Assessment.

CONCURRENT INITIATIVES

There are several on-going programs and initiatives associated with this focus area that were important to consider relative to the assessment of and recommendations for the Page Avenue redevelopment cited in this Health Impact Assessment.

BEYOND HOUSING PROGRAMS

Beyond Housing is an organization which builds strong communities by providing affordable housing and homeownership services to support families, children and seniors. According to their website (www.beyondhousing.org), the organization works to help eliminate the consequences of poverty by:



- Stabilizing and improving the housing stock
- Helping families obtain educational, employment, and support services
- Building community leadership capacity
- Promoting economic development
- Promoting individual and community asset building
- Empowering residents to be leaders of their own neighborhood revitalization efforts

Some of Beyond Housing’s current programs include:

- Individual Development Accounts and Financial Education
- Homeownership Center Programs
- Catch the Dream- Keep the Dream
- Homeowner Asset Preservation Initiative (foreclosure prevention)
- Don’t Borrow Trouble – Loan Counseling
- Healthy Home Repair Program
- Bridge to Homeownership Training
- Assets for Life – Savings Program
- I Can Save (Financial Education for Youth)
- Foreclosure Prevention Workshops
- Service-Enriched Rental Housing
- Family Support Center Programs
- Case Management
- Home repair services
- Back-to-Schoolapalooza: An annual event to gather and distribute school supplies
- After-School Program
- Red Bird Rookies Youth Baseball League and Rams 28 youth football club
- Monthly food pantry
- Summer Camp/Freedom School for Pagedale children

“...efforts have been launched in an effort to engage all residents in all municipalities to seek their ideas, listen to their concerns, and formulate an action plan...”

24:1 Initiative

The 24:1 initiative is a collaboration of elected officials and stakeholders from the 24 communities that form an educational and political area defined by the Normandy School District boundaries; who are working toward one goal: to revitalize the public schools and give a united voice to the collected townships of this district. Assisted by Beyond Housing and a committee made up of civic leaders and stakeholders, efforts have been launched to engage residents in all municipalities to seek their ideas, hear their concerns and formulate an action plan to address the needs of all of the residents of this area.

Historically, this area has been fragmented given the multiple jurisdictions in a small geographic area, leading to competition between municipalities and weak political influence on decision and policy-making at the county and state levels—particularly with regard to the distribution of government-funded resources. If successful, this initiative strengthens the leverage of this area to seek resources and power in the region and helps to strengthen the public schools by creating a more unified district/policy zone.

St. Vincent Greenway

The St. Vincent Greenway is the work of the Great Rivers Greenway District, and will potentially bring seven miles of walking, running, and bicycle paths to the study area. In Pagedale, the Greenway will extend north-south along Engelholm Creek and will connect nearby amenities such as St. Vincent Park and Rock Road Metrolink station to the north, and the Wellston Metrolink station to the south.

The clean-up of Engelholm Creek, which will act as the “backbone” for the the Greenway, is among many aspects of Pagedale which will be remediated as the project continues.



Healthy PAGE Project

Overview of Redevelopment Area Continued

WASHINGTON UNIVERSITY

Center of Social Development - IDA

The Center of Social Development at the Brown School of Social Work (CSD) is known nationally and internationally for research and knowledge, applied innovations, and policy influence in saving and asset building in low-income households. CSD developed the Individual Development Account (IDA), a matched savings program for the poor. Over the past decade, 40 states and a dozen other countries have adopted IDA policy and programs. The IDA concept has become a mainstream and bipartisan policy discussion, leading to proposals for universal 401 (k)s and other large-scale policies that match savings for the poor. Beyond Housing directs the largest IDA program for individuals and youth in Pagedale and the St. Louis region. CSD consults in the research design, implementation, and other aspects of this IDA program.

Streetscape

Starting in 2009, the Sam Fox School of Design and Beyond Housing developed the Streetscape partnership that is carried out by students, Beyond Housing, and volunteers once a year. This project involves students working with residents on a selected block of Pagedale to design enhanced landscape solutions that unify

the block and encourage neighbors to work together to improve the curb appeal of their property and the overall block. The designs are then implemented in one day by the students, residents and over 100 volunteers organized by Beyond Housing.



Studios and Seminars

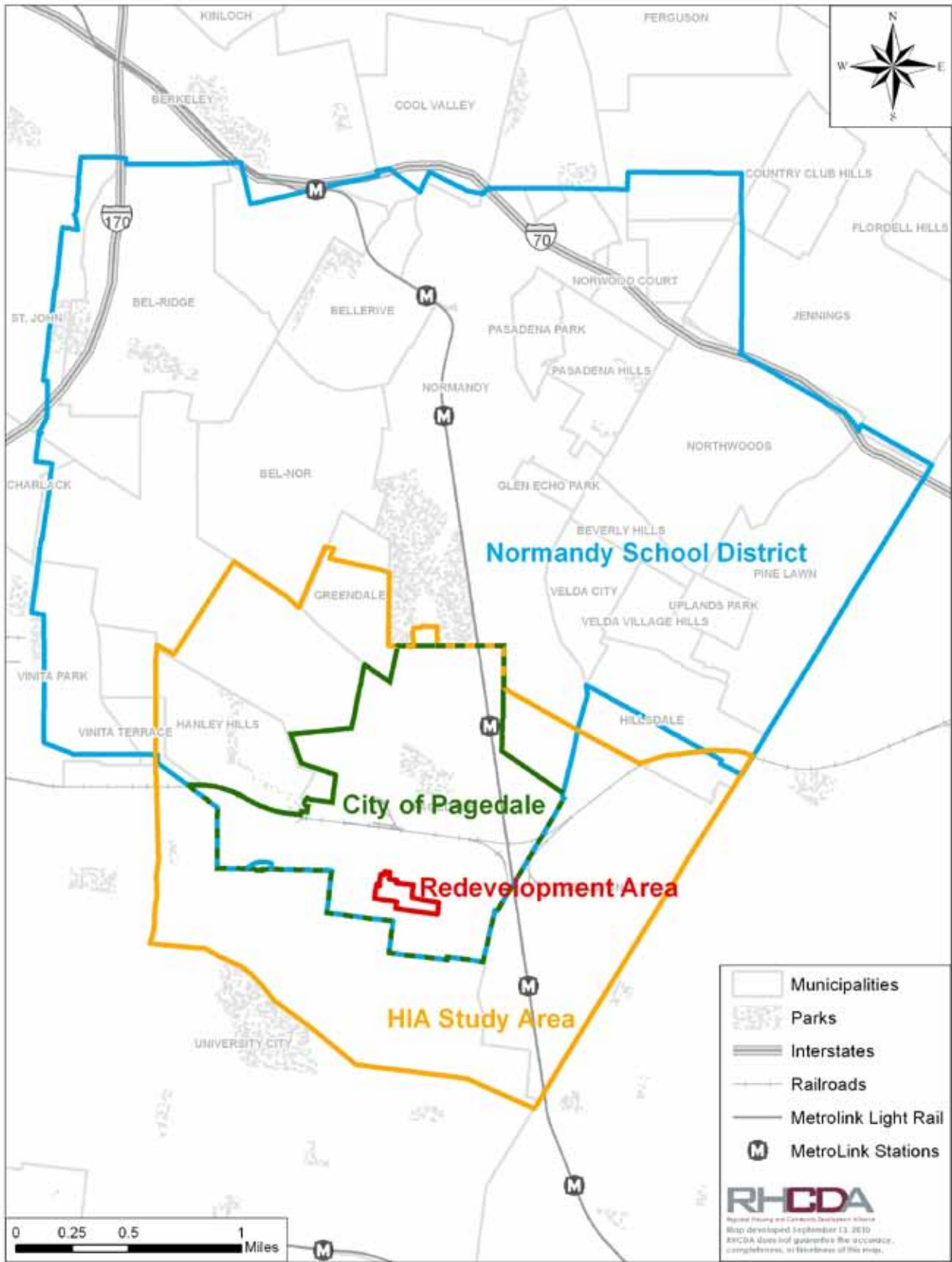
In the fall of 2008, the Sam Fox School pledged a five year commitment to working with Beyond Housing in the area of the Normandy School District, beginning with Pagedale. The school agreed to focus a seminar or studio in the area every semester, each one building upon the work of the previous semester. To date, the Sam Fox School has carried out three seminar classes and one semester-long design/build project (Fall 2009) in Pagedale which was a shade and performance pavilion at a neighborhood playground, now home to a grass-roots art program taught by area residents.

Fruit Hill Initiative

This initiative grew out of the HIA activities in the fall and winter of 2009. After considerable focus and discussion surrounding physical activity, access to healthy food and community identity, Pagedale leaders asked students at the Sam Fox School, who were focused on the area in a seminar, to put together a feasibility study and project proposal for community orchards. The aim was to convert vacant lots that are too small for new housing in Pagedale into community orchards and gardens. The purpose was to increase citizen awareness regarding healthy lifestyles and to turn vacant lots, which symbolize disinvestment, into community assets as a symbol of community pride and identity, in addition to providing access to fruits and vegetables. This project has been embraced by the City of Pagedale, the Sam Fox School and Beyond Housing

(Top 2) Healthy PAGE Project, (Bottom) Artlantis

and a pilot project is currently underway. A financial commitment of \$10,000 has been committed to this project by CITI Corporation to be administrated through Gateway Greening, a non-profit organization that organizes and builds community gardens. If the pilot project is considered successful, the city has pledged to continue implementing orchards around Pagedale. A branding and marketing proposal is also being explored around the Fruit Hill identity. Pagedale was once known as Fruit Hill due to a developer in the area that planted fruit trees on every property.



Overview of Redevelopment Area

Methodology

Project HIA Methodology

OVERVIEW OF METHODS

Health impact assessments involve at a minimum four steps: *screening* to determine value and purpose; *scoping* to identify health issues and research methods; *assessment* of baseline conditions, impacts, alternatives and mitigations; and *reporting* of findings and recommendations. *Monitoring* is an important follow-up activity in the HIA process to track the outcomes of a decision and its implementation. The following describes the four key steps of the HIA, including methods for basing the HIA recommendations.

SCREENING

Should an HIA be conducted?

Beginning in late 2008, many discussions occurred between members of the Core Team, Beyond Housing, senior faculty, and HIA experts to assess the value of the Page Avenue HIA. The Core Team decided to carry out the HIA for the following informed reasons:

- **POTENTIALLY SIGNIFICANT HEALTH EFFECTS:** Potential health impacts of the redevelopment are significant given the current physical health and economic status of the population, as well as planned improvements to the infrastructure and economic vitality of this section of Page Avenue.
- **ADDED VALUE:** The Page Avenue HIA will contribute new information to the decision-makers about health impacts and redevelopment options. The current redevelopment plan addresses economic development and service disparities; however, health priorities such as physical activity and healthy eating have not been considered.
- **POLITICAL OPPORTUNITY:** The results of the HIA will likely be valued by decision-makers. The stakeholders, lead developer (Beyond Housing), City of Pagedale and the St. Louis County Department of Planning expressed interest in the HIA recommendations. Strong partnerships between these organizations and members of the Core Team have been established. In addition, the HIA could potentially have positive spillover effects on decision-making underway concerning the broader Normandy School District comprised of 24 municipalities, including the City of Pagedale. St. Louis County, Beyond Housing and Washington University are trying to unify this District from a policy standpoint.
- **TECHNICAL FEASIBILITY:** The HIA team has sufficient data, resources, and multi-disciplinary expertise to carry out a comprehensive HIA. Washington University contributed funding to support the HIA planning and data collection. Additional funding was secured from the Robert Wood Johnson Foundation.
- **TIMING:** The redevelopment project is in the planning and design phases and a one-year time frame was appropriate for conducting a comprehensive HIA. Moreover, the timing of the project and plans for the redevelopment provided a window of opportunity for influencing future decisions. Many aspects of the plan have yet to be defined which could influence health.
- **WELL-DEFINED PROJECT PROPOSAL:** At the time the Page Avenue HIA was being considered, a plan for the TIF redevelopment district had been drafted. The HIA team agreed to focus on the redevelopment phase along Page Avenue and not the other phases of the economic development plan for the City of Pagedale.

A letter of notification about the HIA was sent to 29 local and county decision-makers in March 2010.

SCOPING

How will it be done? What will be looked at?

The purpose of the Scoping step is to lay the groundwork for the scope of the HIA. During the course of weekly Core team meetings (starting in March 2009) and three Steering Committee meetings of stakeholders, the following decisions were made:

- **ROLES:** The Core Team - comprised of nine university faculty, staff, and students and one Beyond Housing representative - would direct the HIA process, collect data and community input to inform evidence-based recommendations, and draft recommendations for review by the community Steering Committee. The role of the Steering Committee - comprised of eight community stakeholders and experts - would be to identify priority impacts of the redevelopment and provide input and approval of the recommendations. The role of Beyond Housing (primary decision-maker) would be to assist with community outreach, recruitment of community members in information-gathering activities, and disseminating information to the community.

Beyond Housing also agreed to provide information about the community, redevelopment plans, and their activities to facilitate the assessment activities of the HIA. Roles of the Core Team and Beyond Housing were outlined and documented in a Memorandum of Understanding, signed by both parties.

- **TIMELINE AND WORKPLAN:** The HIA began in April 2009 after the Core Team received training from Dr. Candace Rutt from the U.S. Centers for Disease Control and Prevention. The project is funded through September 2010. The Core Team has held bi-weekly meetings and monthly sub-team meetings focused on specific assessment and evaluation activities. The initial timeline and workplan are described in the RWJF grant application; however they have evolved somewhat over the course of the HIA.

- **GEOGRAPHIC BOUNDARIES OF THE AFFECTED POPULATION:** The geographic boundaries include the 63133 zip code and area of the 63130 zip code north of Olive Boulevard. This area encompasses the City of Pagedale and surrounding communities that may be impacted by the Page Avenue redevelopment project.

- **PRIORITY HEALTH IMPACTS OF THE REDEVELOPMENT:** During the second meeting of the Steering Committee, members identified seven health impacts of the redevelopment. These represent important social, economic, and environmental determinants of health that are likely to be affected by the redevelopment. Data from the assessment phase and this report are organized around seven priority impacts: *Employment, Access to goods, services, and recreation, Access to healthy foods, Pedestrian safety, Community safety, Community identity, and Housing.*

- **ANALYTIC METHODS:** Multiple quantitative and qualitative methods were used to assess the health, strengths and needs of the affected community, in particular in the City of Pagedale where the redevelopment is planned. More information about assessment methods may be found below. The health predictions of the redevelopment plans were based on evidence from scientific studies, where available, and supplemented by community values with evidence from the community residents and stakeholders, local data, and design expertise. The prediction of the health impacts of the project components involved a qualitative judgment of certainty and significance of the health impacts and an evaluation of any inequitable impact.

- **ROLE OF COMMUNITY PARTICIPATION:** Community participation in the HIA process was a priority for the Core Team and Beyond Housing. Community input was sought at a community open house, in focus groups, and by residents participating on the Steering Committee.

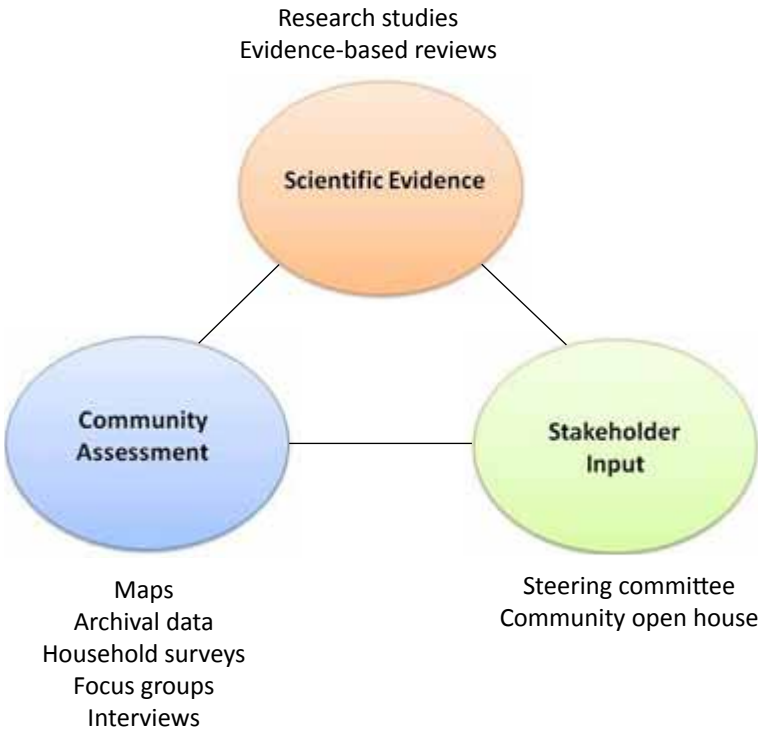
Project HIA Methodology Continued

ASSESSMENT

What are the health impacts? Who is impacted?

The assessment step of an HIA is said to be the ‘engine’ of HIA which moves the whole process along towards practical outcomes. The key activities during this step of the Page Avenue HIA included profiling the affected population; analyzing the proposed redevelopment plan; identifying and characterizing the potential health impacts (prediction); and making recommendations for the management of those impacts. A variety of quantitative and qualitative methods were applied to understand the affected population and how the redevelopment would impact health. The following table summarizes each method. The methods were classified as those related to community assessment; scientific evidence; and stakeholder input.

Figure 3. Methods of gathering information



REPORTING

Creating a coherent, usable synthesis of findings for the target audience

Two versions of the Page Avenue HIA Report will be disseminated: (1) Brief report for decision-makers, planners, community stakeholders, and lay audiences. (2) Full report for the technically trained audiences. Drafts of each version of the HIA reports will be shared with the Steering Committee, advisors, and Beyond Housing for review and comment. The final HIA report will be made publicly accessible by request from the Core Team, Steering Committee, and relevant HIA websites for wide distribution.

Assessment Method		Description
Community Assessment		
	Household Survey	Beyond Housing and Washington University in St. Louis worked together to administer this household survey among a sample of households in Pagedale. The two purposes of the survey were to evaluate whether three goals identified in the 2001 Pagedale Community Action Plan had been accomplished as a result of the community building efforts of Beyond Housing, the City of Pagedale and other partners over the past seven years. The second purpose was to provide information for planning and prioritizing the Page Avenue redevelopment and future projects and programs in Pagedale. The survey consisted of 121 questions pertaining to: personal safety, neighborhood security, community trust, physical activity, shopping for food and eating out, diet, personal health, employment, wages and income, assets, community engagement and involvement, community concerns, and demographics. 453 households in the City of Pagedale were randomly chosen to take part in the survey. Data collection consisted of a structured, in-person interview of heads of household in the summer of 2009. Homes were visited up to three times, at different times of day, by pairs of volunteers. Known vacant properties were excluded, although more were discovered over the course of the survey. A total number of 155 heads-of-household participated in the survey. 40% of participants lived in Ward 1, 27% in Ward 2, and 33% in Ward 3.

Assessment Method		Description
Community Assessment Continued	Mapping	Maps of food outlets and financial institutions were created to assess availability of places to shop, eat out, and manage financial resources in the community. Food outlets consisted of food stores and restaurants. Financial institutions consisted of banks, credit unions, insurance offices, mortgage brokers, pawn shops, title loans, and check cashing/payday lending centers. Graduate students first used existing data sources to identify location of these businesses, then upon discovery of incomplete data, they drove the streets of the study area (including a one-mile buffer) to enumerate each business. Maps of businesses were created by Eleanor Tutt at the Regional Housing and Community Development Alliance and are available online at: http://www.rhcda.com/HealthyPAGE/map.html
	Food store Audits	During the summer of 2009, two graduate students conducted an audit of nine food stores in Pagedale to assess availability of healthy food options. They used a tool and protocol developed by Dr. Elizabeth Baker, Dr. Cheryl Kelly and others from Saint Louis University School of Public Health.
	Focus Groups	A focus group is one method of engaging residents in dialogue about community priorities commonly used as part of the HIA process. Focus groups among 18 Pagedale residents in each ward were conducted to: <ol style="list-style-type: none"> 1. Provide a more in-depth picture of the strengths and challenges related to physical activity, nutrition, physical infrastructure, and economic development that may be affected by the redevelopment. 2. Identify planning, program, and policy issues of high priority. 3. Identify the barriers community members face in the process of change.
	Key Informant Interviews	Key informant interviews were conducted among 21 decision-makers involved in either the redevelopment of Page Avenue or the Normandy School District. Participants included City of Pagedale elected officials, lead developer Beyond Housing staff and board members, and staff from county government and regional organizations involved in economic development, planning, health, and transportation. The purpose was to assess baseline knowledge and priorities concerning the Page Avenue, as well as perceived health impacts of the redevelopment, prior to delivery of HIA recommendations. Perspectives on the well-being of residents and perceived challenges were also gathered.
Scientific Evidence	Research Studies and evidence-based reviews	When available, scientific studies in the form of systematic reviews and individual studies were used to inform the predictions of health impacts of the redevelopment.
Stakeholder Input	Steering Committee	Over the course of four in-person meetings, the Steering Committee, comprised of eight community stakeholders and experts, identified priority impacts of the redevelopment and provided input and approval of the recommendations.
	Open House	40 people attended an open house that was held on April 26, 2010 at the Pagedale City Hall. The purpose was (1) to share the TIF redevelopment plan with residents and to provide an opportunity for questions with the lead developer; (2) to display the results of the household survey and focus groups; and (3) to present how the redevelopment could affect the quality of life for residents and gather feedback on its potential impacts during small breakout sessions.

Priority Impact Issues

The Page Avenue HIA identified seven priority impacts of the redevelopment on health which represent important social, physical, and economic determinants of health. Using data from community assessments, scientific evidence, and stakeholder input, this section documents (1) how each priority impact is connected to health, (2) what we learned about the community, (3) opportunities the redevelopment presents to maximize the health benefits for each priority impact, and (4) recommendations.

Employment

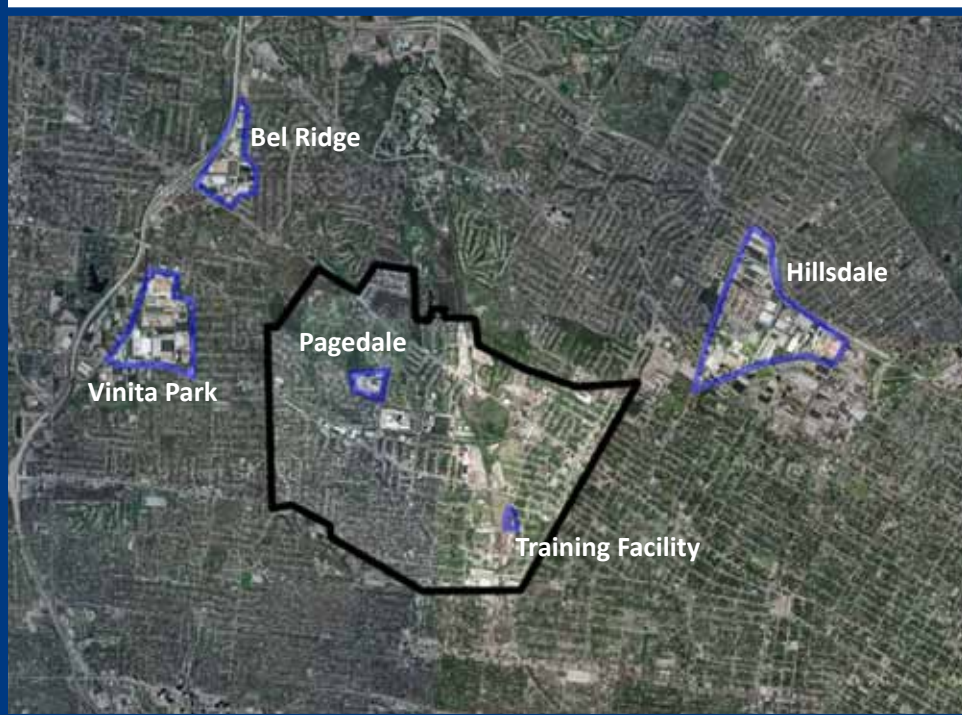
THE CONNECTION TO HEALTH

Research has demonstrated the connection between low incomes and higher rates of morbidity and mortality.^{9,10} Thus, areas of concentrated poverty tend to suffer higher rates of disease and premature death than better-off areas. A recent longitudinal study supports the causal effect of full-time employment on positive health outcomes including perceived health and physical functioning.¹⁰ In addition, a number of recent studies find a relationship between income inequality and health status with higher levels of inequality associated with poorer health outcomes.^{9,10} This research implies that it is important to consider the distribution of income as well as the absolute levels of income in a community.

WHAT WE LEARNED DIRECTLY FROM THE COMMUNITY:

The economic vitality of any community depends considerably on the presence of adequate, gainful employment. In Pagedale, residents are concerned about economic development as was demonstrated in the survey conducted for this HIA in which economic development was the most frequently named priority for future improvement. In focus groups, residents noted that many businesses in the area had closed over the years and that some remaining local businesses do not appear to hire residents. Many industrial parks in the area are located outside of Pagedale. During discussions at the open house, residents expressed interest in employment opportunities presented by the redevelopment but some were also worried that those opportunities will not benefit residents.

These concerns are consistent with census data for the area showing high levels of poverty (23%) and low levels of median income (\$29,190 in 2007) compared to Saint. Louis County (7% and \$57,528 respectively). In addition, the HIA survey respondents reported 17 percent unemployment (and 16% with only part-time employment) with 14 percent currently receiving unemployment compensation. Further indications of low levels of employment and income are a high level of food stamp (37%) and Earned Income Tax Credit (22%) receipt among the survey respondents. While there are many reasons for high levels of unemployment in the area, low levels of educational attainment contribute to the problem due to their association with higher rates of unemployment and lower income levels.¹¹ Thus, the relatively high rate of high school dropout (18%), low rates of high-school graduation (30%) and college degrees (8%) reported in census data for the study area contribute to lower rates of employment and income. Income inequality is present in the study area with most incomes falling between \$15,000-70,000. The redevelopment



has the potential to either exaggerate or ameliorate existing inequalities. Indeed, at the community open house, there were concerns expressed that the redevelopment, like some urban renewal projects could negatively affect residents by pricing them out of the housing market or excluding them from economic opportunities. The Pagedale community is also quite young, with almost half the population under 25 years of age, underscoring the need to develop strategies to increase jobs especially among younger age groups.

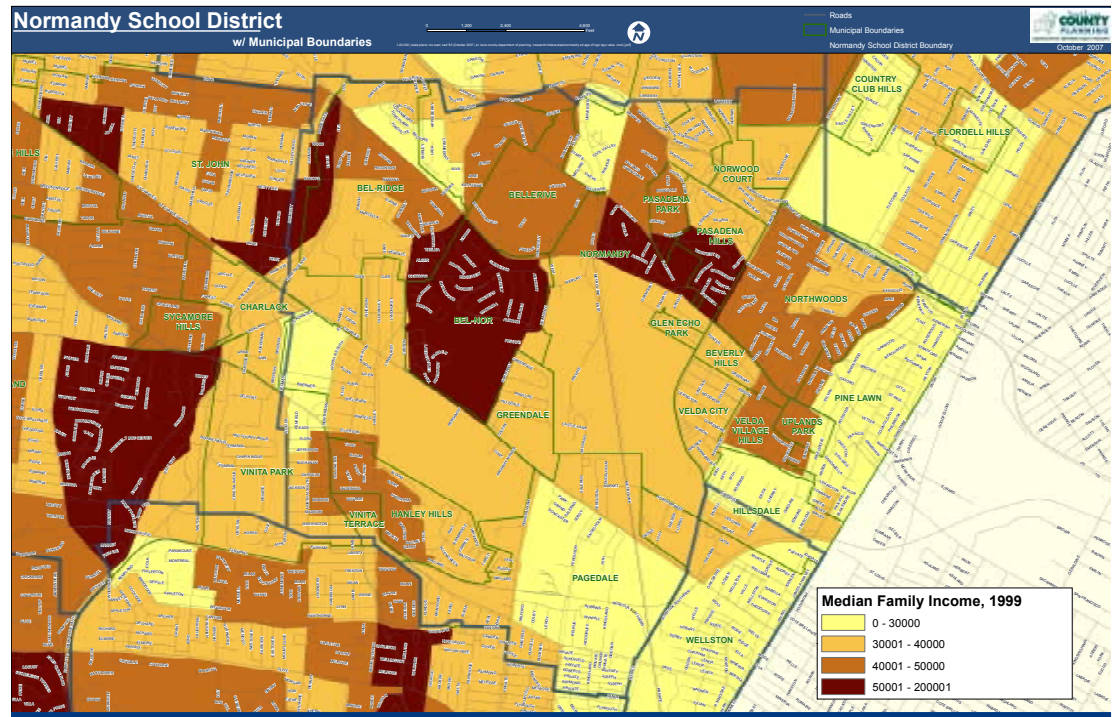
OPPORTUNITIES THE REDEVELOPMENT PRESENTS

The redevelopment will bring additional employment opportunities to the area and thus has the potential to improve health outcomes related to employment such as lowering morbidity and mortality. A primary impetus for the redevelopment is to stimulate economic activity in this community by attracting new businesses to the redevelopment area. The Save-a-Lot, the grocery store recently completed is hiring people, and community members expressed considerable interest in learning how to apply for the available jobs there. The quantity and quality of jobs created through the redevelopment depends on the types of enterprises that can be attracted to locate along the Page Avenue corridor. It is not known at present what these will be although services such as a bank and pharmacy have been mentioned. It would

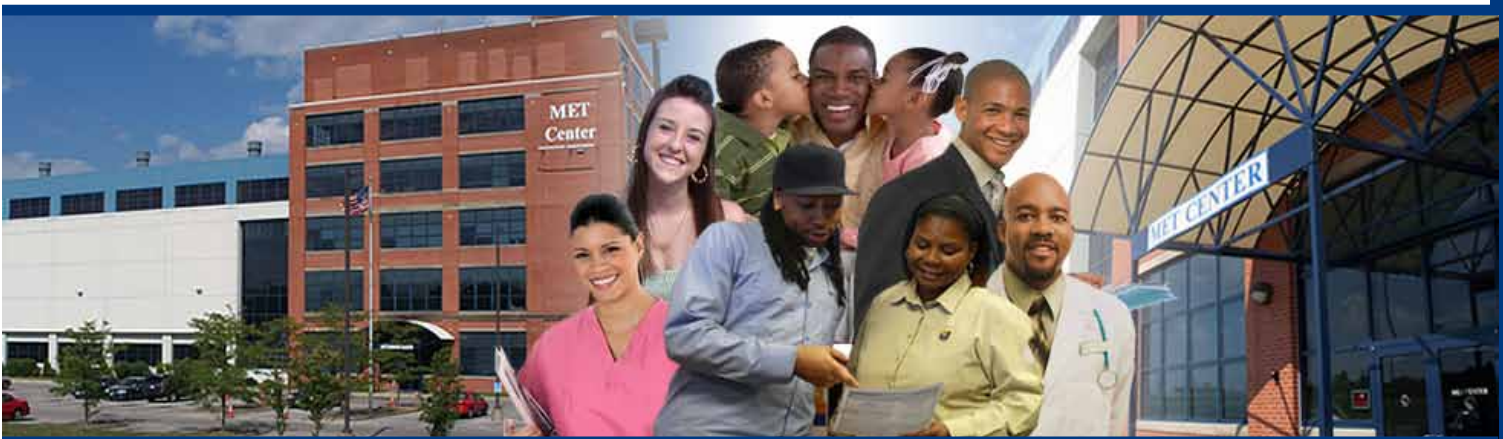
be beneficial to residents if these businesses offered a living wage. A living wage is the minimum hourly wage necessary for a person working 40 hours a week to afford housing, food, transport, health care and recreation. In Pagedale, this is determined to be about \$8.30/hour, based on the 2008 monthly median rent of \$400. Furthermore, programs that enhance the job skills and preparation of residents could improve their chances of obtaining employment.^{12,13,14} Meeting

needs of residents to access goods and services is a priority, but employment

possibilities for residents should also be prioritized as the development moves forward. Improving the incomes and employment rates in the study area will enhance the residents' ability to patronize whichever businesses seek to locate in the area, thus improving the marketability of the community.



Metropolitan, Education, & Training Center, located at 6347 Plymouth Avenue in Wellston, MO.



RECOMMENDATIONS

Strategy	Recommendations	Decision-maker	Source of Recommendation
<i>Policy</i>	1. Recruit businesses that prioritize employing local residents	Beyond Housing; City of Pagedale	Community
	2. Incentivize Pagedale employers to offer a living wage at a minimum of \$8.30/hr.	City of Pagedale	Research
	3. Incentivize employment of residents in new retail and to fund workforce development programs with a development agreement or community benefits agreement.	City of Pagedale; Developers	Research
<i>Design</i>	4. Design buildings for mixed use.	Beyond Housing	Research
	5. Provide space for a community marketplace to support local microenterprises.	City of Pagedale; UMSL Extension	Key Informant
<i>Program</i>	6. Increase entrepreneurship training and business management support to job training services to improve the employability of residents.	Social service agencies	Key Informant
<i>Education</i>	7. Inform residents of potential job opportunities offered by new enterprises.	Social service agencies	Community
	8. Provide information about job training and job application.	Social service agencies	Community

Access to Goods, Services & Recreation

Having access to goods, services, and recreation means being able to conveniently obtain goods, visit businesses that provide services, and have safe places to exercise or play. Accessibility is defined as reflecting both the ease of reaching potential destinations and the nature of the opportunities for activity.¹⁵

THE CONNECTION TO HEALTH

Accessibility to goods, services, and recreation is associated with increased physical activity, which has many documented health benefits.¹⁶ For example, more walkable communities encourage physical activity. Neighborhood accessibility of destinations to shop, work, or run errands is associated with increased walking for transportation.^{17,18} Walkability and neighborhood accessibility reflects both well-maintained infrastructure and the residential, retail, and employment density of an area. In addition, greater access to parks and open space is associated with higher levels of recreational physical activity, among youth and adults.^{19,20} In contrast, people who have to drive more often while completing their daily activities have higher obesity rates.^{21,22,23} and lower physical activity levels.²⁴

Accessibility to quality childcare is especially important. Quality childcare increases childhood educational and job outcomes.²⁵ As well, child development is a powerful determinant of health in adult life because of the strong relationship between measures of educational attainment and adult disease.²⁵ Comprehensive, center-based, early childhood development programs for low income children have strong evidence of improved cognitive development and academic achievement.²⁵ There is an existing Head Start program in Pagedale and a new comprehensive child-care center planned in the neighboring community of Wellston by the St. Louis County Economic Council. Access to specific types of services can have both positive and negative health and economic impacts.

- **Timely access to primary health services prevents serious hospitalizations**
- **Access to local financial institutions help families create and maintain wealth**
- **Increased density of alcohol outlets is correlated with increases in alcohol-related harms.**²⁶

WHAT WE LEARNED DIRECTLY FROM THE COMMUNITY

In the 2009 household survey, community described their concerns for Pagedale. Concerns regarding activities and services were one of the most frequently mentioned. The two main areas of concern within this category were activities for youth and services for senior citizens. Over the past 5 years, improvements to activities and social services were one of the impacts perceived as most important to survey respondents. Improvements mentioned include the opening or refurbishment of parks, a new senior housing complex, and new activities for youth. Beyond Housing established the Family Support Center during this time in Pagedale, through which it delivers a range of social services including an Individual Development Account (IDA) and an after school program for younger children.

For the question, “What are the main improvements you would like to see in the community over the next 5 years?”, there was a notable shift to a desire for more commercial development in Pagedale, with many residents in both the survey and focus groups expressing a desire to shop without going outside of Pagedale (Map D, Appendix 2). Focus group participants said they have to leave the community to get the things they need regarding healthy food, places to be physically active, and financial services (Map A, Appendix 2).

Youth and senior services

Children, youth, and seniors were foremost on the minds of survey respondents in terms of their desires to see more social services. In each of the focus groups, the participants said there is nothing for kids, especially older kids, to do in Pagedale. Focus groups noted several needs specific to seniors living in Pagedale. Each focus group highlighted specific senior needs such as exercise programs geared toward

seniors (i.e., chair exercise programs), home care, and housing. However, most of the focus groups discussed the need for a bus to take seniors places within the community and to destinations further away (e.g., Branson, Missouri). The participants explained that there used to be a bus for seniors but Pagedale lost funding for it.



Recreational Facilities

The 2009 household survey asked respondents to self-evaluate how often they walked either for transportation or recreation on a monthly basis. Forty percent of survey respondents walked in their neighborhood to get from place to place (for transportation). However, forty-three percent of residents reported no leisure-time physical activity whatsoever within the past month. More residents may be able to increase their physical activity if the number of places residents can walk to for their day-to-day needs is increased. Forty-one percent of survey respondents reported going to a park to exercise in the past 30 days. The most popular places to exercise were streets and sidewalks (33%), City Hall fields (15%), St. Vincent Park (13%), and Baerveldt Park (11%).

Focus group participants were asked what makes it easy or difficult to get exercise in Pagedale. Participants mentioned cost, safety, and access. St. Vincent Community Center is a potential place to get exercise but participants stated that the cost associated with the use of St. Vincent is a barrier. Participants noted other concerns about safety within Pagedale that hinders walking. They identified traffic, dogs, and older men approaching teenage girls as safety issues. Other participants also noted that lack of sidewalks or uneven sidewalks create a situation where people walk in the street which puts them at risk of being hit by a car:

“I used to walk back in the days here in Pagedale, and the reason I stopped walking, they didn’t have any sidewalks, so they really need to improve the sidewalks because you’re all in the street, you can get hit, so I stopped walking because of that one.”

The participants noted that there are a lot of little parks in Pagedale and some of them have been improved. One participant noted that the park behind the police department was redone and it was great. Yet, the participants said that parks are mostly for younger kids and older kids need things to do.

Access to Goods, Services & Recreation Continued

One participant suggested building a basketball court to get the older boys to stop playing basketball in the streets. Others noted that older youth need a place to go, like a community center. In general, participants said it would be nice to have a place where the whole family could go and get exercise together.

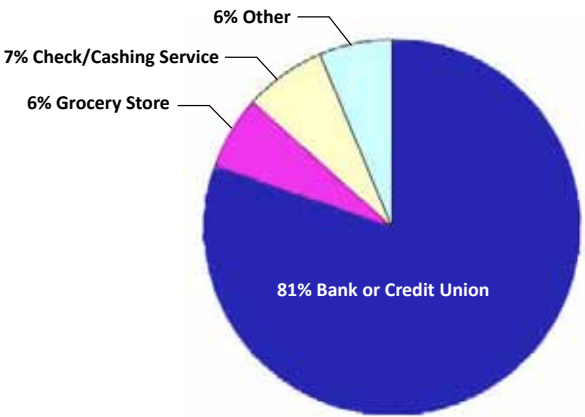
The participants highlighted a number of potential opportunities to create or enhance places to be physically active. One participant noted that she sees a lot of children riding their bikes on the sidewalks of Page Avenue. She explains that the street is unsafe and a bike trail would be nice:

“It would be nice if Pagedale could put in maybe a bike trail or something like that because kids, they ride along the sidewalk and as far as riding down Page, that’s a very dangerous street to ride down it. I’ve seen a number of people get hit on Page so a bike trail would be nice. It would be beneficial for the kids and the adults also, because I like to bike ride myself.”

Financial Services

Eighty percent of survey respondents cash their checks at a bank or credit union, while 6% do so at a grocery store, 7% at a check cashing service, and 6% at an alternate location. When asked about financial services in Pagedale, focus group participants explained that there are no banks in Pagedale. The participants said that they go to Clayton, University City or downtown St. Louis City to do their banking. ATM and check cashing services are available in Pagedale; however, the participants noted the fees are high. They said they would like to see a full range of banking services available in Pagedale.

Figure 4. Where checks are cashed among residents



OPPORTUNITIES THE REDEVELOPMENT PRESENTS

The redevelopment includes a full-service grocery store which has potential nutrition benefits, and is described more fully in the Access to Healthy Foods priority section. The redevelopment has plans to bring in 70,000 square feet of commercial and office space into the community. While it is challenging to attract businesses to a low-income community like Pagedale, clear priorities for recruitment were identified by the community in focus groups and in community meetings. Priority businesses and services to attract include a bank, a community center, and a drug store. Other businesses requested were family-style restaurants, a laundromat, clothing stores, health clinic, and recreational opportunities for youth such as a skating rink. Businesses that are associated with negative health outcomes such as liquor stores and fast food restaurants should not be recruited to locate in the redevelopment.

It has been more challenging to persuade businesses to expand into low-income areas in the current economy. Developing a more branded identity and marketing strategy for potential retailers would help improve the situation. The City of Pagedale and Beyond Housing are currently formulating ideas, including the Fruit Hill Initiative and “Growing Pagedale Together.” Another strategy to recruit businesses is to encourage entrepreneurs from within the community to address the needs of the community. The redevelopment will be replacing many of the old commercial buildings along Page Avenue that house small, local businesses. These tenants may not be able to afford the rent in a newly constructed building. We recommend further research into providing low-cost space in the form of an outdoor community marketplace to publicize goods and services from local businesses that are too small to rent their office or

storefront. The redevelopment presents the ideal opportunity to improve the walkability and bikeability of Pagedale by both increasing the density of the commercial district and by improving the street and sidewalk infrastructure of the area. Improving access to goods and services is not only about locating these businesses within the community, but making it plausible for pedestrians and bicyclists to safely travel and enter businesses. Adding bike lanes to Page Avenue, Ferguson Avenue, and St. Charles Rock Road, as well as better sidewalks will improve access to the new St. Vincent Greenway and existing parks on Ferguson and St. Charles Rock Road.

RECOMMENDATIONS

Strategy	Recommendations	Decision-maker	Source of Recommendation
Policy	9. Develop branded identity and marketing materials for potential retailer in the community, i.e. Fruit Hill, “Growing Pagedale Together.”	City of Pagedale	Key Informant; Steering Committee
	10. Prohibit or limit retail establishments associated with adverse health outcomes such as liquor stores.	City of Pagedale	Research
	11. Partner with Financial Institutions to help residents access micro-business loans.	City of Pagedale; Beyond Housing	Research
Design	12. Recruit health-related goods and services, such as a pharmacy, health clinic, and recreational opportunities, for the redevelopment.	City of Pagedale; Beyond Housing	Community
	13. Implement orchards and community gardens.	City of Pagedale; Beyond Housing	Steering Committee
	14. Provide space for a community marketplace to support local micro-enterprises.	City of Pagedale	Key Informant
	15. Design buildings for mixed use.	Beyond Housing	Research
	16. Recruit full-service banks for the redevelopment.	City of Pagedale; Beyond Housing	Community; Steering Committee; Research
	17. Improve pedestrian and bicyclist connections to existing recreational opportunities.	MoDOT; City of Pagedale	Community; Assessment; Research
	18. Prioritize infrastructure improvement, including comprehensive sidewalks, medians, crosswalks, street lighting, bike lanes, and planting.	MoDOT; City of Pagedale	Community; Assessment; Research
	19. Ensure sidewalk bicycle racks are co-located with retail uses.	City of Pagedale; Developer	Research

Access to Healthy Foods

Access to healthy foods means having access to fresh fruit, fresh vegetables, lean cuts of beef, skinless chicken and low-fat dairy products. Access refers to both physical and financial access. Physical access means healthy foods are available to purchase within close proximity of one's home (usually <1 mile in a dense urban area). Financial access means that individuals or families are able to afford healthy foods.

THE CONNECTION TO HEALTH

A diet rich in fruits and vegetables and low in fat decreases risk of obesity and chronic disease.²⁷ Yet, promoting healthy eating can be challenging because of the many and complex influences on eating behavior across multiple settings. Public health practitioners generally agree that multiple strategies are required to change eating behaviors – including changing environments to make healthy choices easier, enhancing social norms and social support, educating and motivating individuals to take advantage of the opportunities for healthy behaviors, and using policy to reduce prices and barriers to healthy foods.²⁸ Overall, improving access and reducing physical and cost barriers to healthy foods is an important and necessary step for sustaining positive dietary change.

Studies have consistently found that families and children from low-income and minority racial/ethnic communities are less likely to have diets that meet nutrition guidelines.^{29,30} Poorer dietary habits among residents in these communities may be attributed in part to having less access to supermarkets and healthful foods and more availability of fast-food restaurants and energy-dense foods.^{31,32} Moreover, studies focused on small geographic areas have found that food stores in lower-income and racial/ethnic minority neighborhoods are less likely to stock healthy foods, offer lower quality items, and have higher prices compared to stores in higher-income or predominantly white communities.³² Similar results have been observed in the St. Louis metro area.³³ Generally, better access to healthy food has been associated with healthier eating and diet-related diseases.³¹ In addition, there is strong evidence of an association between frequent eating of fast food, excess energy intake, weight gain, overweight, and obesity.³⁴⁻³⁸ However, research findings are currently mixed regarding the relationship between greater availability of fast food and higher individual-level weight status.^{31,39} Cost and transportation are reported barriers to fruit and vegetable consumption in low-income populations.^{34,40}

WHAT WE LEARNED DIRECTLY FROM THE COMMUNITY

Trends in obesity, diet behavior, and food procurement:

In 2007, compared to White adults in St. Louis County, African-American adults were more likely to be obese and to consume less than the five recommended daily servings of fruits and vegetables.⁴¹

Figure 5.

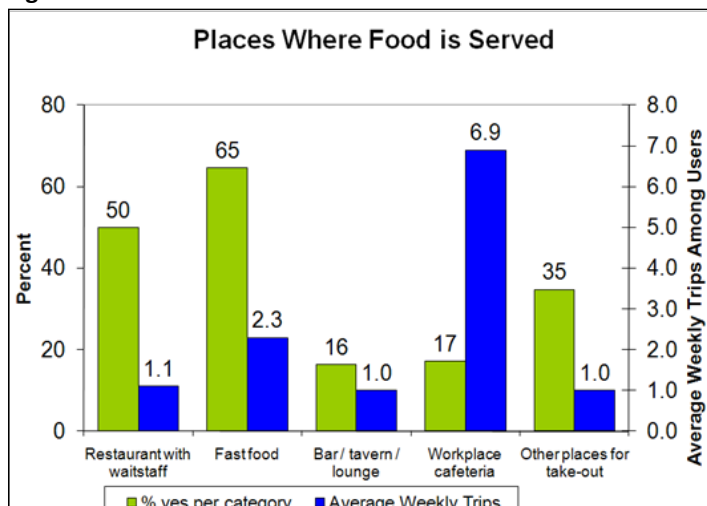
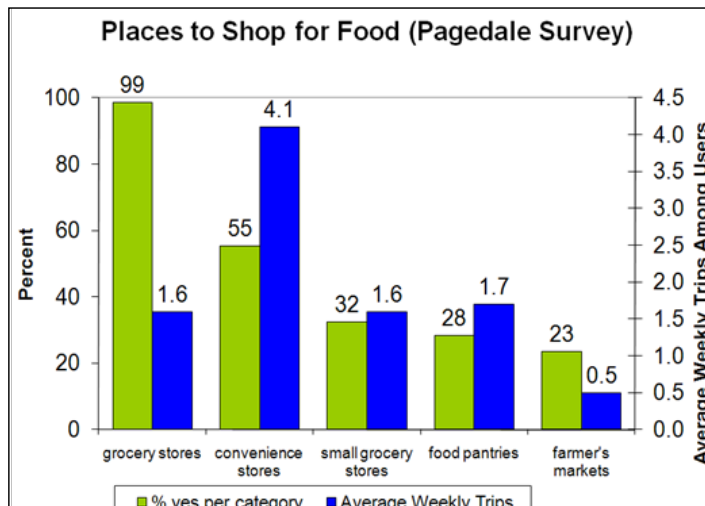


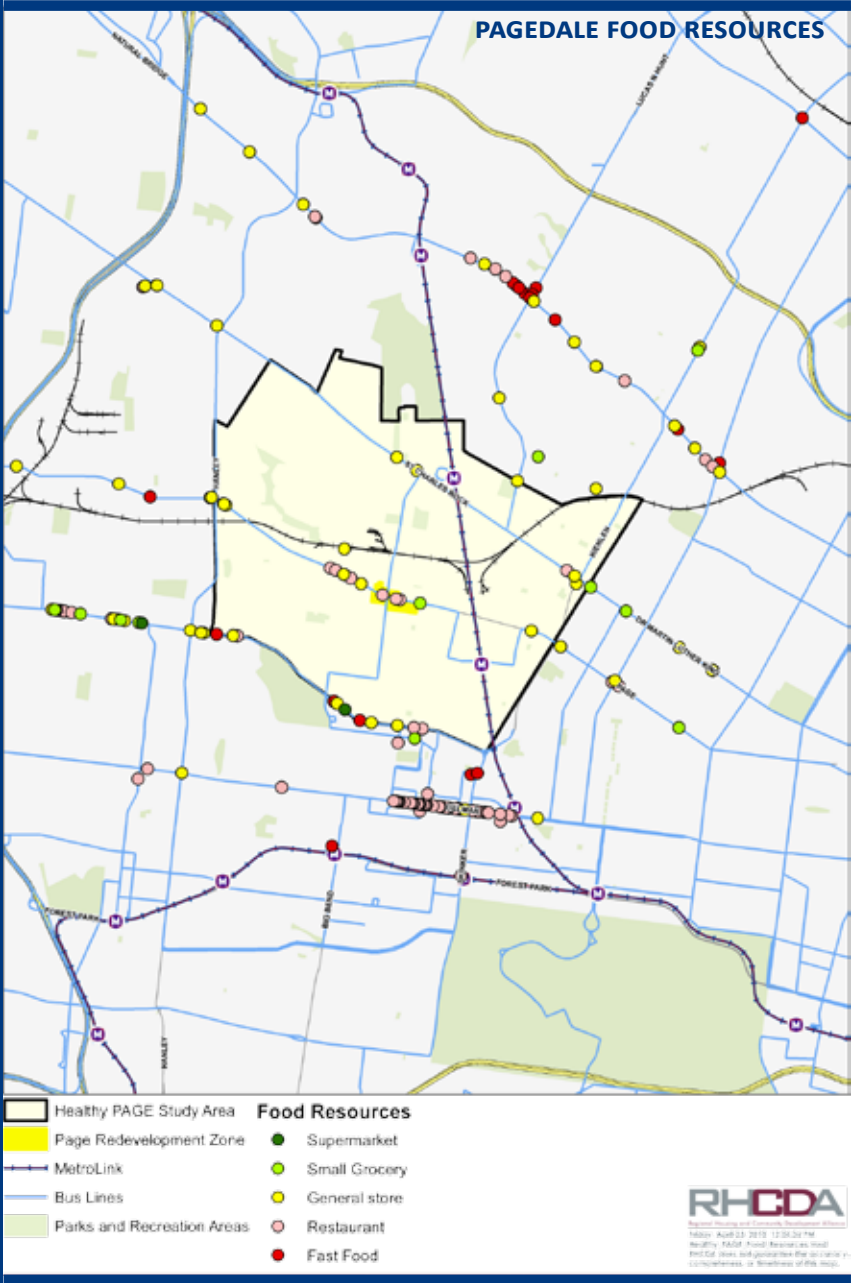
Figure 6.



Findings from the household survey of 155 adults in Pagedale indicated that nearly all respondents (96%) ate fewer than five servings of fruits and vegetables per day, with 67% of adults consuming one or fewer daily servings. Note that the results from the household survey cannot be directly compared to those for St. Louis County due to different methods for assessing fruit and vegetable consumption. The results of the Pagedale household survey also indicated that improving access to grocery stores may not guarantee healthier diets or weight among residents. Nearly all respondents to the household survey (99 percent) shopped at grocery stores on average one to two times per week over the past month. Although convenience stores were visited by a smaller proportion of residents (55 percent), residents who shopped at these stores for food did so frequently (about four times per week on average). Two out of three respondents went to a fast food restaurant in the past month, on average two to three times per week.

Access to health foods in the community:

Lack of places to shop for food is not a significant problem in this community; however some evidence suggests that healthy food options may be limited at the many small grocery and convenience stores in the study area. The map of food stores shows that, as of early 2010, there was one full-service grocery store (Schnucks on Olive Blvd in University City) in the study area, located one mile south from the



redevelopment zone and two miles south from the northern boundary of the study area (Map B, Appendix 2). Notably, 95 of the 155 respondents to the household survey reported shopping at this store at some time in the past month. One to two miles is not a far distance to shop for individuals or families with a vehicle, but this distance may be too far to shop for those without a personal vehicle (approximately 25% according to the Pagedale survey) who must rely on public transportation, walking, or bicycling. For these individuals and families, it may be easiest to shop at small grocery or convenience stores. There were many small grocery or convenience stores identified in the study area, including five small grocery or specialty stores, six gas station convenience stores, and five liquor stores. In-store audits of a sample of small grocery and convenience stores in Pagedale revealed that these stores sell mostly canned fruits and vegetables and no or limited amounts of fresh produce. None sold non-fat/low-fat milk. Pagedale residents who participated in the focus groups concurred with these findings, noting that the food in the Pagedale corner stores is expensive, and there are not healthy options. As for restaurants, maps of area restaurants identified 10 restaurants, either fast food chain or independently-owned restaurants. The majority were located along Page Avenue. Nutritional value was not assessed.

OPPORTUNITIES THE REDEVELOPMENT PRESENTS

The construction of the Save-a-Lot grocery store on Page Avenue in the redevelopment zone is an extremely important step for increasing the proximity to and options for affordable fresh produce, meats, and low-fat milk in the study area. Indeed, focus group and open house participants recognized that the new Save-a-Lot will be an asset to the community. Beyond Housing, City of Pagedale and other decision-makers are to be commended for bringing in this grocery store. Although food costs may remain a barrier to purchasing healthy foods among some lower-income or unemployed residents, Save-a-Lot grocery stores are known to be relatively more affordable than many supermarket chains in St. Louis, so it is anticipated that cost barriers to healthy eating may be minimized.

Unfortunately, increasing availability and affordability of healthy foods does not guarantee that residents will shop at this grocery store or that they will increase their consumption of fruit and vegetables and other healthy foods. Decision-makers should consider capitalizing on the opening of the new grocery store to implement other environmental and policy strategies to facilitate and encourage healthy eating. For one, signs and shelf labels that specify healthy choices at the point of purchase represent additional environmental strategies for promoting healthy eating. Research has demonstrated that such prompts have been moderately well implemented and found feasible in low-income communities.⁴² Although the evidence about the effectiveness of these programs in changing food purchasing behaviors is limited, several studies have found favorable results on knowledge and use of the health information.⁴³ These signs may prove useful at the new Save-a-Lot store. In addition, it will be important to find out whether the store provides lean cuts of beef and skinless chicken and, if not, St. Louis public health practitioners and residents could advocate that these healthy options be made available.

Finally, given the negative impacts of fast food consumption on health, especially among youth and adolescents, a promising policy for limiting access to unhealthy foods would be to limit fast food restaurants from locating in the redevelopment zone given its proximity to places that youth frequent (after-school program, parks, and possibly future youth center). The National Policy and Legal Analysis Network to Prevent Childhood Obesity (NPLAN) has developed a “Model Healthy Food Ordinance” and cites other communities who have been successful in regulating fast food restaurants around schools.⁴⁴ Such an ordinance has not been suggested by Pagedale residents; however, their opinions about such an ordinance were never explicitly sought.

Although not located in the redevelopment zone but within close proximity to it, a new community garden was planted on Griefield Road and a fruit orchard is being planned on Kingsland Avenue. The community garden was made possible by Gateway Greening, a Beyond Housing donor, the City of Pagedale, and resident volunteers. The garden is maintained and harvested by resident volunteers as well as by members of the Pagedale Community Association. Although limited in number, research studies suggest that the placement of accessible community gardens and fruit orchards such as these are promising strategies for increasing fruit and vegetable intake and awareness of healthy eating among some resident



Healthy PAGE Project; bottom Vontriece Valentine

participants and patrons.⁴⁵ Emerging research suggests that community gardens can have positive impacts on community-building, civic engagement, social well-being and physical activity of gardeners.⁴⁶

Focus group participants agreed that community gardens represent another potential means of getting healthy foods. Moreover, community stakeholders who reviewed the alternative design components for the Page Avenue redevelopment responded favorably to using open space for fruit orchards. The success of community gardens will depend on local leadership and resources, volunteers, community partners, and skill-building opportunities for participants.⁴⁵

RECOMMENDATIONS

Strategy	Recommendations	Decision-maker	Source of Recommendation
<i>Policy</i>	20. Adopt land use policies to protect and establish new community gardens.	City of Pagedale	Key Informant
	21. Adopt a Healthy Food Zone ordinance to limit new fast food restaurant chains from locating within a certain distance of schools, parks, child care centers, and other locations children frequent.	City of Pagedale	Research
	22. Serve healthy foods at community events and meetings.	City of Pagedale; Beyond Housing	Research
	23. Supplement food pantries with fresh produce.	Beyond Housing; other food pantries	Research
<i>Design</i>	24. Implement orchards and community gardens.	City of Pagedale; Beyond Housing	Steering Committee
<i>Program</i>	25. Consider cooking and nutrition classes for residents.	Beyond Housing; social service agencies	Research
<i>Education</i>	26. Post signs and displays to encourage customers to purchase healthy food products in stores.	Save-A-Lot	Research

Pedestrian Safety

A healthy community has high levels of pedestrian safety. A pedestrian is any person on foot or traveling in a wheelchair or mobility device to assist with a disability.

THE CONNECTION TO HEALTH

Improvements in pedestrian infrastructure improve opportunities for physical activity and facilitate access to goods and services. A long term study funded by the National Institutes of Health found that people living in highly walkable neighborhoods averaged 35 to 45 minutes more physical activity per week than their counterparts in less walkable areas.⁴⁷ Highly walkable neighborhoods have an interconnected street and sidewalk network and a compactly developed mix of commercial and residential land uses. Active transportation, which includes walking and bicycling, is critical to increasing levels of healthy exercise and reducing obesity, some cancers, heart disease, diabetes, and other diseases.⁴⁸

Adequate pedestrian infrastructure such as sidewalks and crosswalks could decrease or eliminate the number of pedestrian deaths occurring along Page Avenue, on average, one or two a year, which in scale to the population is very high. Young children and the elderly are the most vulnerable for pedestrian accident related injuries. Based on population, children under the age of 16 years are most likely to be struck by motor vehicles.⁴⁹ However, the elderly are most likely to be fatally injured when struck.⁵⁰ A pedestrian has an 85 percent chance of death when involved in a motor/vehicle collision at 40 mph, a 45 percent chance of death at 30 mph, and a five percent chance of death at 20 mph.⁵¹ Encouraging slower and more careful driving through a street redesign and encouraging pedestrian activity can both decrease the number of accidents and when there are accidents, the number of fatalities. The more pedestrians that regularly inhabit a transportation corridor, the more drivers expect to see pedestrians.

An auto-oriented transportation network where using transit, walking or bicycling is unsafe marginalizes those that do not drive - youth under 16, disabled persons, the elderly and low-income households.⁵² A recent AARP poll of adults 50 years and older found that 40 percent reported inadequate sidewalks in their neighborhoods and half of respondents reported that they could not safely cross the main roads close to their home.⁵³

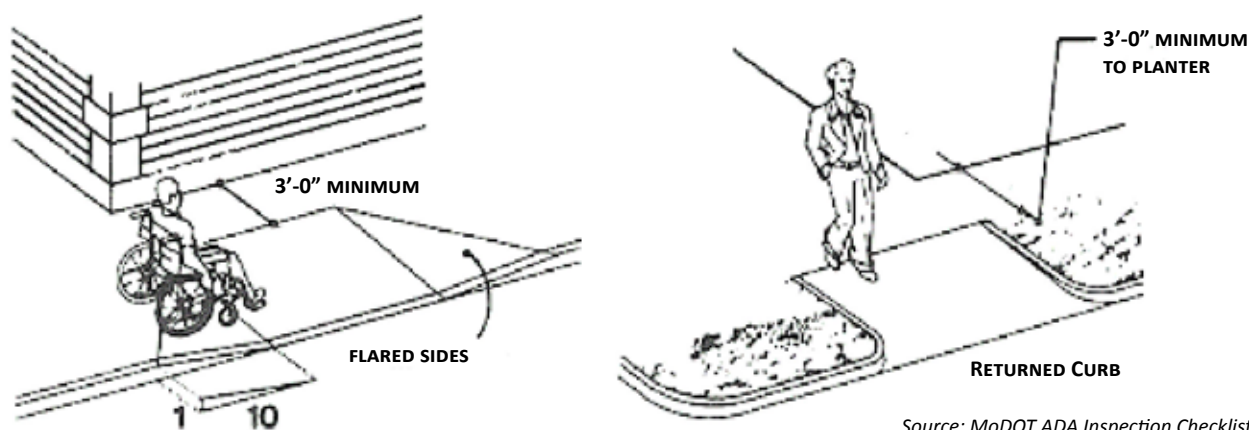
WHAT WE LEARNED DIRECTLY FROM THE COMMUNITY

Demographic data from the 2007 American Community Survey indicates that the Pagedale Study Area has higher populations of both youth (under 24) and the elderly (over 65) than surrounding communities and the county as a whole. As well, a quarter of the study area population had yearly incomes below \$15,000. All of these populations are less likely to own or drive cars and more likely to rely on pedestrian infrastructure. From the 2009 household survey we learned that 27 percent of participants did not own a car, and 40 percent of residents reported walking on neighborhood streets and sidewalks for either transportation or exercise in the past 30 days. These residents reported going on six to seven trips per week as pedestrians. According to the household survey, residents noted infrastructure improvements to be the most noticeable



Healthy PAGE Project

Figure 7. ADA-Compliant standards



Source: MoDOT ADA Inspection Checklist

community improvement in the past five years. Residents mentioned improvements, such as street paving and lighting, three times as often as the next frequently reported issue. These improvements are some of the most visible and are seen as high-value to the community. Continued infrastructure improvements and maintenance were one of the most desired improvements for the next five years, with specific requests for work on Engelholm Creek, sidewalks, and curbs.

Across the focus groups, water runoff from Page Avenue and street lighting were identified as infrastructure challenges. The participants discussed the new street lighting on Page Avenue. They noted that the “beautiful street lights” should be extended further down Page. Sufficient lighting, storm water maintenance, sidewalks, and curbs are all important to pedestrian safety. The City of Pagedale currently has informal walking groups. Walking clubs are associated with increased levels of walking among targeted participants by up to 30-60 minutes a week.⁵⁴ Future walking clubs could also be politically organized to advocate for pedestrian safety issues to increase the likelihood that infrastructure improvements are implemented.⁵⁵ The 2009 street audit measured a number of qualities that have to do with pedestrian safety, such as sidewalk presence and pedestrian amenities. There are significant portions of Page Avenue, Kingsland Avenue, and St. Charles Rock Road with no sidewalks or poor sidewalks. There are highly inconsistent qualities of sidewalks that vary not only by block, but by lot, suggesting that sidewalk creation and maintenance is the present responsibility of the individual homeowner or business owner. Results from the sidewalk audit are displayed in Maps E, F, and G (Appendix 2). There was high street-to-sidewalk accessibility for wheelchairs. However, it was not because of the presence of curb cuts, but simply a lack of curb to begin with. There are no crosswalks, pedestrian signals, or medians for assistance in crossing Page Avenue, a 5 lane highway. Poorly placed utility poles frequently block pedestrian pathways. The speed limit on Page Avenue and St. Charles Rock Road is 35 mph but the wide lanes and low traffic promote much faster travel. There is no street parking on Page Avenue, and a very small shoulder. The bus stop inventory (Appendix 3) went further into detail regarding transit accessibility by measuring sidewalk presence and quality, shelter or shade, and seating conditions.

OPPORTUNITIES THE REDEVELOPMENT PRESENTS

The City of Pagedale and the developer need to reprioritize infrastructure improvements, especially since the grocery store will bring more car and foot traffic. Over the course of the redevelopment of Page Avenue is an ideal time to address pedestrian infrastructure deficiencies. To ensure street and sidewalk quality and continuity, the City of Pagedale should also adopt street and sidewalk construction standards such as Complete Street policies. The City of St. Louis adopted Complete Street policies in June 2010 and the State of Missouri currently has legislation under consideration. Complete Streets policies

ensure that future road projects and their transportation planners and engineers consistently take into account the needs of all users, of all ages and abilities, particularly pedestrians and bicyclists. Both the American Academy of Pediatrics and the Centers for Disease Control and Prevention recently endorsed the adoption of local and statewide Complete Streets policies as a strategy for improving safety and increasing physical activity among children and adults.⁵⁶

The redevelopment could implement street changes that would encourage drivers to drive at or below the speed limit. The City receives \$67,000 a year in Community Development Block Grant funds that are often used for individual rehabs and helping homeowners make down payments.⁵⁷ While a small sum, these funds could make an impact through street and sidewalk improvements. Traffic slowing measures include street parking, medians, narrower lanes and well-marked pedestrian crossings and can reduce crashes by 20-70 percent.^{58,59} We recommend that Page Avenue be given a “road diet.”

Road diets turn a five-lane road with a modest traffic levels into a two-lane road with a middle turning lane, two bicycle lanes, and on-street parking or wider sidewalks. Since they reduce the number of travel lanes, and remove turning vehicles from the flow of traffic, road diets can significantly reduce both pedestrian and motorist collisions. Peer-reviewed studies have found that road diets reduce collisions by an average of 29 percent.⁶⁰

High-need, high-traffic bus stops should receive high-priority status in becoming ADA compliant, with level and continuous sidewalks. Adding trees and other vegetation to sidewalks would not only improve the appearance of Page Avenue, but would also provide shade and better manage storm water runoff. We recommend low upkeep plantings to serve the small budget and size of Pagedale’s Public Works department. Street trees could be placed using MoDOT guidelines to optimize driver visibility and pedestrian comfort.⁶¹ Improving pedestrian infrastructure could also improve the capability of the TIF District to attract investment in the form of businesses and residents. One new study correlated property values to the 100-point scale used by Walk Score (www.walkscore.com). The results showed that a 10 point increase in walkability increases property values by five to eight percent, depending on property type.⁶² Commercial development can increase the perceived walkability of their stores by locating buildings and entrances close to sidewalks.

RECOMMENDATIONS

Strategy	Recommendations	Decision Makers	Source of Recommendation
Policy	27. Invest Community Development Block Grant funds (\$67,000/year) into pedestrian amenities	City of Pagedale	Key Informant
	28. Transition bus stops near TIF District to ADA standards on an accelerated schedule.	MoDOT; Metro	Assessment
Design	29. Prioritize infrastructure improvement, including comprehensive sidewalks, medians, crosswalks, street lighting, bike lanes, and street plantings.	City of Pagedale; MoDOT	Assessment Research; Community
	30. Maximize pedestrian and transit access to the site from adjacent land uses.	Developer	Research
	31. Ensure that fencing and landscaping does not create barriers to pedestrian mobility.	Developer	Research
Program	32. Organize community walking clubs that also acts as advocates for pedestrian infrastructure improvements.	Residents	Research

A safe community is one in which the crime levels are low and the perception of safety is high. Residents feel adequately protected by the police, safe indoors and outdoors both day and night, and feel that their children are safe at or moving to and from school, play and other activities. Community safety and community identity are closely bound by a sense of social cohesion and trust between neighbors.

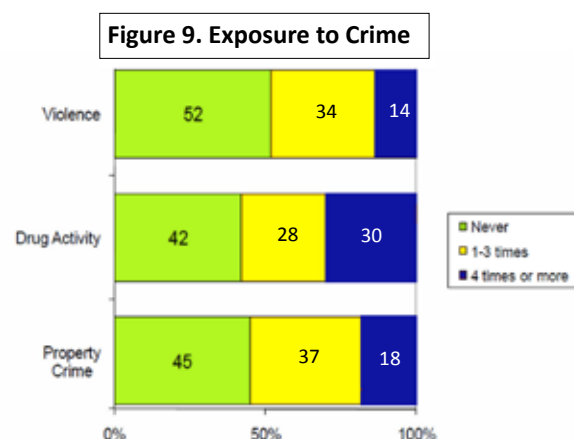
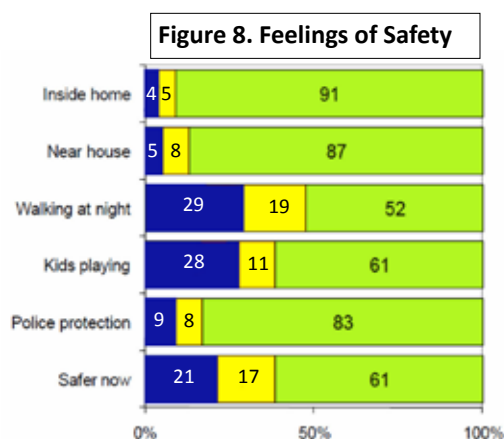
THE CONNECTION TO HEALTH

The incidence and fear of crime are associated with poor health outcomes for community residents. Witnessing and experiencing community violence for example, has been associated with long term behavioral and emotional problems in youth⁶³ and increased levels of fear of crime and victimization generally.⁶⁴ In turn, the fear of crime produces stress, anxiety, and poor mental health.⁶⁵ Adverse health outcomes associated with chronic stress include diabetes, heart disease and ulcers. The fear of crime also poorly impacts physical health through reduced outdoor physical activity and exercise and in part explains the association between high crime areas and obesity and other negative health outcomes.⁶⁶ Studies have also found that the fear of crime increases mistrust of neighbors, thereby reducing social cohesion.⁶⁴

Community studies on variations in the level and perception of crime consistently indicate lower levels where informal social control and cohesion - referred to as collective efficacy - are higher.⁶⁷ Higher levels of collective efficacy are also associated with the reduced incidence of negative health outcomes including obesity and other outcomes.⁶⁶ To increase social cohesion therefore it is important (1) to enhance the perception of order and provide evidence of Pagedale as an organized developing city and to (2) create opportunities for interaction among residents that build trust and facilitate the identification of and commitment to the pursuit of shared values. As such, strategies aimed at building social cohesion as a precursor to informal social control and improving surveillance as a means of improving the perception of safety, are expected to improve health outcomes by reducing both the incidence and fear of crime.

WHAT WE LEARNED DIRECTLY FROM THE COMMUNITY

The 2009 Pagedale household survey indicated that the majority of respondents (52 percent) had not seen or heard about any violent activities in the community, but as shown in figure 12, 58 percent and 55 percent respectively had seen or heard about drug-related activity and property crime. Also, as seen in figure 11, while the vast majority of residents felt safe inside their homes (91 percent), considerably fewer felt their children were safe playing in the neighborhood (61 percent) or felt safe walking in the neighborhood at night (52 percent). In the focus group discussions, residents also expressed concern about their safety while walking or using public transportation at night. Subjective rating of crime and fear of crime is a stronger predictor of behavior (such as not exercising outside) than actual crime rates.⁶⁸



Community Safety Continued

Lower income communities tend to experience higher levels of crime and lower levels of safety. Data from the Missouri State Highway Patrol indicates that the respective rates of violent and property crime in the City of Pagedale, were 1 per 100 and 5 per 100 residents in 2009. This was three times the rate for violent crime and twice the rate for property crime in St. Louis County. Yet Pagedale has seen considerable decreases in both violent and property crime over the past decade including reductions in aggravated assault (-76 percent), robberies (-44 percent), larceny (-42 percent) and motor vehicle theft (-46 percent).

Issues relevant to policing, crime and safety were identified as important community concerns survey respondents wanted to see addressed. Improving policing was the third highest priority concern to residents in the survey, although the focus groups reported better police patrols and improved relations with the police. Survey respondents were concerned that crimes such as break-ins, drug use/dealing and gangs needed to be addressed. On the issue of safety, focus group participants indicated their perception of crime adversely affected their engagement in physical activity and created fear of traveling at night. To enhance safety, residents recommended improved police patrols, improved lighting and establishing a neighborhood watch.

OPPORTUNITIES THE REDEVELOPMENT PRESENTS

The redevelopment presents the opportunity to remedy environmental conditions that support crime or fear of crime, such as poor street lighting, and to facilitate social cohesion and interaction among residents through its design features. Increased cohesion and trust among residents inspires participation in informal social control, like watching each others' property or reporting the presence of persons acting suspiciously. This is highly associated with increased perception of safety.^{69,70} Studies in environmental criminology also indicated that having an optimum number of users on the street and at varying times throughout the day increases surveillance and is associated with lower levels of crime.^{71,72,70} The grocery store, commercial, and residential spaces, community gardens and orchards, and a streetscape redesigned to entertain and attract residents will increase the number of pedestrians on the streets which will increase the natural surveillance of the area.^{69,70}

Notably however the relationship between segregated housing complexes and concentration effects are less strongly supported in the literature as there is greater evidence to support such effects in the context of whole communities rather than in complexes.⁷³ Effective management, high levels of maintenance, and safety, along with deliberate strategies to promote integration among residents of mixed-income housing complexes are of importance.⁷⁴ These will help attract and sustain the income balance desired within the new housing areas and contribute to community safety.

Areas that cluster pay day loan shops, bars and game arcades are more likely to have a higher incidence of crime as these (i) create the opportunity for the coexistence in time and space of motivated offenders and suitable targets for crime, and (ii) tend to attract idle unsupervised youth.^{71,69,70}

RECOMMENDATIONS

Strategy	Recommendations	Decision-maker	Source of Recommendation
<i>Policy</i>	33. Require durable, vandal-resistant materials so maintenance is minimal.	Beyond Housing; Developers	Research
	34. Recruit businesses that are open at different times of day.	City of Pagedale; Beyond Housing	Research
<i>Design</i>	35. Provide adequate and pedestrian-scaled lighting for all public areas, residential streets, and adjacent public streets.	City of Pagedale	Research
	36. Maximize visibility, especially for high risk areas such as parking garages, stairwells, and underpasses.	City of Pagedale; Beyond Housing; developers	Research
	37. Provide programmed spaces for a diversity of age groups, i.e. playground for young children, basketball court for older youth, chess for older residents.	City of Pagedale; Beyond Housing	Steering Committee; Research
	38. Integrate public art and performance spaces.	City of Pagedale; Developer	Research

Community Identity

Community identity, also known as social cohesion, is the outcome of interconnected psychological, social and environmental processes in relation to a physical place,⁷⁵ and is determined by the attachment or detachment to one's physical and social community.⁷⁶ Aspects of community identity which can impact human health include:

- social networks (material and emotional support),
- social participation (meaningful participation in relationships),
- community engagement (participation in activities which benefit one's social and physical community)
- political engagement (involvement in the democratic process and a feeling of empowerment)⁷⁷
- place attachment (space, infrastructure, buildings, or landmarks which reinforce individual and collective identity and associations with a place).

THE CONNECTION TO HEALTH

There is growing evidence linking community identity to health concluding that strong community identity contributes to community-level pathways and processes that positively impact individual health.⁷⁸ An individual's identification with a physical and social community can invoke feelings of inclusion and connection and lead to better physical and emotional health; while a sense of isolation can induce loneliness and depression and can negatively impact health.⁷⁹ Furthermore, perceptions of one's physical environment have been shown to have a direct correlation to the birth weight of babies; lower for those whose mothers have negative perceptions of their physical environment and higher for those whose mother have positive perceptions.⁸⁰ It has also been shown that positive attitudes of outsiders about a place can lead to positive attitudes of the residents about themselves and result in better lifestyle choices and consequently, better health.⁸¹ In addition, a prospective study showed that even after accounting for income, race, smoking, obesity, and exercise, individuals with fewer social contacts had twice the risk of early death.⁸² In a more recent study, living in high-density Mexican-American neighborhoods with strong community and place identity, reduced the risk of stroke, cancer, and hip fracture by two-thirds for older Mexican immigrants.⁸³

WHAT WE LEARNED DIRECTLY FROM THE COMMUNITY

When survey respondents were asked to identify concerns they would like to see addressed in the community, one-fifth of all responses were related to community identity issues. These responses, as a group, express the desire for a type of community identity that includes responsible and cohesive neighbor relations, nurturing and building productive youth, and caring for the elderly.

Social Networks and Social Participation

The 2009 household survey measured the sense of social cohesion in the community by asking each respondent if they could count on their neighbors in different scenarios. In each of the five different situations presented, two thirds or more of residents agreed with positive statements about being able to count on their neighbors. Disagreement ranged from the 10% of residents who indicated they could not count on their neighbors to help the elderly, to 26% who couldn't trust them to do anything about litter. No differences by ward were observed. In the focus groups, participants identified the small size of the community as a strength, noting "what I love about Pagedale is the fact that we're small enough to know everybody if you want to know everybody."

Community and Political Engagement

In the 2009 household survey, a majority of residents reported assisting their neighbors in the past year (55 percent), and a significant proportions participated in community life by volunteering (25 percent), attending community events or meetings (22-28 percent), promoting programs or services (32 percent), or being involved in a political campaign (20 percent).

A smaller proportions had either helped conduct or organize a fundraiser (14 percent) or get community programs off the ground (5 percent). Older residents were more likely to vote and attend community meetings, and men were more likely than women to be involved in political campaigns, rallies, or the creation and implementation of community programs. Respondents reported attending an average of 5 events a year (mean), with more events attended correlating with the age of the resident. Across the three wards, Ward 2 respondents averaged the lowest amount of events attended yearly (3.3) compared to Ward 1 (5.4) and Ward 3 (5.2).

Although not pervasive throughout the focus groups, a few participants discussed a need for increased leadership in Pagedale. The participants discussed that residents do not always understand how organized, grassroots leadership may help the city keep needed resources (e.g., local businesses). One participant attributed this to a lack of political education and passing of information from one generation to the next:

“I think a lot of that has to do with, again, lack of political activism, political education. What tends to happen is when the older generation, who may have obtained certain things, because the information and education isn’t passed down to the next generation, there’s a break and whatever was achieved is no longer being achieved because the next generation is not active.”

Physical Environment

The built environment of Pagedale is fragmented by two major roads (Page Avenue and Saint Charles Rock Road), and by a major industrial zone which bisects the area. Large cemeteries buffer Pagedale from neighboring municipalities. Because there are very few amenities or places of gathering offered in the vicinity, residents must leave the area for shopping, dining out, exercise, and entertainment. Many residential streets dead-end or circle back on themselves, leading to poor vehicular or pedestrian connectivity. A street audit of the area reported significant signs of disinvestment, such as vacant and boarded up buildings, poor or non existent sidewalks, litter, and vacant lots. However, survey and focus group participants feel positively about community improvements such as new housing, home repairs, and the construction of a new grocery store.



Community Identity Continued

OPPORTUNITIES THE REDEVELOPMENT PRESENTS

The proposed redevelopment plan for Page Avenue offers many opportunities to strengthen social bonds and create a positive community identity for the study area. A public planning process offers residents the opportunity to participate in decisions that affect their life and to engage in a political process. The plan represents committed investment in the area and will reverse physical indicators of disinvestment and crime (closed businesses, boarded up and dilapidated buildings, broken sidewalks, etc). Distinct and memorable design will assist in creating a new visual identity for the area.

Since the redevelopment is phased, it is important to consider interim uses for empty parcels that could be eyesores as much as the poorly maintained buildings that exist there currently. There is the opportunity to plant orchards, gardens, and create public space in empty parcels to enhance the character of the street. The plan provides public places of gathering such as retail shops and open spaces, both of which will provide greater opportunities for residents to socialize and lessen the need to leave the community.

Designing for smaller community green spaces that are associated with specific activities (pocket park, sports area, dog park, playground, orchards, gardens), rather than larger public parks as is planned, would assist in fostering social networks.⁸⁴ Specifically programmed places would also attract a variety of social groups, from seniors to older youth, both of whom lack social opportunities within the community.

Drawing from the current Fruit Hill Initiative, the redevelopment could adopt a positive identity associated with the orchards and urban agriculture. Developing a marketing plan and signage for the redevelopment that reinforces this identity could serve as a tool for attracting investment and businesses.

A comprehensive infrastructure plan could be implemented to better link neighborhoods to each other and to existing high-value infrastructure such as the MetroLink and St. Vincent Greenway.

The proposed housing included in the plan together with the existing supportive services of Beyond Housing will help to decrease resident turnover and stabilize the resident population. Mixing income levels and sizes of rental and for-sale units more than is currently planned has been shown to increase positive outcomes for social cohesion and decrease economic isolation.⁸⁵ The senior housing and associated services included in the proposed plan will address the current lack of housing, resources and social opportunities for seniors.

“What I love about Pagedale is the fact that we’re small enough to know everybody if you want to know everybody.”

RECOMMENDATIONS

Strategy	Recommendations	Decision-maker	Source of Recommendation
<i>Policy</i>	39. Incentivize locally-owned business development.	City of Pagedale	Research
	40. Develop branded identity and marketing materials for potential investors in the community, i.e. Fruit Hill, "Growing Pagedale Together."	City of Pagedale	Key Informant; Steering Committee
	41. Adopt public planning policy to encourage greater community involvement.	City of Pagedale 24:1 Initiative	Research; Key Informant
	42. Utilize existing websites as information-sharing venues for area residents regarding local news.	City of Pagedale; Beyond Housing	Key Informant
<i>Design</i>	43. Demolish vacant buildings on Page Ave. slated for new construction and develop interim infill orchards to promote identity, and encourage future investment.	City of Pagedale; Beyond Housing; St. Louis County	Research; Steering Committee
	44. Integrate affordable and market-rate housing, minimizing difference between nature and quality of units.	Beyond Housing	Research; Steering Committee
	45. Provide programmed spaces for a diversity of age groups, e.g. playground for young children, basketball court for older youth, chess for older residents.	City of Pagedale; Beyond Housing	Research; Steering Committee
	46. Implement orchards and community gardens.	City of Pagedale; Beyond Housing	Steering Committee
	47. Provide space for a community marketplace to support local microenterprises.	City of Pagedale; UMSL Extension	Key Informant

Housing

Healthy housing units are affordable, physically safe, and in good repair. They are constructed with materials of low toxicity and with adequate ventilation and heating systems. At the neighborhood level, healthy housing includes a diversity of types that serve the needs of different populations (ex. seniors, families, young adults) with neighboring houses that are occupied and well-maintained. Affordable housing is not segregated from market-rate housing.

THE CONNECTION TO HEALTH

Poor housing conditions can have a negative impact on health in the following ways: lead poisoning from lead-based paint, asthma from mold, roaches, and other triggers, cancer from radon and pesticide exposure, and unintentional injuries from falls, fires, and carbon monoxide poisonings.⁸⁶ As well, poor lighting is associated with increased stress and depression, both of which have been linked to increases in asthma.⁸⁷

Older housing stock often lacks adequate ventilation. Inadequate heating or ventilation leads to dampness and mold growth.⁸⁸ As for new housing, construction techniques have advanced so that houses are better sealed than ever before. However, this means that materials used inside the home that off-gas will affect indoor air quality even more. In fact, U.S. Environmental Protection Agency (EPA) studies show that levels of air pollution inside the average home are often two to five times higher than outdoor levels.⁸⁹ Inadequate ventilation, in this case, not bringing in enough outside air, allows for the concentration of Volatile Organic Compounds (VOCs), which has various health effects including 'sick building syndrome,' asthma, and at higher levels, cancer.⁹⁰



The associations between temperature variability and health are numerous and include direct increases in cardiovascular disease, arthritis and poor sleep. Research has found that adverse health effects from noise show themselves differently among age groups. The elderly have an increased risk of stroke. Adults can experience depression, and respiratory and cardiovascular damage, while children experience respiratory irritation.⁹¹

Unaffordable housing requires families to make trade-offs between rent and other basic necessities, such as food or medical care.⁹² This leads to food insecurity, malnutrition, and missed preventative medical care, all of which have lasting effects on children's health and development. Housing is an object of attachment and a source of identity and also has a significant relationship to psychological well-being.⁹³ Homelessness and housing instability have an adverse impact on the physical, mental and developmental well-being of children.⁹⁴

WHAT WE LEARNED DIRECTLY FROM THE COMMUNITY

Approximately even proportions of respondents (40-41%) own or rent their homes, while the remainder has other housing arrangements. Older residents and those without children at home were more likely to own their homes. Twenty-six percent of participants lived alone, while 28

percent lived with one other person. In the Pagedale study area, between the 1990 and 2000 Census household size decreased.

The needs identified during the 2009 household survey regarding housing were primarily focused on improving existing housing stock. Participants desired replacement of siding, painting, and tuck pointing improvements, as well as general aesthetic improvements of the housing stock. There was the desire to either increase occupancy or to accelerate demolition of vacant houses. Participants expressed a concern regarding a lack of diversity among housing types, specifically mentioning Section 8 eligible housing. Pagedale is dominated by a single typology: the single family two-bedroom bungalow. The city currently lacks lower-maintenance options such as apartments and townhouses.

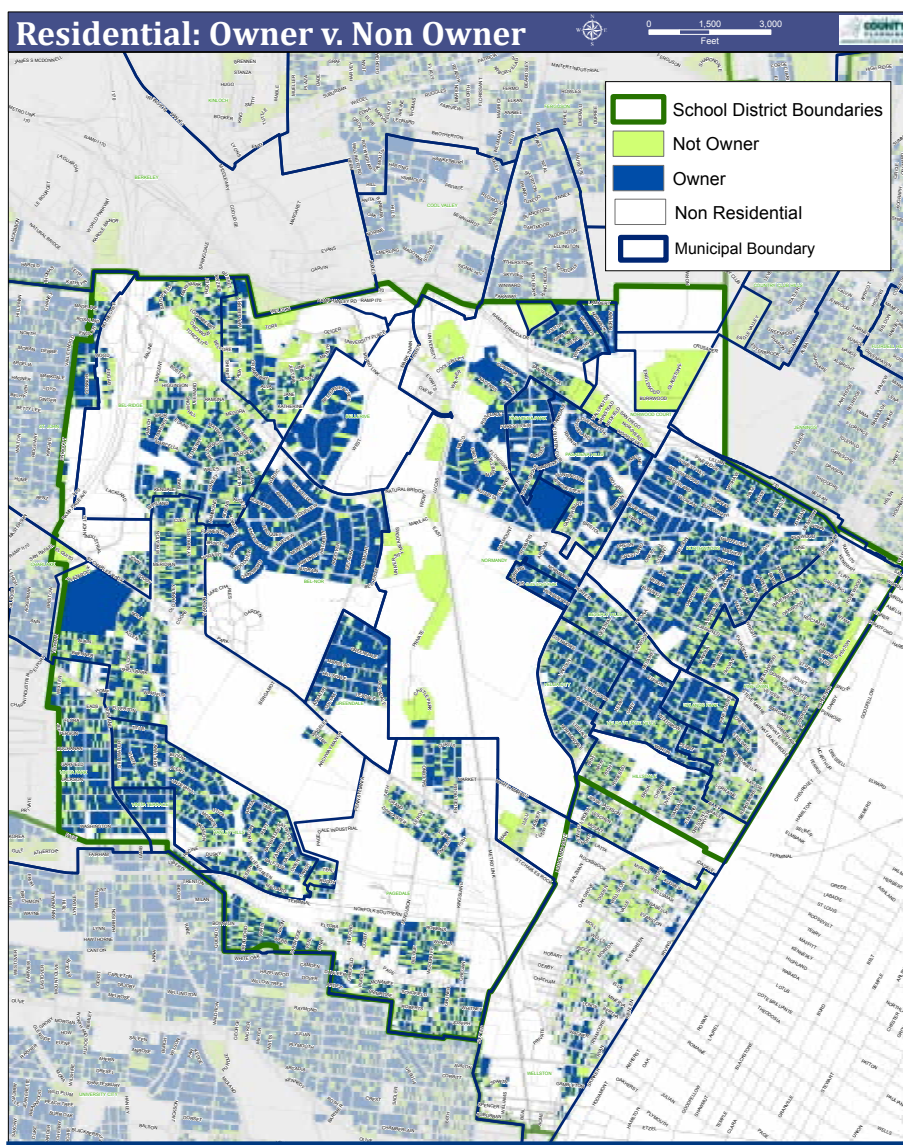
The household survey indicated that housing improvements were the third most noticed community improvement over the past five years by residents. Improvement mentioned were the new homes built by Beyond Housing, home repairs, and old houses were torn down. The City of Pagedale began a partnership with Beyond Housing in 2000 for investments in community development with housing as the main catalyst. Beyond Housing constructed/rehabbed 92 houses, and saw another 162 families benefit from repair assistance.

The sidewalk audit that took place in the fall of 2009 measured indicators of physical disorder as well as sidewalk conditions. Of the 64 blocks of Pagedale that were surveyed, 20 percent had one or more abandoned homes. These homes were determined to be abandoned by visual indicators such as unkept yards, boarded up windows, broken windows, and/or notice stickers on the front door.

OPPORTUNITIES THE REDEVELOPMENT PRESENTS

The redevelopment will increase the number of home-owners in the community and renters that are supported with social services via Beyond Housing. Home-ownership has been associated with increases in “stakeholder mentality,” when residents exhibit behaviors that promote personal stability and commitments to family, their property, and the community that they reside in.⁹⁵ Homeowners have been found to be more likely than renters or landlords to maintain and repair housing.⁹⁶

There is the opportunity to build housing types that are not currently available in this community, such as apartment style housing and townhouses. There is the opportunity to fulfill more of the area’s need for affordable senior housing.⁹⁷



Housing Continued

Instead of private yards, these types of housing would be more reliant on communally maintained public spaces, which could increase levels of social interaction among residents.

The redevelopment offers both market-rate and affordable housing that could be appropriate for families and senior citizens. However, the current plan separates the market-rate housing from the affordable, which may produce a visible disparity in the quality of construction and/or maintenance. There exists an opportunity to build a mixed-income development to ensure high-quality housing and deconcentrate poverty.⁹⁸

The replacement of older housing present along Page Avenue could improve general health since they tend to have higher maintenance requirements: from leaky roofs, which can cause mold, to inadequate electrical systems, which can cause fires. As well, older housing may have unsafe design, such as missing handrails or uneven steps, which can cause accidental injury from falls.

The design and management of the individual units has not yet been specified. Healthy design practices that could be implemented that demonstrably improve health are all related to indoor air quality. They include avoiding the use of carpeting, avoiding the use of construction materials composed with formaldehyde, and constructing sealed garages (if attached to living space).⁹⁹ Carpeting harbors dust mites and there is a causal association between exposure to dust mite allergens and the development of asthma in children.¹⁰⁰ Particle board and plywood adhesives are made with formaldehyde, which off-gasses VOCs. Use should be avoided until coatings have been shown to be effective in preventing off-gassing.¹⁰¹ Nearly all indoor exposure to VOCs comes from attached garages; sealing garages reduces the risk of asthma.¹⁰² Installation of Energy Recovery Ventilators would allow for the controlled intake of outside air. For a more comprehensive guide to improving air quality in new construction, in January 2009 the Environmental Protection Agency (EPA) published Indoor airPLUS construction specifications developed from scientific evidence, stakeholder input, and practical considerations.¹⁰³

The redevelopment will increase the property values of existing homes surrounding the TIF District. This increase in property value is realized by the homeowner only if they choose to sell and may potentially lead to some existing residents getting priced out. The new market-rate housing units may result in an in-migration of wealthier residents, positively contributing to area economic integration and markets for retail services. Beyond the six homeowners who were compensated to move from their lots that the grocery store occupies, there is an unknown number of residents in at least 20 residential units that will need to be compensated and/or located elsewhere within the TIF District. There is estimated to be at least eight apartment units above businesses, one duplex, and ten single-family dwellings remaining within the TIF District.

RECOMMENDATIONS

Strategy	Recommendations	Decision-maker	Source of Recommendation
Design	48. Integrate affordable and market-rate housing to minimize differences between units.	Beyond Housing	Steering Committee; Research
	49. Promote healthy air quality and noise levels within housing units through proper ventilation and noise control design measures that reduce exposure from highway traffic.	City of Pagedale: Developer	Steering Committee; Research
	50. Select building materials and ventilation systems for housing units to reduce allergies and toxic exposures.	Developer	Research
	51. Build housing units to EPA’s Indoor airPLUS construction specifications.	Developer	Research

