

# APPENDIX A





Sign In | Your Account



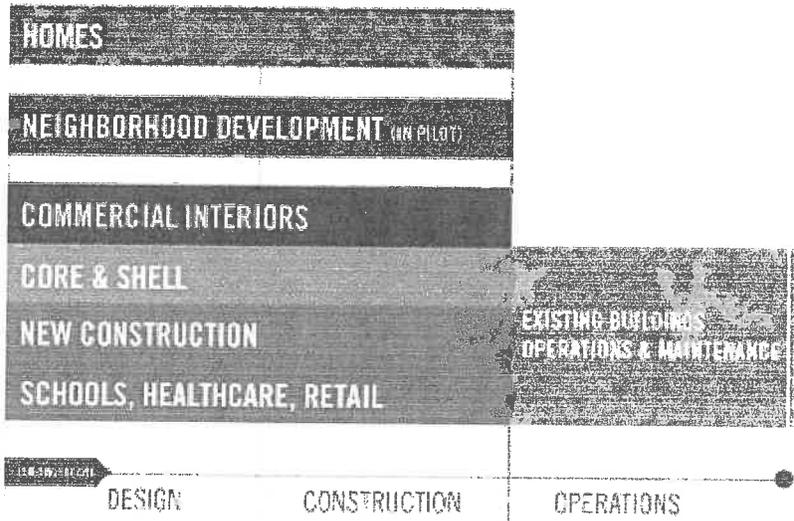
**U.S. GREEN BUILDING COUNCIL**

LEED Education Search Resources News & Events Committees Chapters Member

# LEED Rating Systems

## What is LEED®?

The Leadership in Energy and Environmental Design (LEED) Green Building Rating System™ encourages and accelerates global adoption of sustainable green building and development practices through the creation and implementation of universally understood and accepted tools and performance criteria.



LEED is a third-party certification program and the nationally accepted benchmark for the design, construction and operation of high performance green buildings. LEED gives building owners and operators the tools they need to have an immediate and measurable impact on their buildings' performance. LEED promotes a whole-building approach to sustainability by recognizing performance in five key areas of human and environmental health: sustainable site development, water savings, energy efficiency, materials selection and indoor environmental quality.

## Who uses LEED?

Architects, real estate professionals, facility managers, engineers, interior designers, landscape architects, construction managers, lenders and government officials all use LEED to help transform the built environment to sustainability. State and local governments across the country are

## LEED Rating Systems

**New Construction**  
LEED for New Construction and distinguish high-performan

**Existing Buildings: Oper**  
LEED for Existing Buildings: O benchmark for building owners improvements and maintenanc

**Commercial Interiors**  
LEED for Commercial Interiors improvement market that gives tenants and designers.

**Core & Shell**  
LEED for Core & Shell aids det building owners in implementin shell construction.

**Schools**  
LEED for Schools recognizes tl construction of K-12 schools ar spaces.

**Retail**  
LEED for Retail recognizes the construction projects and addr

**Healthcare**  
LEED for Healthcare promotes construction for high-performar

**Homes**  
LEED for Homes promotes the performance green homes.

**Neighborhood Developpr**  
LEED for Neighborhood Develk growth, urbanism and green bu

adopting LEED for public-owned and public-funded buildings; there are LEED initiatives in federal agencies, including the Departments of Defense, Agriculture, Energy, and State; and LEED projects are in progress in 41 different countries, including Canada, Brazil, Mexico and India.

## How is LEED Developed?

LEED Rating Systems are developed through an open, consensus-based process led by LEED committees. Each volunteer committee is composed of a diverse group of practitioners and experts representing a cross-section of the building and construction industry. The key elements of USGBC's consensus process include a balanced and transparent committee structure, technical advisory groups that ensure scientific consistency and rigor, opportunities for stakeholder comment and review, member ballot of new rating systems, and a fair and open appeals process.



[About USGBC](#) | [Policies & Guidelines](#) | [Frequently Asked Questions](#) | [Contact](#)

Copyright © 2008 U.S. Green Building Council. All Rights Reserved.

neighborhood design.

---

LEED Rating System Dr.  
Review and comment on propo  
Rating Systems.

---

LEED Frequently Asked  
This is a great resource for first  
team members alike.

---



# U.S. GREEN BUILDING COUNCIL

[LEED](#) [Education](#) [Search](#) [Resources](#) [News & Events](#) [Committees](#) [Chapters](#) [Member](#)

## LEED Rating Systems

The Leadership in Energy and Environmental Design (LEED) Green Building Rating System™ is a third-party certification program and the nationally accepted benchmark for the design, construction and operation of high performance green buildings. LEED provides building owners and operators with the tools they need to have an immediate and measureable impact on their buildings' performance.

LEED Br  
Introduct  
Rating Sys  
distributio  
more...

\$0.68 each  
(Members

[BUY](#)

## Project Certification

LEED certification provides independent, third-party verification that a building project is environmentally responsible, profitable and a healthy place to live and work.

In the N

LEED-c  
outperfo  
counter

A new stu  
prices high

## Professional Accreditation

LEED Accredited Professionals are professionals who have demonstrated a thorough understanding of green building practices and principles and familiarity with LEED requirements, resources and processes.

New Yo  
Don't F

Just about  
in the cour  
technology  
trend, esp  
buildings a  
nation's el

## LEED Resources

Find all the resources you need to help you achieve LEED certification, including reference guides and templates for submitting your project's documentation.

Announ

New Co  
Service

As admini  
moves to 1  
January 21  
deliver a s  
certificatio



[About USGBC](#) | [Policies & Guidelines](#) | [Frequently Asked Questions](#) | [Contact](#)

Copyright © 2008 U.S. Green Building Council. All Rights Reserved.



# PILOT PROGRAM: NEIGHBORHOOD DEVELOPMENT

## OVERVIEW OF LEED FOR NEIGHBORHOOD DEVELOPMENT PILOT PROGRAM

LEED for Neighborhood Development is a rating system that integrates the principles of smart growth, new urbanism, and green building into the first national standard for neighborhood design. It is being developed by the U.S. Green Building Council in partnership with the Congress for New Urbanism and the Natural Resources Defense Council. After pilot, this rating system will become part of the comprehensive suite of LEED assessment tools to promote sustainable design, construction, and operations of the built environment.

### Objectives of the Pilot:

The objectives of pilot testing LEED for Neighborhood Development are to ensure that the rating system is practical for application and is an effective tool for introducing smart growth, new urbanist, and green building practices to developers.

### Schedule:

Expressions of interest for participation in the LEED for Neighborhood Development Pilot Program will be accepted through April 6, 2007. Up to 120 pilot projects will be selected and notified by early May. An orientation workshop is anticipated to take place soon after projects are notified (details to be announced). The pilot program will continue for 9 to 15 months, after which the LEED for Neighborhood Development Core Committee will begin assessing the experience gained from the pilot program in order to revise the rating system for public comment and ballot.

### Benefits to Pilot Participants:

Pilot participants may benefit from participation through the following opportunities:

- Demonstrate leadership in the design of neighborhoods that encompass smart growth, new urbanist, and green building design.
- Help shape the LEED for Neighborhood Development Rating System by providing feedback regarding implementation issues for the LEED for Neighborhood Development Core Committee.
- Possible recognition, through a case study and other promotional efforts, as an early adopter in sustainable neighborhood development.

### Application Requirements for Participation in the Pilot:

Potential applicants who wish to participate in the pilot for LEED for Neighborhood Development will need to:

- Submit the following form and a completed LEED for Neighborhood Development project checklist for a specific neighborhood project. Projects must anticipate meeting all prerequisites and earning the minimum number of points through credits to achieve certification based on the pilot version of the rating system, posted, as of February 2007, on the LEED for Neighborhood Development webpage: [www.usgbc.org/leed/nd](http://www.usgbc.org/leed/nd). (The "Preliminary Draft," posted in September 2005, should not be used for this purpose).
- Identify and commit the resources required for participation in the training and certification process.

If selected to participate in the pilot program, participants:

- Must register the project in the pilot program.
- Must submit the certification fee after acceptance into the pilot program. No refunds will be available. (See fee schedule on p. 2). Financial assistance may be available for certain projects. (Details will be announced and posted on the webpage).
- Are strongly encouraged to have at least one member of the team attend the LEED for Neighborhood Development Pilot orientation workshop that is anticipated to take place soon after projects are notified of acceptance.

### Participant Selection Criteria:

Pilot applicants will be selected to participate in the LEED for Neighborhood Development pilot program based on the following criteria:

- Project teams anticipate that all prerequisites can be met and the minimum number of points through credits to achieve certification can be earned.
- Completeness of information provided in the application.
- Potential to contribute to the variety of projects tested during the pilot program.
- Opportunities for project to raise public awareness of LEED for Neighborhood Development and its goals.

### Pilot Application Contact:

If you have any questions about this application, please contact Dara Zycherman, LEED Program Coordinator, USGBC, phone: 202-828-1156, or email: [nd@committees.usgbc.org](mailto:nd@committees.usgbc.org).



# PILOT PROGRAM: NEIGHBORHOOD DEVELOPMENT

## Additional Information

The term "project" is defined as the land and construction that constitutes the basis for your LEED for Neighborhood Development application.

*Please see the definitions section of the pilot version of the LEED for Neighborhood Development Rating System for further explanation of terms.*

## Certification Fees

Project Size	Certification Fee
Less than 20 acres	\$8,000
20 - 100 acres	\$14,000
Greater than 100 acres	\$20,000

## Three-Stage Certification Process

LEED for Neighborhood Development has three stages of certification. In the following form, projects will be asked to indicate which stage best fits the project.

### Optional Pre-Review (Stage 1)

This stage is available but not required at any point before the entitlement process begins. If pre-review approval of the plan is achieved, USGBC will issue a letter stating that if the project is built as proposed, it will be able to achieve LEED for Neighborhood Development certification. The purpose of this letter is to assist the developer in building a case for entitlement among land use planning authorities, as well as a case for financing and occupant commitments.

### Certification of an Approved Plan (Stage 2)

This stage takes place after the developer has been granted any necessary entitlements to build the project to plan. Any changes to the pre-reviewed plan that could potentially affect prerequisite or credit achievement would be communicated to USGBC as part of this submission. If certification of the approved plan is achieved, USGBC will issue a certificate stating that the approved plan is LEED for Neighborhood Development certified and it will be listed as a LEED for Neighborhood Development Certified Plan.

### Certification of a Completed Neighborhood Development (Stage 3)

This stage takes place when construction is complete or nearly complete. Any changes to the certified approved plan that could potentially affect prerequisite or credit achievement would be communicated to USGBC as part of this submission. If certification of the completed neighborhood development is achieved, USGBC will issue plaques or similar awards for public display at the project site and it will be listed as a LEED Certified Completed Neighborhood Development.



# PILOT PROGRAM: NEIGHBORHOOD DEVELOPMENT

## EXPRESSION OF INTEREST FORM

### Section 1: PILOT PROJECT CONTACT INFORMATION

\* Denotes a Required Field

<input type="text"/>	<input type="text"/>	<input type="text"/>
* Primary Contact First Name	* Primary Contact Last Name	* Primary Contact Title
<input type="text"/>	<input type="text"/>	
* Primary Contact Email Address	* Primary Contact Phone Number	
<input type="text"/>	<input type="text"/>	
* Organization Name	* Organization Address	
<input type="text"/>	<input type="text"/>	
* Organization City	* Organization State/Province (US & Canada Only)	
<input type="text"/>	<input type="text"/>	
United States	* Organization Zip Code	
* Organization Country		
<input type="text"/>	<input type="text"/>	
* Alternate Contact Name	* Alternate Contact Email Address	

### Section 2: PILOT PROJECT TEAM EXPERIENCE

*(For informational purposes only; not part of the basis for selection)*

<input type="text"/>	
* Has any member of the team worked on other LEED Certified projects?	
<input type="text"/>	<input type="text"/>
* Is a LEED-ND Core Committee member a paid team member of or paid consultant to this project?	* If so, what is his/her name and what is his/her role?
<input type="text"/>	
* Is a firm/ organization affiliated with a core committee member serving as part of the paid project team or as a paid consultant to this project?	
<input type="text"/>	
* If so, what is the firm/ organization name and what is its role in the project?	



# PILOT PROGRAM: NEIGHBORHOOD DEVELOPMENT

## Section 3: PILOT PROJECT CHARACTERISTICS

**NOTE:** Responses to the questions below will be considered to determine which projects fit the objectives of the LEED for Neighborhood Development pilot program and provide the best overall opportunities to evaluate the applicability of the rating system.

\* Denotes a Required Field

*All numeric fields should be entered without commas*

* Project Title	* Project City		
* Project State/Province (US & Canada Only)	* Project Zip Code	United States * Project Country	
* Project Size (in acres)	* Total Developed Square Feet	* Non-residential Square Feet	* Number of Dwelling Units
* Previous Use of Site	* Regional Location	* If Other, please define	

\* Types of Uses (Select ALL Uses that apply)

- |  |  |   |   |
|--|--|---|---|
| <input type="checkbox"/> Commercial Office         | <input type="checkbox"/> Recreation                        | <input type="checkbox"/> Park                     | <input type="checkbox"/> Military         |
| <input type="checkbox"/> Laboratory                | <input type="checkbox"/> Transportation                    | <input type="checkbox"/> Industrial               | <input type="checkbox"/> Healthcare       |
| <input type="checkbox"/> Public Order & Safety     | <input type="checkbox"/> Library                           | <input type="checkbox"/> Retail                   | <input type="checkbox"/> Stadium/Arena    |
| <input type="checkbox"/> Restaurant                | <input type="checkbox"/> Animal Care (e.g. veterinary)     | <input type="checkbox"/> Hotel/Resort             | <input type="checkbox"/> Higher Education |
| <input type="checkbox"/> Single-Family Residential | <input type="checkbox"/> Special Needs Housing             | <input type="checkbox"/> K-12 Education           | <input type="checkbox"/> Other            |
| <input type="checkbox"/> Multi-Unit Residential    | <input type="checkbox"/> Interpretive Center (e.g. museum) | <input type="checkbox"/> Campus                   | * If Other, please define                 |
| <input type="checkbox"/> Daycare                   | <input type="checkbox"/> Assembly (e.g. conv. center)      | <input type="checkbox"/> Financial/ Communication |   |

\* Describe any opportunity the project has to raise public awareness of the goals of LEED for Neighborhood Development (character limit: 375)





# PILOT PROGRAM: NEIGHBORHOOD DEVELOPMENT

## Section 5: COMMITMENTS BY APPLICANT

Please confirm that your organization is able to commit to the following requirements if selected to participate in the pilot program of LEED for Neighborhood Development:

- Register the project and submit certification fee after acceptance into the pilot program.
- Deliver a high-quality, well-documented submission for certification.
- Provide prompt answers to any follow-up questions on the submission for certification.
- Permit your pilot project to be featured in promotional activities and materials.
- Respond to research questions and surveys about the project and pilot experience.

\* I AGREE & ACCEPT COMMITMENT STATEMENTS

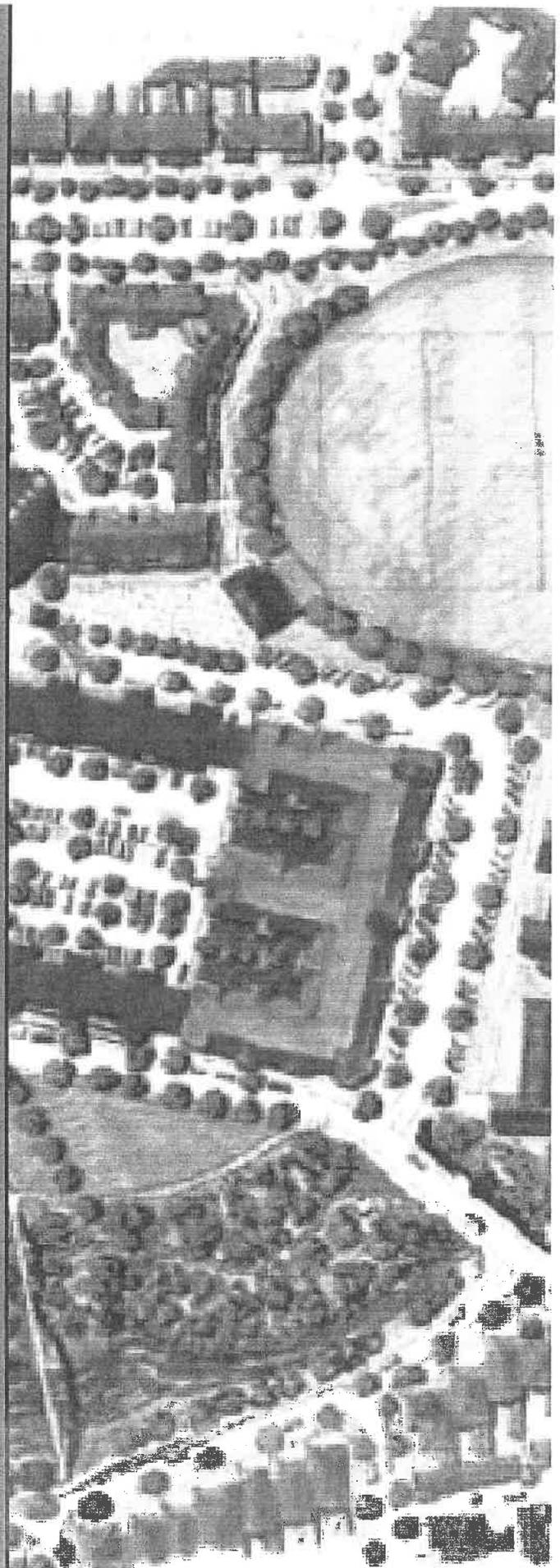
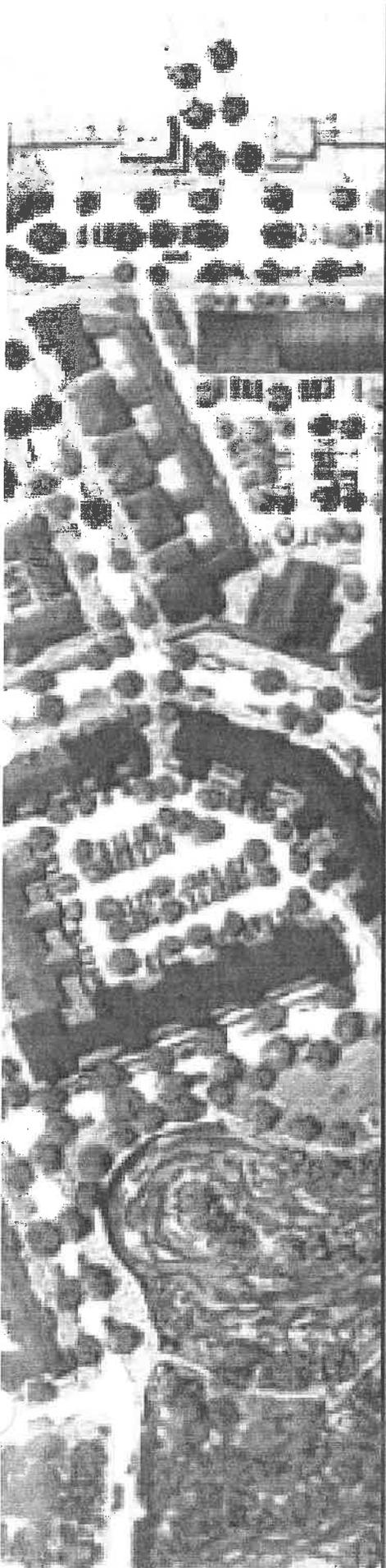
\*Name, Title & Date

---

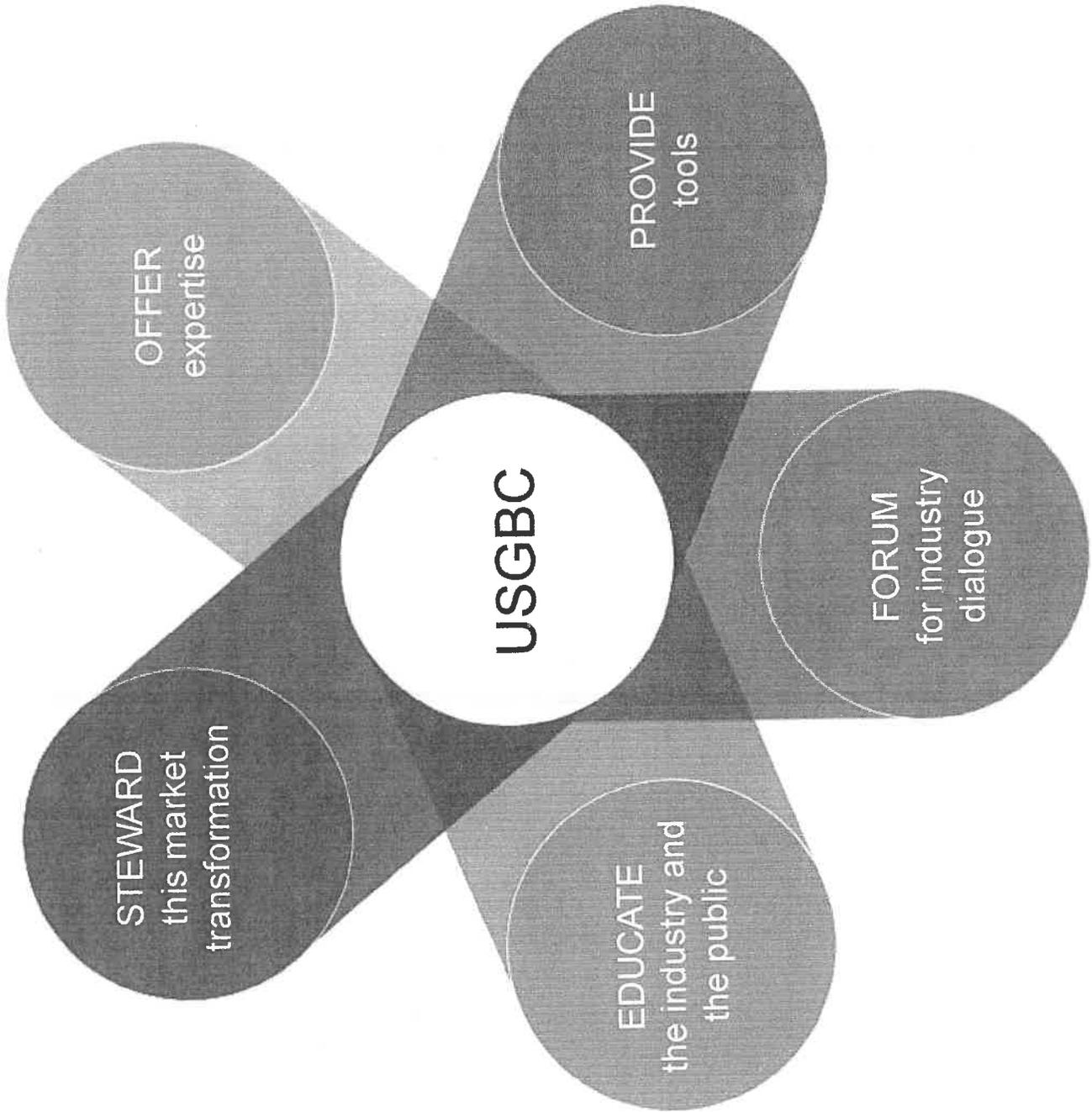
Please submit your completed form with the project checklist no later than  
**5:00 p.m. (Pacific time) on April 6, 2007** to: [nd@committees.usgbc.org](mailto:nd@committees.usgbc.org)

Reset Form





LEED® for Neighborhood  
Development



# What is the LEED System?

Leadership in  
Energy and  
Environmental  
Design

A leading-edge  
system for  
certifying  
the greenest  
performing  
buildings and  
neighborhoods in the  
world

## Green Facts

John M. Langston High School  
Construction & Langston-Brown  
Community Center  
Arlington, Virginia

LEED-NC rating out of 69

Silver 35

Sustainable Site 8

Water Efficiency 3

Energy & Atmosphere 4

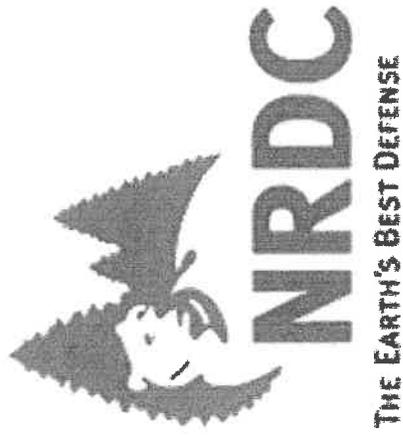
Materials & Resources 6

Indoor Environmental  
Quality 11

Innovation & Design 3

USGBC LEED-NC rated Sept. 3, 2003.

# LEED® for Neighborhood Development is a partnership of:



# What is LEED for Neighborhood Development?

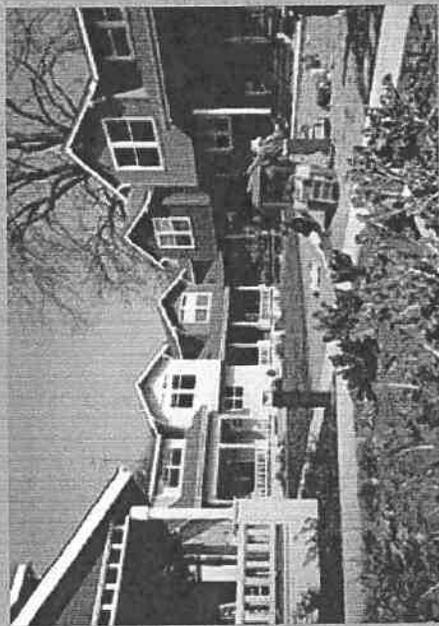


LEED for Neighborhood Development is a rating system that combines elements of smart growth, new urbanism, and green building into the first national standard for neighborhood design.

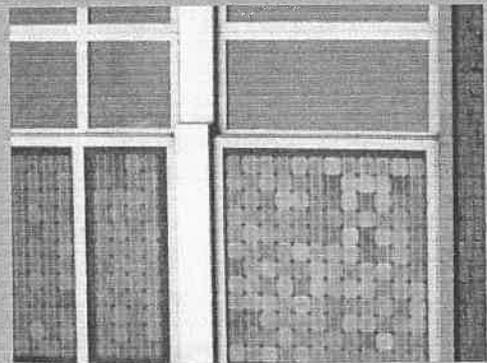
There are three categories of prerequisites and credits in the rating system.



Smart Location & Linkage



Neighborhood Pattern & Design



Green Construction & Technology

## Smart Location & Linkage Prerequisites and Credits (6 Prereqs + 30% of the points)

- Prereq 1 Smart Location
- Prereq 2 Water and Wastewater Infrastructure
- Prereq 3 Imperiled Species and Ecological Communities
- Prereq 4 Wetland and Water Body Conservation
- Prereq 5 Agricultural Land Conservation
- Prereq 6 Floodplain Avoidance
- Credit 1 Brownfield Redevelopment
- Credit 2 High Priority Brownfields Redevelopment
- Credit 3 Preferred Locations
- Credit 4 Reduced Automobile Dependence
- Credit 5 Bicycle Network
- Credit 6 Housing and Jobs Proximity
- Credit 7 School Proximity
- Credit 8 Steep Slope Protection
- Credit 9 Site Design for Habitat or Wetlands Conservation
- Credit 10 Restoration of Habitat or Wetlands
- Credit 11 Conservation Management of Habitat or Wetlands

# Neighborhood Pattern & Design

## Prerequisites and Credits

(2 Prereqs + 39% of the points)

- Prereq 1 Open Community
- Prereq 2 Compact Development
- Credit 1 Compact Development
- Credit 2 Diversity of Uses
- Credit 3 Diversity of Housing Types
- Credit 4 Affordable Rental Housing
- Credit 5 Affordable For-Sale Housing
- Credit 6 Reduced Parking Footprint
- Credit 7 Walkable Streets
- Credit 8 Street Network
- Credit 9 Transit Facilities
- Credit 10 Transportation Demand Management
- Credit 11 Access to Surrounding Vicinity
- Credit 12 Access to Public Spaces
- Credit 13 Access to Active Public Spaces
- Credit 14 Universal Accessibility
- Credit 15 Community Outreach and Involvement
- Credit 16 Local Food Production

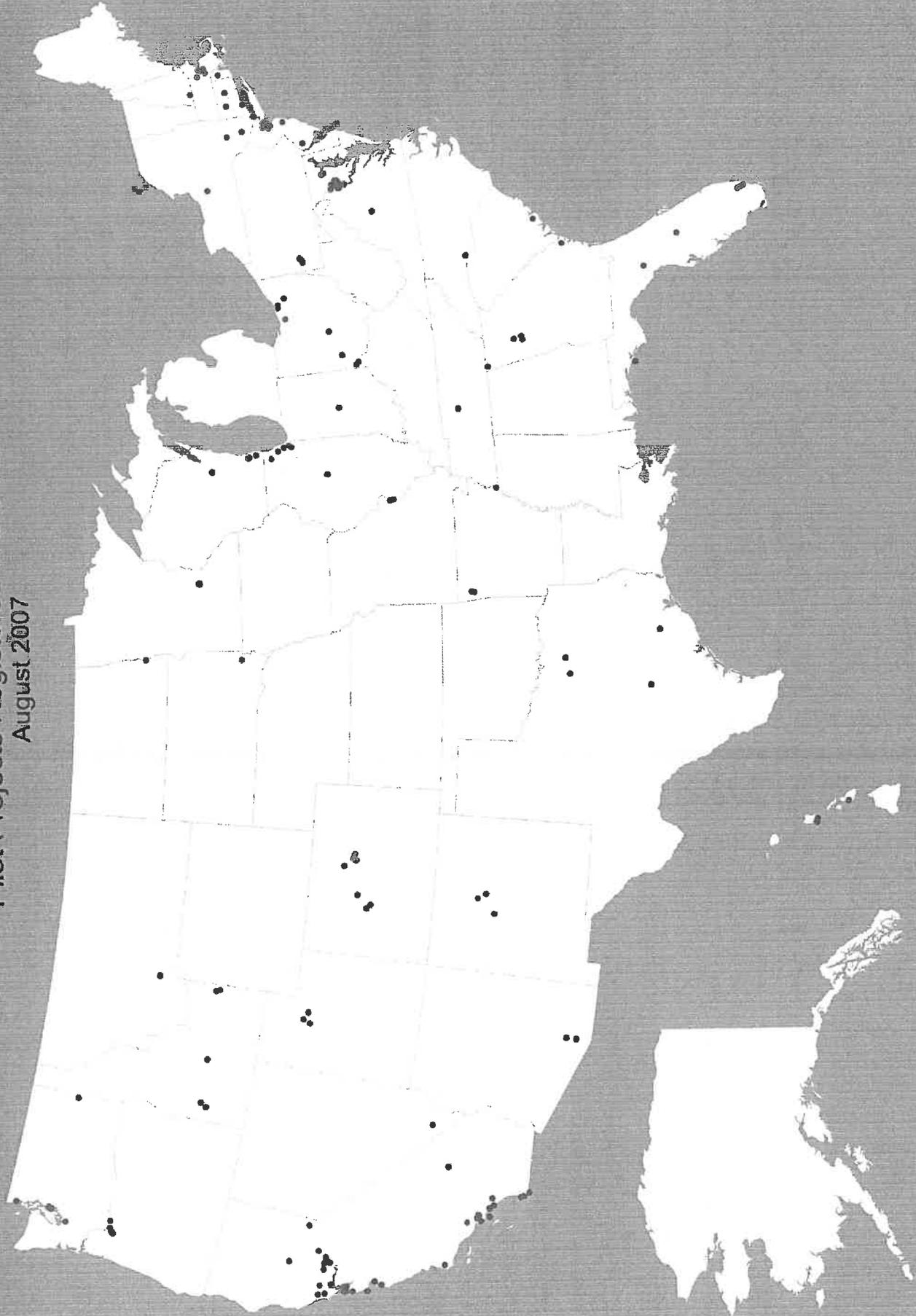
# Green Construction & Technology

## Prerequisites and Credits

(1 Prereq + 39% of the points)

- Prereq 1 Construction Activity Pollution Prevention
- Credit 1 Certified Green Buildings
- Credit 2 Energy Efficiency in Buildings
- Credit 3 Reduced Water Use
- Credit 4 Building Reuse and Adaptive Reuse
- Credit 5 Reuse of Historic Buildings
- Credit 6 Minimize Site Disturbance through Site Design
- Credit 7 Minimize Site Disturbance during Construction
- Credit 8 Contaminant Reduction in Brownfields Remediation
- Credit 9 Stormwater Management
- Credit 10 Heat Island Reduction
- Credit 11 Solar Orientation
- Credit 12 On-Site Power Generation
- Credit 13 On-Site Renewable Energy Sources
- Credit 14 District Heating and Cooling
- Credit 15 Infrastructure Energy Efficiency
- Credit 16 Wastewater Management
- Credit 17 Recycled Content and Reused Materials
- Credit 18 Construction Waste Management
- Credit 19 Comprehensive Waste Management
- Credit 20 Light Pollution Reduction

**LEED for Neighborhood Development**  
Pilot Projects Registered in the U.S.  
August 2007



# Local Pilot Projects: New York

Project Name	City	State	Acreage	Certification Stage*
Arts, Technology & Design Quarter	Syracuse	NY	200.00	Stage 1
Arverne East	New York	NY	87.80	Stage 1
Atlantic Yards Development	Brooklyn	NY	22.00	Stage 2
Columbia University Proposed Expansion	New York	NY	17.00	Stage 1
Melrose Commons	Bronx	NY	80.00	Stage 2
Newburgh Waterfront	Newburgh	NY	26.00	Stage 1
The New Stapleton Waterfront	New York	NY	36.00	Stage 2
Willetts Point Redevelopment Project	Flushing	NY	62.00	Stage 1
Woodstock Commons	Woodstock	NY	19.00	Stage 1

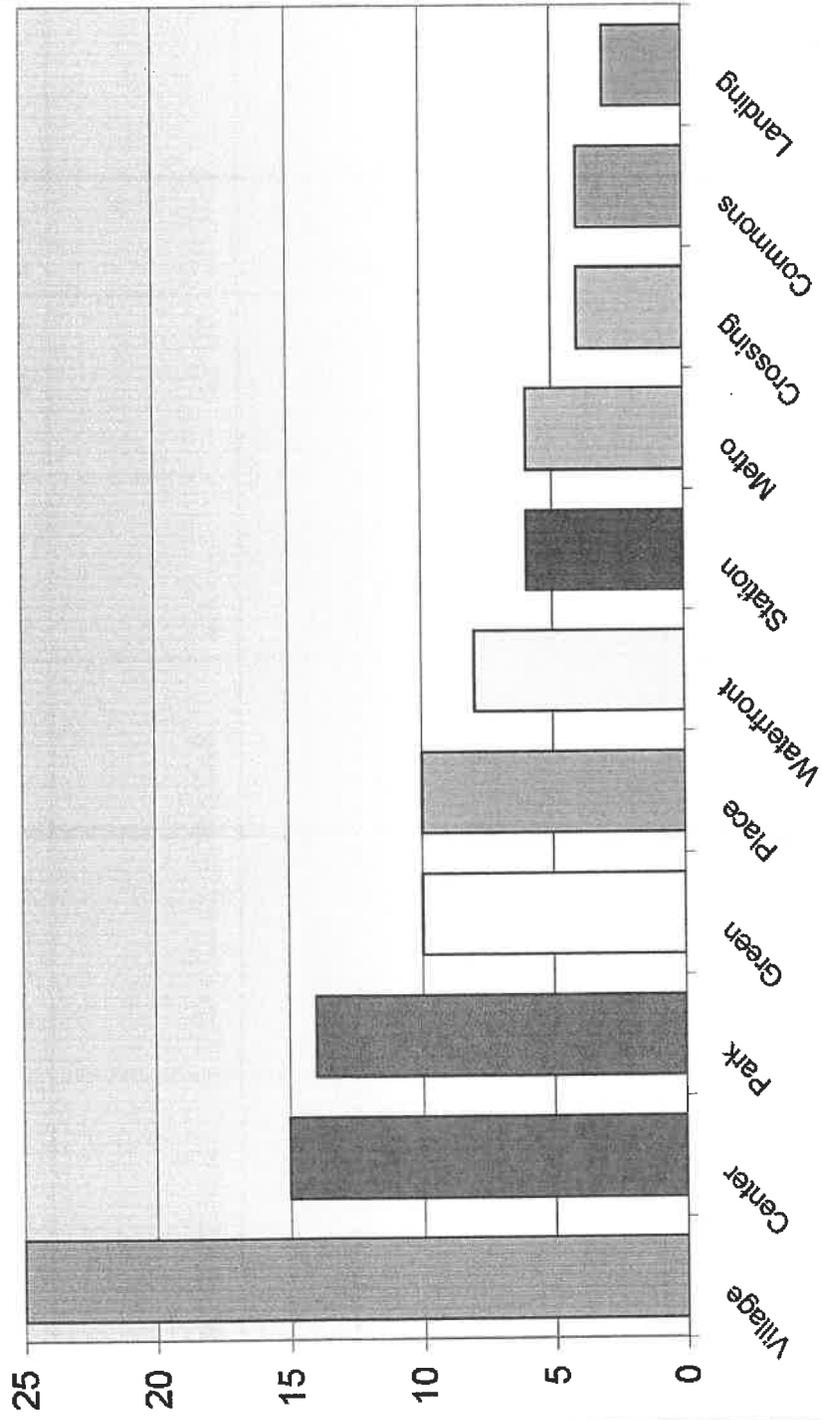
# Local Pilot Projects: Connecticut

Project Name	City	State	Acreage	Certification Stage*
745 Chapel Street	New Haven	CT	1.59	Stage 1
Georgetown Land Development	Georgetown	CT	54.00	Stage 2
Harbor Point	Stamford	CT	80.00	Stage 2
Metro Green Residential	Stamford	CT	3.20	Stage 1
Simsbury River Oaks	Simsbury	CT	60.00	Stage 1
Storrs Center	Mansfield	CT	47.70	Stage 1

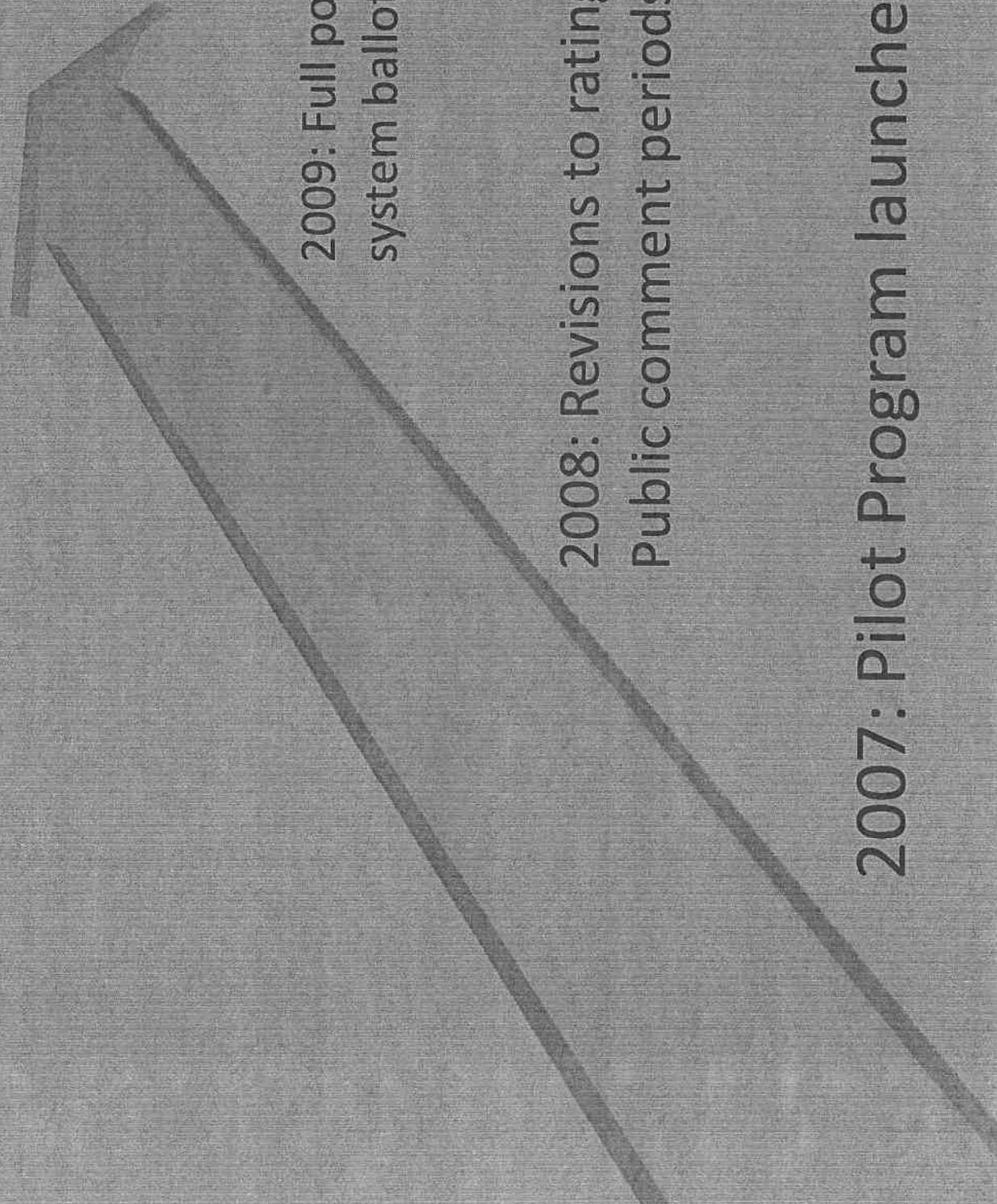
# Local Pilot Projects: New Jersey

Project Name	City	State	Acreage	Certification Stage*
Belmar Seaport Village	Belmar	NJ	70.00	Stage 2
Celadon	Elizabeth	NJ	30.00	Stage 1
GCBD Redevelopment	Borough of Glassboro	NJ	75.00	Stage 1
Wesmont Station	Wood-Ridge	NJ	76.96	Stage 2

# Frequency of Evocative Code Words in Pilot Names



# Development Timeline for Rating System

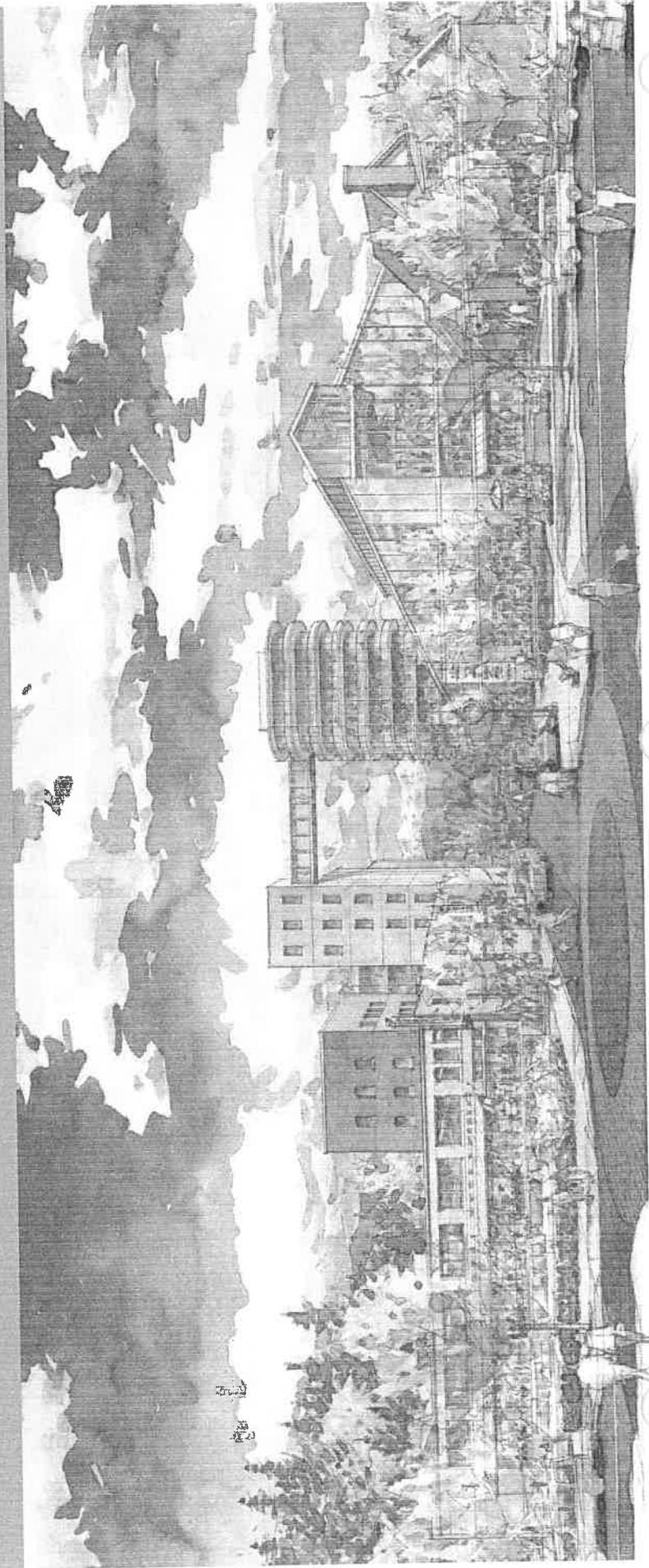


2009: Full post-pilot rating system ballot and launch

2008: Revisions to rating system  
Public comment periods begin

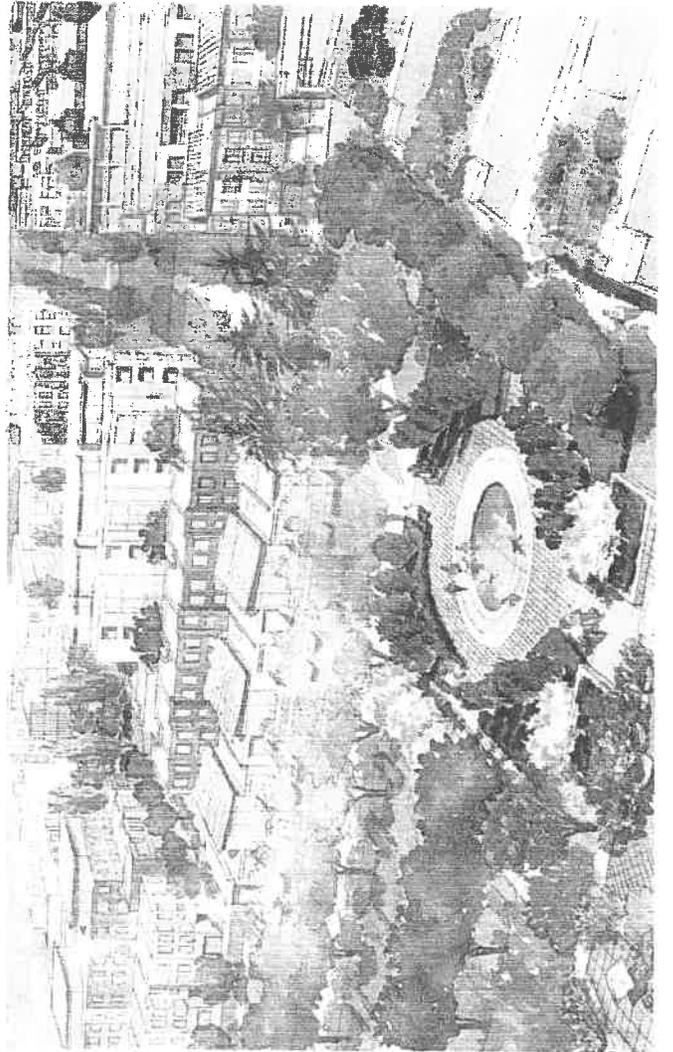
2007: Pilot Program launched

# Introducing Two Certified\* Pilot Projects



# Station Park Green

- San Mateo, California
- Pre-review approval level: Gold
- 12 acres
- Stage 1
- Brownfield



Credit Category	Points Earned
Smart Location & Linkage	21
Neighborhood Pattern & Design	31
Green Construction & Technology	12
Innovation & Design	1



e.g., "10 market st san francisco" or "hotels near la"

Search Maps

Show search options

Search the map Find businesses Get directions

Search Results My Maps

View in Google Earth Print Send Link to this page Traffic Map Satellite Terrain

### Station Park Green

28 views - Unlisted  
Created on Feb 4 - Updated Feb 15  
By Elliot  
Rate this map - Write a comment

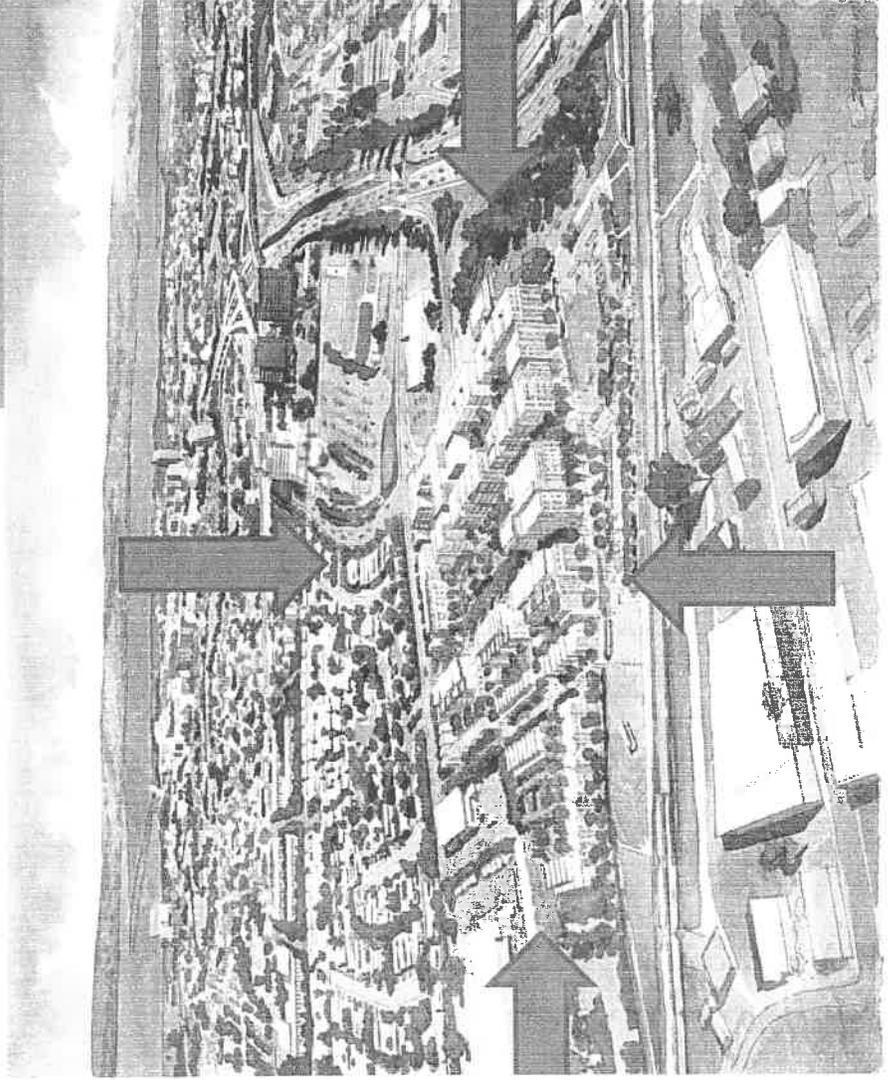
 Station Park Green  
San Mateo CA 12 acres, 600 DU, 70,000 sf nc



Save to My Maps

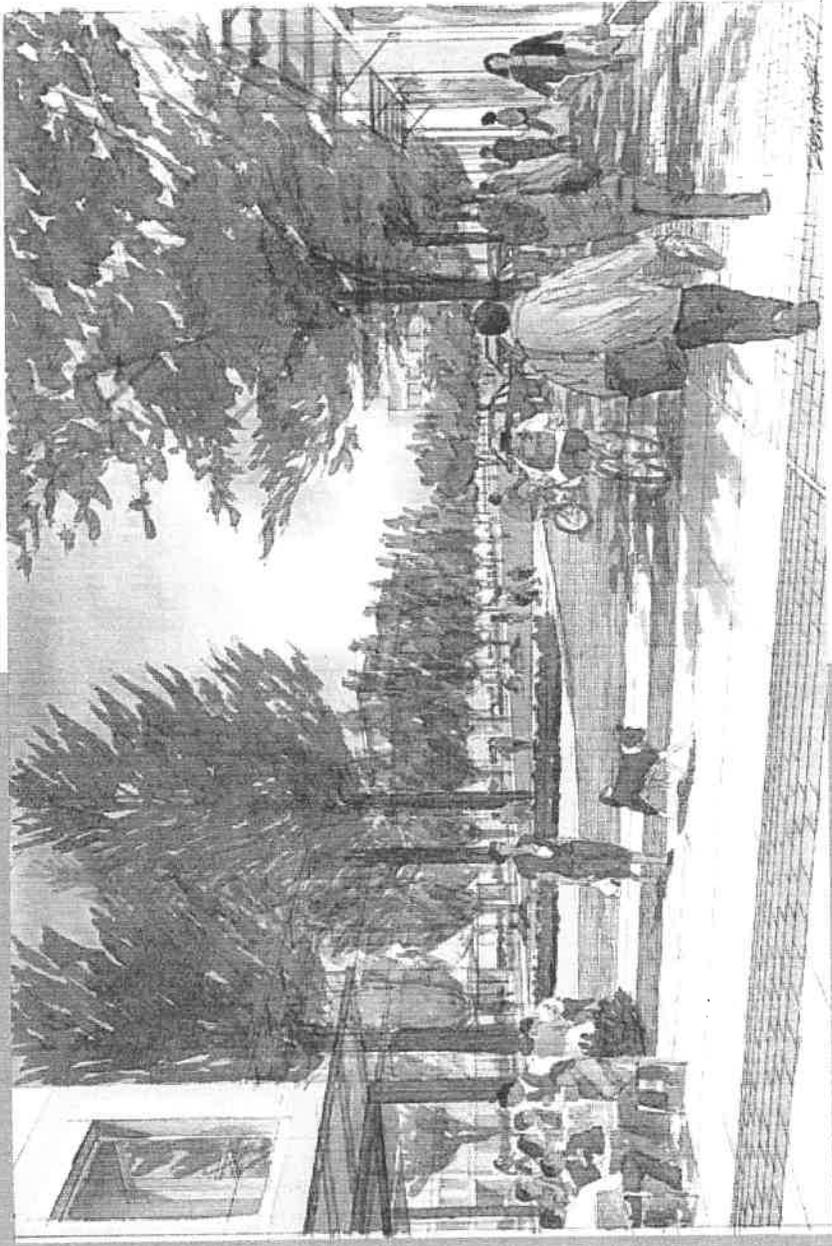
# Station Park Green

- 599 residential units
- 10,000 square feet of office facilities
- Over 60,000 square feet of retail, including community-serving retail and restaurants
- Residential density of 104.2 dwelling units/acre; Nonresidential density of 3.08 FAR
- 41% of the project square footage will be LEED Certified
- 30% reduced water consumption planned



# Station Park Green

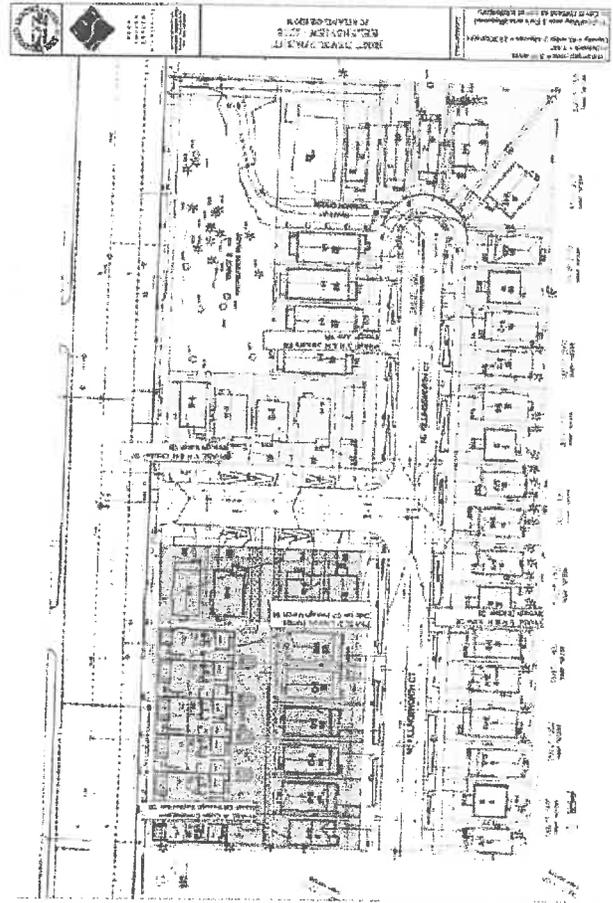
- Previously the site of a K-mart and large parking lot
- Adjacent to the Hayward Park Caltrain station
- Responds to the San Mateo Corridor Plan, which calls for dense developments and additional residences clustered around transit stops
- Free shuttle service to other stations/downtown



# Helensview

- Portland, Oregon
- Certification level: Gold
- 4 acres
- Stage 2
- Previously developed

Credit Category	Points Earned
Smart Location & Linkage	18
Neighborhood Pattern & Design	21
Green Construction & Technology	6
Innovation & Design	6





e.g. "10 market st, san francisco" or "hotels near lay"

Search Maps

Show search options

Search the map Find businesses Get directions

Search Results My Maps

Save to My Maps

### Helensview

38 views - Unlisted  
Created on Feb 4 - Updated Feb 15  
By Eild  
Rate this map - Write a comment

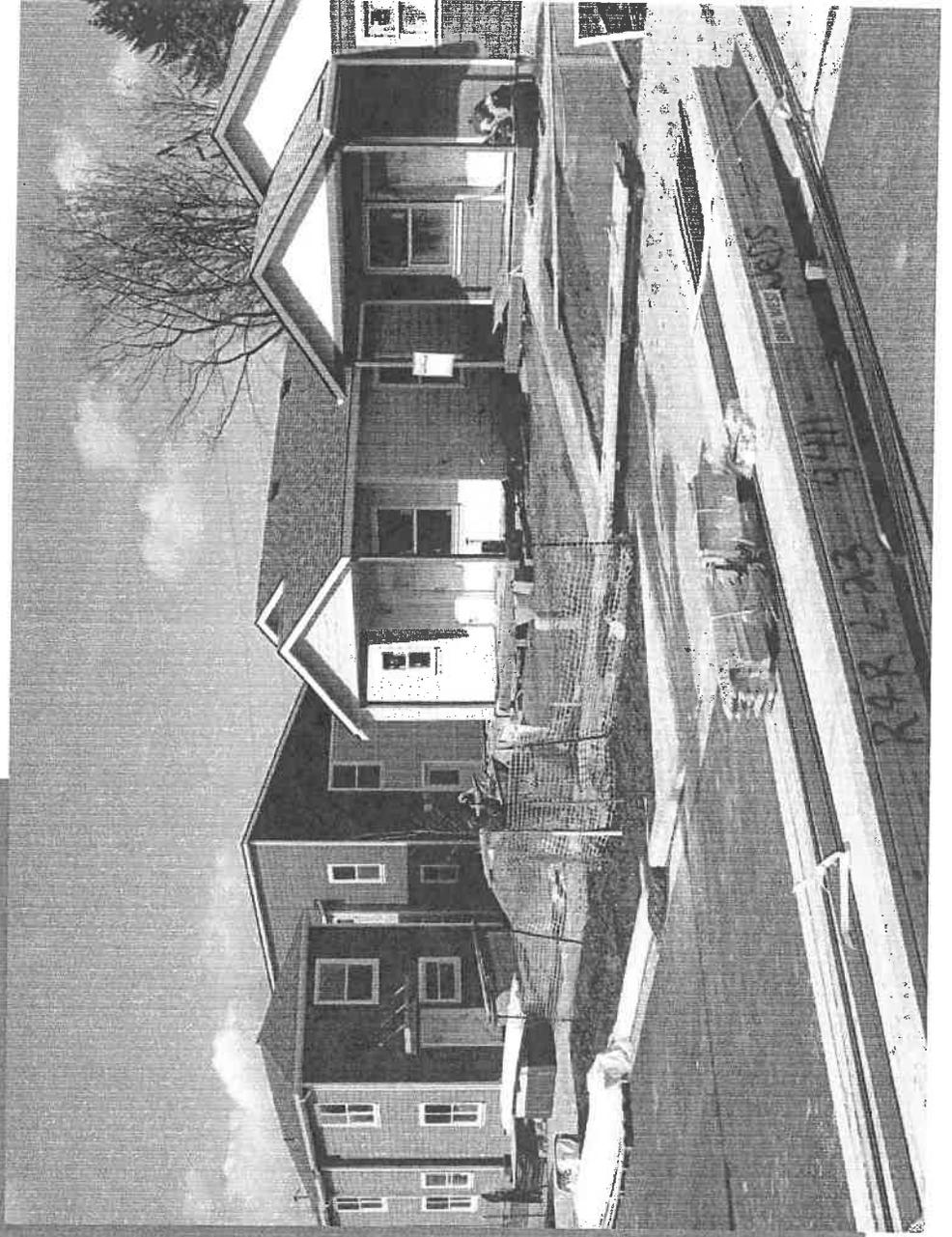
Portland OR 4 acres, 53 DU Stage: 2 Cert stat



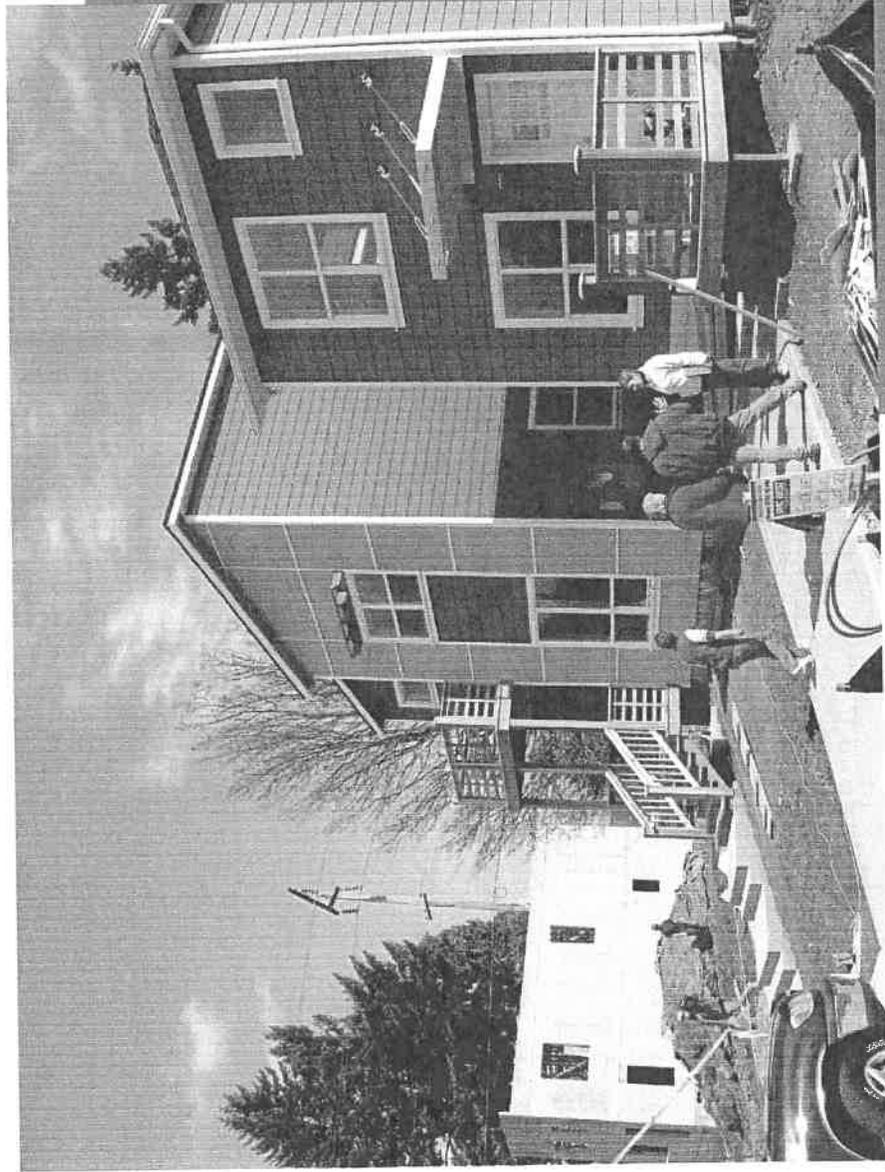
View in Google Earth Traffic Map Satellite Show labels Terrain

# Helensview

- 40 new homes, 12 flat stacked condos and one rehabilitated house, with all new construction designed for LEED for Homes certification.
- 100% housing will meet affordability standard
- 21.3 dwelling units/acre
- 100% of stormwater will be managed on site

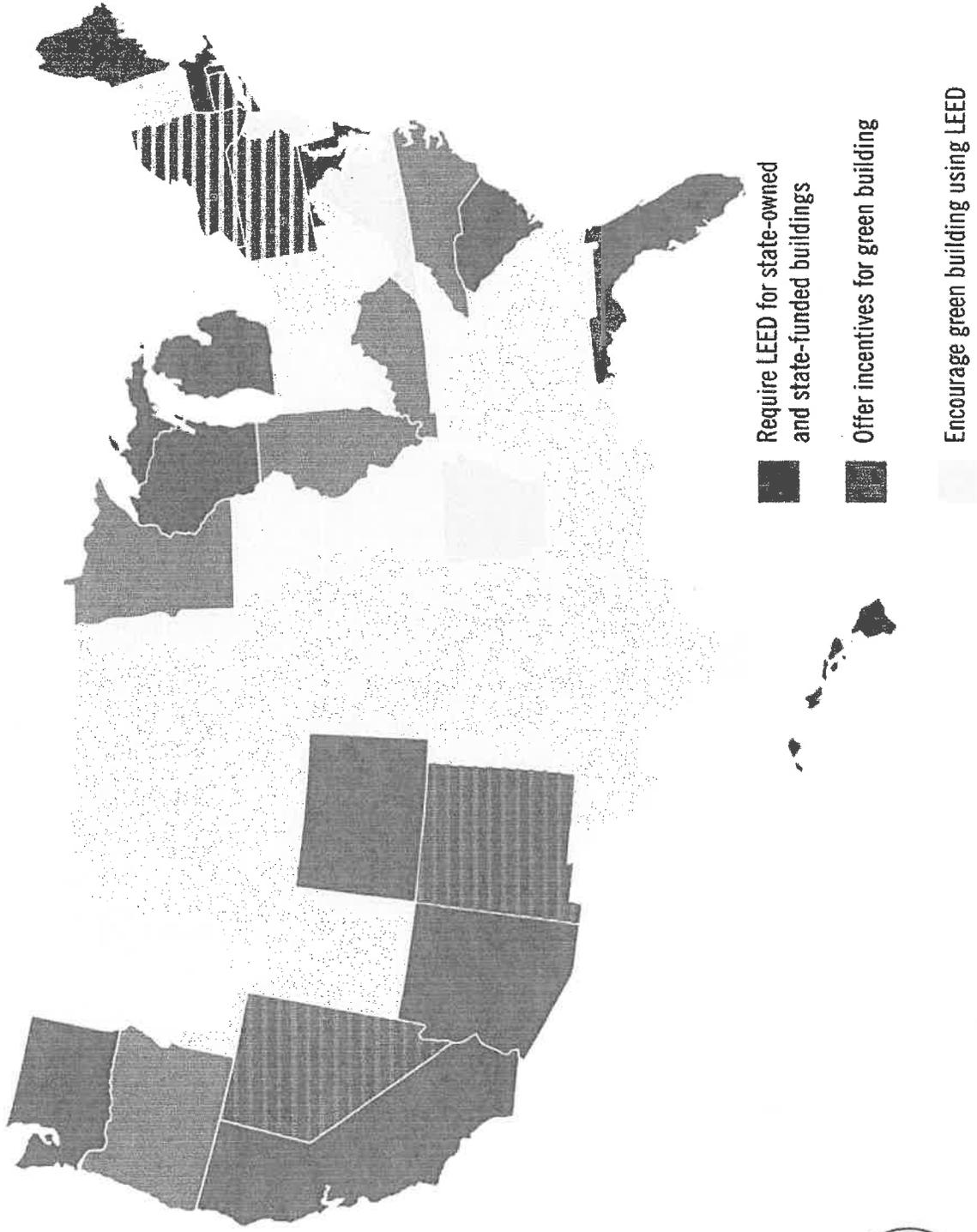


# Helensview



- A significant number of jobs accessible on foot or public transit
- All new construction will meet ENERGY STAR requirements
- Drought-resistant native landscaping used; homeowner's manual promotes sustainable landscaping as well

# Green Building Policy Initiatives



# LEED for Neighborhood Development as a Policy Tool: Guidance for Local/State Govts

## Do's

- Consider using it as the basis for financial incentives for projects.
- Consider using it as the basis for structural incentives for projects.
- Consider using it as an evaluative screen for your own zoning, regs, and master plans.
- Be familiar with the rating system, and carefully consider how it might work best for your needs.

## Don'ts

- Expect it to replace comp plans, zoning, or planning itself.
- Expect it to replace environmental regulations.
- Expect to be able to certify your town, city, or comp plan.

# Stay connected to LEED for Neighborhood Development...

Visit [www.usgbc.org/leed/nd](http://www.usgbc.org/leed/nd) to

- Download the complete LEED for Neighborhood Development Pilot Rating System.
- View a complete list of pilot projects.
- Sign up for our corresponding committee listserv to receive minutes from core committee meetings and other announcements.

To request the guidance for state and local governments, write to [nd@committees.usgbc.org](mailto:nd@committees.usgbc.org)

## Comparison of U.S. Pilot Locations to All Zip Codes & Urban Areas (176 projects using the 2000 census)

Census Item	Pilot Zip Codes	All Zip Codes	Pilots As a % of All Zips	All Urban Areas	Pilots As a % of All Urban Areas	Potential Climate Change Benefits <sup>(a)</sup>
<b>Population</b>						
Urban area location <sup>(b)</sup>	90.9%	77.6%	117	100.0%	90	
Rural location	9.1%	22.4%	41	0.0%	N/A	
Persons/sq. mi.	5,890	1,221	482	2,656	222	‡
Minority	36.1%	30.9%	117	29.8%	121	
Median household income	\$44,484	\$41,984	106	\$44,840	99	
Households below poverty	15.7%	12.4%	127	12.9%	122	
<b>Work Commute</b>						
Drive alone	64.3%	75.7%	85	74.3%	87	‡
Carpool	12.1%	12.2%	99	11.9%	102	
Public transportation	11.7%	4.7%	249	6.6%	177	‡
Cycle/walk	7.5%	3.4%	221	3.5%	214	‡
Work at home	3.7%	3.3%	112	2.9%	128	
Mean travel time to work (min.) <sup>(c)</sup>	25.3	25.5	99	25.1	101	
<b>Housing</b>						
Person/household	2.65	2.59	102	2.62	101	
Owner occupied units	50.1%	66.2%	76	61.5%	81	
Renter occupied units	49.9%	33.8%	148	38.5%	130	
SF units	52.6%	65.8%	80	55.3%	95	
MF 2-4 units	13.5%	8.1%	149	9.1%	148	‡
MF 5-19 units	12.9%	8.7%	148	9.5%	136	‡
MF 20+ units	17.9%	8.6%	208	10.0%	179	‡
Median structure age (years)	42	27	156	39	108	

a) Areas with population of 50,000 or more.

b) Reduced incremental energy demand and greenhouse emissions per capita from ND projects in higher-density, multimodal surroundings.

c) Mean travel time to work includes waiting for public transportation and picking up carpool passengers.

# The Costs of LEED and/or Green ...for longer answers:

[www.usgbc.org](http://www.usgbc.org) > Resources > Green Building Research > Research & Publications; scroll down to Economic Analysis

## The Cost of Green Revisited

The Cost of Green Revisited, an extension of the 2004 Costing Green report, shows that many projects are achieving LEED within their budgets and in the same cost range as non-LEED projects.

## Costing Green

Based on an in-depth study of the cost of sustainable buildings, this report concludes that there is no significant difference in the construction costs for LEED versus non-LEED buildings.

## The Costs and Financial Benefits of Green Buildings

This October 2003 report to California's Sustainable Building Task Force includes LEED building analysis.

## Green City Buildings: Applying the LEED Rating System

A cost/benefit analysis of applying LEED design criteria to city buildings.

## Greening America's Schools: Costs and Benefits

This report, prepared by Capital E, compares the financial costs and benefits of green schools and conventional schools.

## GSA LEED Cost Study

The U.S. General Services Administration commissioned this report to estimate soft and hard costs for developing green federal facilities.

Health and Productivity Gains from Better Indoor Environments and their Relationship with Building Energy Efficiency  
Fisk; 2000

# Thirty Hot Tips From Laclede Gas

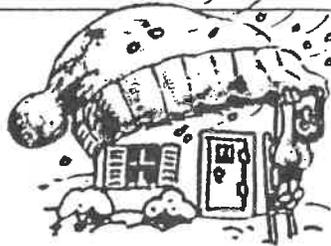


When's the best time to think about saving natural gas? If you guessed winter, you're only partially right. If you think about it every day, you'll be better off in the long run.

Here are 30 ways to save natural gas and reduce your bills. Follow as many of them as you can every day. You'll be surprised how much you can save.

## Hot Tips on Home Heating

**1** Attic insulation could be your best investment. It lowers the cost of both heating and cooling. **2** Be sure to keep your fireplace damper closed when the fireplace is not in use. **3** Service the central heating system before the heating season begins to ensure that the flues are not blocked and the burners are working. Regular checkups will keep your furnace operating safely and efficiently. **4** Start the heating season with a clean furnace filter and each month inspect, clean and replace it as necessary to improve efficiency during both the heating and the cooling seasons. **5** Install storm doors and windows to help prevent heat loss. Weather stripping and caulking block cold outside air. **6** Seal off unused rooms by closing the registers and keeping the doors shut tightly. Do not, however, seal off more than one-fifth, or 20%, of your total



living space because your furnace may not operate properly. **7** Keep your thermostat low. Each extra degree adds about 4% to 5% to your heating bill. When you leave for the day or over the weekend, lower the setting about 5°. For longer absences, lower the thermostat to 55° (but don't set it lower because your pipes may freeze). **8** A programmable thermostat is a wise investment because it helps keep the temperature lower automatically while you are sleeping or gone for the day. **9** Don't place furniture in front of heating registers. **10** If radiators are near cold walls, place aluminum or aluminum foil between walls and radiators to reflect heat back into the room. **11** Open draperies on sunny days to allow sunlight to help heat your home. Close them at night to help keep out the cold. **12** Encourage children not to run into and out of the house unnecessarily.

## Hot Tips on Cooking

**13** Preheat the oven only when necessary (when you bake cakes and quick breads). The broiler needs preheating only for rare steaks. **14** Plan to bake several dishes at the same temperature when possible. **15** Do not block oven air passages with aluminum foil or oven liners. Poor air flow can cause uneven baking. **16** Thawed foods cook faster.

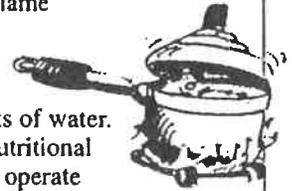


**17** On top burners use the smallest flame possible. The flame should never exceed the pan's width. **18** Water boils faster in covered pans.

**19** Cook vegetables in small amounts of water.

Avoid overcooking, which reduces nutritional value. **20** Clean ovens and cooktops operate more efficiently. **21** If the burner flame is yellowish instead of blue, clean the burner with soap and water.

A blue flame is more efficient than a yellow one. (Note: Some aerosols, such as nonstick cooking sprays, may cause the flame to appear yellow. In such cases the yellow flame does not affect the burner's efficiency.)



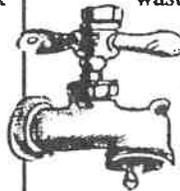
## Hot Tips on Hot Water

**22** A water heater setting of "Normal" or "Low" is usually sufficient. **23** Take showers; they use less hot water than baths. Also, avoid running hot water unnecessarily during hand washing or shaving. **24** Wash full loads in dishwashers and washing machines.

**25** Repair leaky faucets; constant dripping adds up to gallons of wasted hot water.

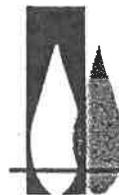
**26** Use the right-size water heater; heating an oversized tank of water wastes gas.

By the way, heating water is the second-largest use of energy next to heating a house. Savings on hot water can be significant.



## Hot Tips on Drying Clothes

**27** Dry a full load each time but avoid overloading. **28** Clean your lint trap before each load to improve dryer efficiency. **29** Don't overdry, which can ruin delicate clothing and waste gas. **30** Consider line-drying clothing inside during the wintertime. You will add humidity to your home, which can make you more comfortable, and use less gas.



**Laclede Gas**  
THE NATURAL GAS EXPERTS  
(314)621-6960

# GOING GREEN?

---

**Solar Path and Garden Lights** - Why pay for power when new technology provides strong light and savings? Let the sun conveniently power lights that automatically turn on at night to enhance your home and add security.

**RETURN ON INVESTMENT: 47 %**

**Windows** - Why not replace your old windows or add 'smart windows' to a new addition. ENERGY STAR® qualified 'Low-E' windows help reduce your energy bill up to 15%, so they save money for as long as you own your home.

**RETURN ON INVESTMENT: 43 %**

**Skylights** - Why keep the sun out when new technology reduces summer heat gain. Skylights replace your old windows or add 'smart windows' to an addition. ENERGY STAR® qualified 'Low-E' windows help reduce your energy bill up to 15%, so they save money for as long as you own your home, and they add to the resale value.

**RETURN ON INVESTMENT: 43 %**

**Insulated Walls** - Why spend more than you need to keep your home comfortable? Properly insulate your house because 50% of the energy that a single family house consumes goes toward heating and cooling.

**RETURN ON INVESTMENT: 40 %**

**Insulated Basement Walls** - Why spend more than you need to keep your home comfortable? Properly insulate your house because 50% of the energy that a single family house consumes goes toward heating and cooling.

**RETURN ON INVESTMENT: 40 %**

**Insulated Ducts** - Why spend more than you need to keep your home comfortable? Properly insulate your house because 50% of the energy that a single family house consumes goes toward heating and cooling.

**RETURN ON INVESTMENT: 40 %**

**Solar Attic Fan** - Why not let the sun help cool your attic and extend the life of your roof? Attic fans conveniently fit between rafters and save you money every year.

**RETURN ON INVESTMENT: 40 %**

**Replacement Light Fixtures** - Why waste power with inefficient fixtures? Many new light fixtures are designated exclusively for compact fluorescents that save you money.

**RETURN ON INVESTMENT: 37 %**

**Toxic Free Paints** - Why spend so much time painting a room just to add more chemicals that create health risks? Toxic free 'Zero VOC (volatile organic compound)' paint only costs a few extra dollars a gallon and the savings comes in protecting your family's health.

**RETURN ON INVESTMENT: 35 %**

**Faucets** - Why waste water when new technology regulates pressure and saves you money? High-Efficiency faucets save about 50% of the water required by conventional showers.

**RETURN ON INVESTMENT: 33 %**

Water Heater Replacement - Why let your old water heater continue to drain your wallet? New technology tanks have high insulation and recovery values to save you money.

RETURN ON INVESTMENT: 32 %

Sealed Air Leaks - Why let the drafts that you can feel or the ones that you can't feel increase the cost of keeping your home comfortable? A professional can typically reduce air leakage by 25% and you will recoup the service costs in just a few years, and then save money every year thereafter.

RETURN ON INVESTMENT: 32 %

Whole House Water Filters - Why spend extra money on bottled water and water 'softeners' when you can get a system for your whole house? Filtered water at every faucet and in every shower reduces chlorine and chlorine-resistant parasites at the point of entry saves your health and money.

RETURN ON INVESTMENT: 31 %

Whole House Fans – Why make your AC do all the work when you can draw cooler evening air into your house as a primer for your AC. New technology fans use less electricity, have more power, and run more quietly than ever before.

RETURN ON INVESTMENT: 27 %

Air Quality Whole House - Why risk the health of your family with indoor air quality that is worse than outdoors. Electrostatic air cleaners reduce the risk of chemicals used in home construction, and they eliminate mold and pollen.

RETURN ON INVESTMENT: 27 %

On Demand Water Heater - Why waste money heating up water when you aren't using it? 'Flash' or 'Tankless' heaters can reduce your bill by 50%, plus you get endless hot water that doesn't run out like the conventional tank system.

RETURN ON INVESTMENT: 26 %

Furnace Replacement - Why risk working your old furnace into the ground when the new high efficient furnaces save you money every month of the winter? The right furnace will make a big difference since 50% of the energy that a single family house consumes goes toward heating and cooling.

RETURN ON INVESTMENT: 26 %

Trees - Why not let nature reduce more and more of your utility bills each year? Evergreens on the north side help diffuse winter wind and deciduous trees on the south help shade the house in the summer and let sunshine in all winter.

RETURN ON INVESTMENT: 25%

Clothes Washer - Why waste water and electricity if your clothes won't know the difference? ENERGY STAR® qualified models use 50% less energy than standard washers and saves about 8,600 gallons of water per year for the average household.

RETURN ON INVESTMENT: 24 %

Recycled Mulch – Why mulch each year or so when the latest recycled tire mulch looks great and lasts for decades? You pay more up front, but you save on the cost of materials and 'installation' time each year.

RETURN ON INVESTMENT: 22 %

Ceiling Fans - Why not help out the AC with a cool breeze, and help out the Heater by drawing warm air down from the ceiling? Multi-speed and reversible motor ceiling fans can save you 25- 40% on your electrical bills in summer and up to 10% on heating bills in the winter.

RETURN ON INVESTMENT: 20 %

Insulate Attics and Ceilings - Why spend more than you need to keep your home comfortable? Properly insulate your house since 50% of the energy that a single family house consumes goes toward heating and cooling.

RETURN ON INVESTMENT: 20 %

Refrigerator - Why not replace your old refrigerator. ENERGY STAR® qualified models use at least 10% less energy than required by current federal standards, and 40% less energy than the conventional models.

RETURN ON INVESTMENT: 20%

Light Sharing - Why not let natural light through certain doorways to enhance interior rooms and save money? Transoms and translucent glass doors add interest and reduce your need to power light fixtures.

RETURN ON INVESTMENT: 20%

Heat Pumps / AC – Why not let the latest advances in technology help heat your house? 'Dual fuel' systems help you save money by giving you the power to choose between the cost of electricity and gas, depending on how cold it gets over the winter.

RETURN ON INVESTMENT: 20%

Greywater - Small Scale- Why let all of the water just go down the drains and out of your house? A typical American house uses over a quarter million gallons of water each year. Now, waste water from sinks and showers can be treated and recycled for irrigation and toilets.

RETURN ON INVESTMENT: 20%

Bamboo Floors - Why take the hardwood 'slow boat' when bamboo grows 100 time faster than conventional wood flooring? Bamboo offers durability, great style, and simply costs less than typical wood. Now you can price it competitively against carpet.

RETURN ON INVESTMENT: 20%

Cork Floors - Why not get durability, comfort, and easy installation? New pre-coated 'floating' systems, look great and have tap-in systems that can save you money on the installation that makes cork competitive with carpet - and it lasts much longer.

RETURN ON INVESTMENT: 20%

Window Treatments – Why just close the blinds when you can get high performance curtains? New 'thermal ' insulated curtains, toxic free fabric, and sun screens, can each save money on your energy bill and save your family's health.

RETURN ON INVESTMENT: 20%

Carpeting – Why let the kids roll around in chemicals? Many of the eco-friendly carpets are not only made from recycled materials, but they have less of the toxic chemicals which helps the overall environment as well as your indoor environment.

RETURN ON INVESTMENT: 17%

Rain Water Collection - Why not let nature water the garden rather than the water processing plant? Save water, reduce storm water overflow, and water your garden for free with chlorine free nutrients that your planting will love.

RETURN ON INVESTMENT: 16%

Composting - Why throw it all away? You can make incredibly rich potting soil for a fraction of what it costs at the garden center.

RETURN ON INVESTMENT: 15%

Decking - Why repair, weather treat, or replace wood decks when 'composite' materials out perform. Decks made from recycled material and saw dust last five times as long as wood, and they look great without the maintenance or splinters.

RETURN ON INVESTMENT: 15%

Thru Wall Room to Room Fans – Why let one room stay too hot or cold when you can easily level the climate control between two rooms? New high efficiency fans are only 8" in diameter and they fit neatly in any interior wall with either an outlet plug in hard wire.

RETURN ON INVESTMENT: 15%

Air Quality By Room - Why risk the health of your family with indoor air quality that is worse than outdoors. Electrostatic air cleaners reduce the risk of chemicals used in home construction, and they eliminate mold and pollen.

RETURN ON INVESTMENT: 15%

Sun Tubes - Why flip a switch to light an interior bathroom or closet, when the sun can shine down and into the space. Sun tubes are great when a skylight will not work due to an attic or obstructions, and the light fills the room, naturally.

RETURN ON INVESTMENT: 15%

---

Dr. Ronn Phillips, ArchD  
State Housing and Environmental Design Extension Specialist  
College of Human Environmental Sciences Extension  
University of Missouri  
Columbia, Missouri 65211  
[phillips@missouri.edu](mailto:phillips@missouri.edu)  
573-882-4575

# Native Plant Rain Gardens



*A Grow Native! guide for homeowners, teachers and landscape designers*



**Turn your  
roof runoff  
into a refuge  
for birds,  
butterflies and  
dragonflies**

David Besenger

## **Miniature wetlands reduce stormwater problems and create wildlife habitat**

Ever watch your gutter's downspout gush during a heavy rain? The average Missouri roof sheds tens of thousands of gallons of water a year. Where does all the rainwater go? In urban areas, roof runoff flows into the local stormwater system, which often is stressed already by road and parking lot runoff.

You can ease the stress by channeling your roof's runoff into a rain garden, which is a miniature wetland.

If you've been to a natural Missouri wetland, such as Lowry Marsh Natural Area in Mercer County near Princeton, you know that wetlands are beautiful, moist landscapes

rich with native wildflowers, grasses, birds, reptiles and dragonflies. Aside from providing beauty and natural diversity, wetlands perform a vital landscape function. Their densely rooted native plants capture, filter, store and slowly release stormwater. Wetlands also trap and use nutrients such as nitrates and phosphates that otherwise would run off and pollute nearby streams.

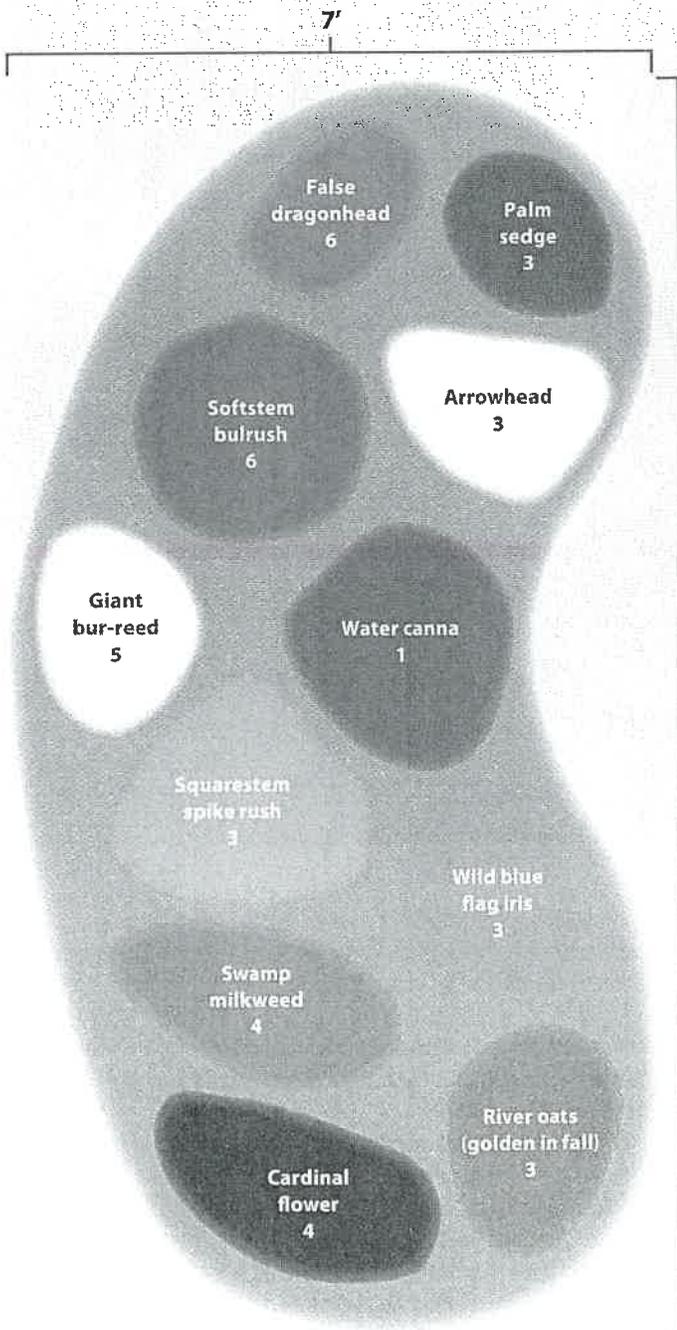
As a tiny wetland, your rain garden will reduce drainage and flooding problems, keep pollutants out of your local stormwater system, and bring beauty and wildlife to your landscape. The rain garden designs on the following pages will help you provide habitat for some of Missouri's most colorful, fun-to-watch and water-dependent wildlife species.

## Choose a rain garden design that's right for your soil type

To ensure the success of your rain garden, determine your soil type and choose native wetland plant species that are right for it. Clay soil is sticky and feels like plastic. Well-drained, sandy soil is rough and gritty and breaks up easily. Here are two rain garden layouts—one for clay soils and one for well-drained-to-sandy soils. Please use these designs as guidelines. It's great to strive for maximum diversity, but you don't need all the plants listed to have a beautiful, absorbent, wildlife-friendly rain garden.

### Clay soils

Color spots indicate flower or seasonal color and recommended number of plants for a 7-by-10 foot rain garden

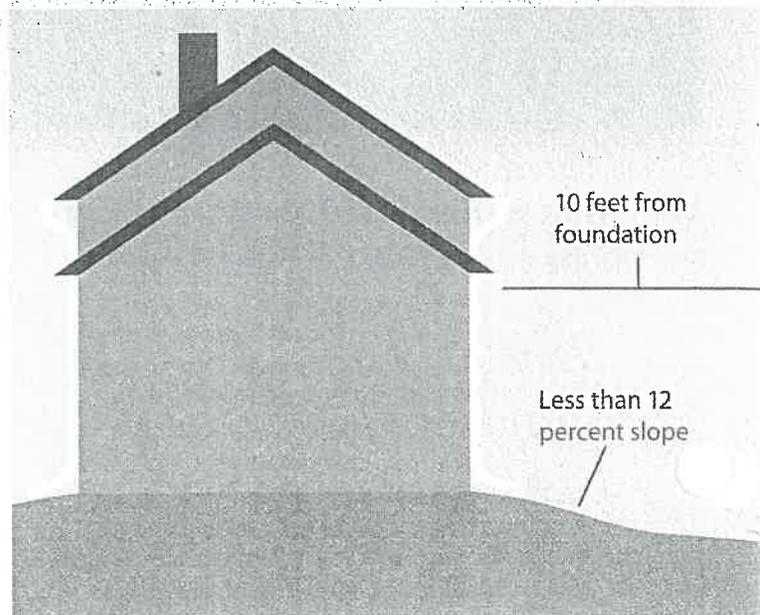


## How do I make a rain garden?

It's not complicated. Just follow these easy steps:

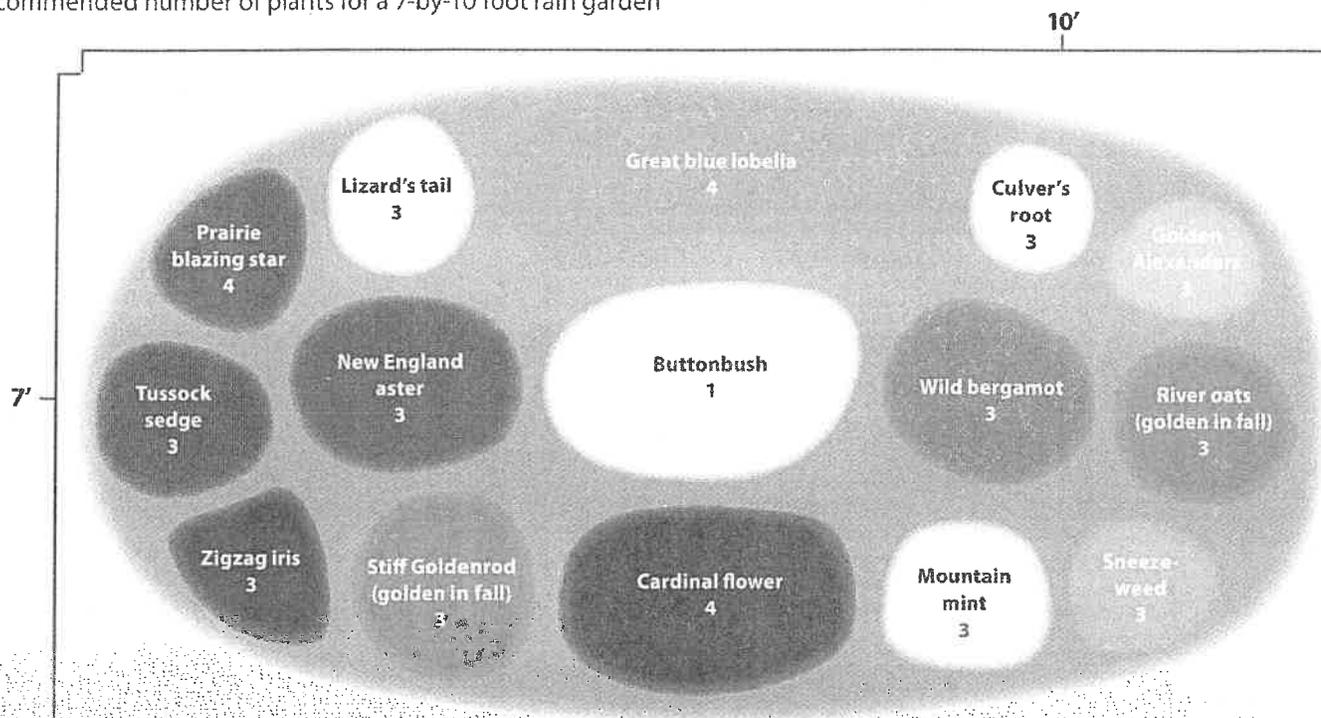
1. Determine the size of your rain garden by estimating your roof's square footage. Your rain garden should be about one third the size of the area providing runoff. The 70-foot-square gardens in this guide are based on a roof area of 200 square feet. If your roof area is smaller or larger, you will need to adjust the garden size accordingly.
2. Choose a spot at least 10 feet from your house and down slope from your downspout or sump-pump outlets.
3. Before digging, make sure you won't encounter any utility lines. Contact (800) DIG-RITE so utility lines can be marked.
4. For a 200-square-foot roof area, dig a shallow depression 6-to-8 inches deep and 10-feet long by 7-feet wide. Slope the sides toward the center. Adjust the square-footage measurements if your roof area is larger or smaller.
5. Test the overflow pattern to be sure it runs away from your house. Do this by filling the depression with water and watching the overflow. If necessary, dig a shallow channel to direct water away from buildings and toward the street.
6. Direct your downspout or sump-pump outlet to your rain garden depression, either by digging a shallow channel or by piping runoff through a buried 4-inch, black-plastic drainpipe.
7. Now you are ready to plant the native plants recommended in this design sheet. The designs place taller plants in the center of the design and shorter ones along the edges. Adjust plant numbers if your garden is larger or smaller.
8. Put a 3-inch layer of untreated shredded hardwood mulch on the bare soil around the plants to conserve moisture and keep your design looking neat.
9. Water your planting every other day for the first few weeks or until it shows growth and good establishment.

### Rain garden location



## Well-drained-to-sandy soils

Color spots indicate flower or seasonal color and recommended number of plants for a 7-by-10 foot rain garden



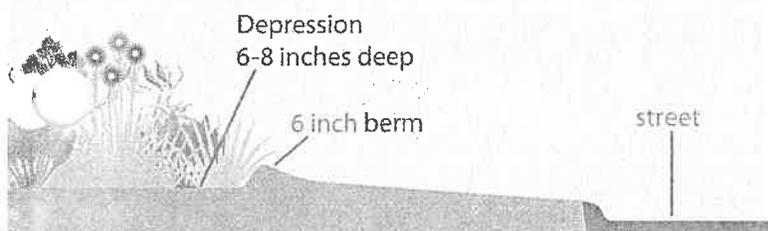
### What tools and materials will I need?

- A shovel
- A mattock for digging a shallow trench
- Trowel
- Garden hose
- Wheelbarrow for transporting mulch
- A length of 4-inch, black-plastic drain pipe, if you need to channel water from your downspout into your rain garden
- Stones, logs, statuary

### Tips for success

- Don't spread or spray lawn fertilizers too close to your rain garden. Fertilizers stimulate weeds and create competition for the native plants.
- Like all gardens, rain gardens need periodic maintenance. To keep your rain garden looking neat, maintain your design boundary by clipping and mowing.
- Come spring, mow and remove dead vegetation to stimulate new growth.
- To attract birds, place a birdhouse nearby.
- Add a comfortable bench so you can enjoy watching birds and butterflies.
- Place rocks or garden ornaments in and around your rain garden—be creative!

Rain gardens should be located at least 10 feet from the house on a gentle slope that catches downspout water.



### What about mosquitoes?

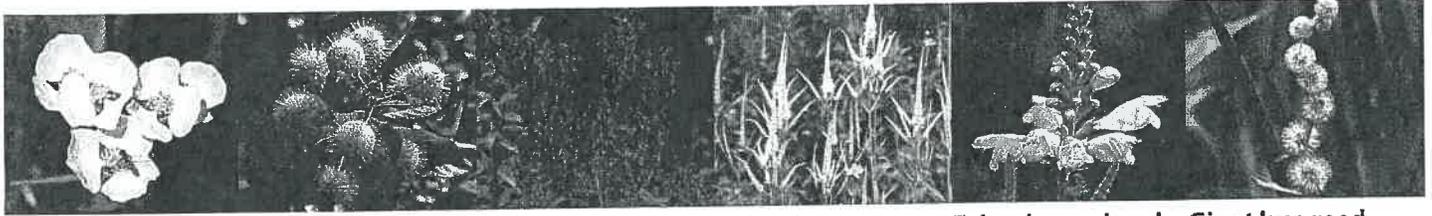
When some people think "wetland," they automatically think "mosquitoes." Truth is, mosquitoes need at least a week of standing water to complete their life cycle. Unless you design your rain garden to hold water, its densely rooted plants will absorb water, preventing the formation of mosquito-friendly puddles. Poorly maintained birdbaths and rain gutters are more likely to serve as mosquito breeding grounds than a rain garden, which attracts mosquito-hungry bats and dragonflies.



Dragonflies eat mosquitoes in both nymph and adult stages.

# Wetland plant photo gallery

(Listed in alphabetical order by common name. Numerals indicate plant height; months indicate bloom time.)



**Arrowhead**  
*Sagittaria graminea*  
1-2' • June-September

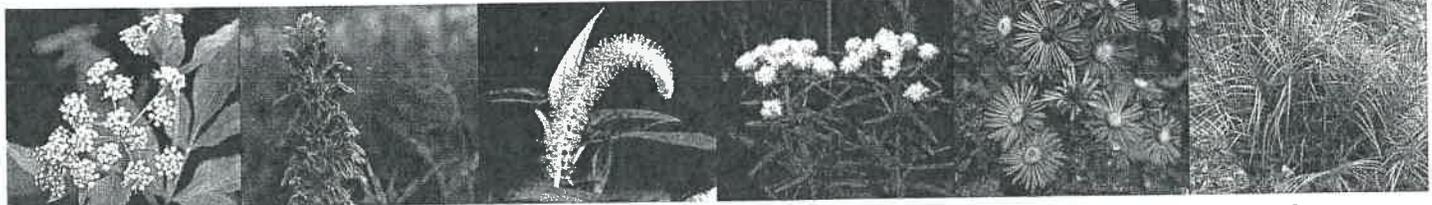
**Buttonbush**  
*Cephalanthus occidentalis*  
3-6' • July-August

**Cardinal flower**  
*Lobelia cardinalis*  
2-4' • July-September

**Culver's root**  
*Veronicastrum virginicum*  
3-5' • June-August

**False dragonhead**  
*Physostegia augustifolia*  
2-4' • July-September

**Giant bur-reed**  
*Sparganium eurycarpum*  
1-3' • May-June



**Golden Alexanders**  
*Zizia aurea*  
1-2' • May-June

**Great blue lobelia**  
*Lobelia siphilitica*  
2-4' • August-September

**Lizard's tail**  
*Saururus cernuus*  
2-5' • June-September

**Mountain mint**  
*Pycnanthemum virginianum*  
2-4' • July-September

**New England aster**  
*Aster novae-angliae*  
1-5' • August-October

**Palm sedge**  
*Carex muskingumensis*  
1-3' • August-October



**Prairie blazing star**  
*Liatris pycnostachya*  
2-4' • July-September

**River oats**  
*Chasmanthium latifolium*  
2-3' • fall color

**Sneezeweed**  
*Helenium autumnale*  
2-6' • August-October

**Softstem bulrush**  
*Schoenoplectus tabernaemontani*  
2-6' • May-July

**Squarestem spike rush**  
*Eleocharis quadrangulata*  
up to 4' • June-October

**Stiff goldenrod**  
*Solidago rigida*  
2-4' • July-October



**Swamp milkweed**  
*Asclepias incarnata*  
2-4' • July-August

**Tussock sedge**  
*Carex stricta*  
12-18" • May-June

**Water canna**  
*Thalia dealbata*  
4-6' • July-October

**Wild bergamot**  
*Monarda fistulosa*  
2-4' • July-August

**Southern blue flag**  
*Iris virginica shrevei*  
1-3' • May-July

**Zigzag iris**  
*Iris brevicaulis*  
9-12" • June

## Wildlife prefer locally grown native plants

If you plant a native rain garden to make a refuge for wildlife and increase natural diversity, be sure to buy plants native to Missouri. In addition, be sure they were grown in Missouri. Native plants from your region have a better chance of thriving in your yard than plants and seeds imported from a different part of the country. Also, cultivars developed from natives may not be as useful to wildlife or as adaptable to local conditions as true natives.

Visit [www.grownative.org](http://www.grownative.org) to find nurseries that specialize in Missouri-grown native plants. Just click on "Buyer's Guide," then "Find Suppliers" to locate the Grow Native! retail nursery nearest you. Grow Native! is a joint education and marketing program of the Missouri Departments of Conservation and Agriculture.



### Special thanks to Applied Ecological Services

Some of the information and designs in this brochure came from Applied Ecological Services, a native-plant landscape design service in Brodhead, Wis [www.appliedeco.com](http://www.appliedeco.com)

Equal opportunity to participate in and benefit from programs of the Missouri Department of Conservation is available to all individuals without regard to their race, color, nationality, sex, age or disability. Questions should be directed to the Department of Conservation, P.O. Box 180, Jefferson City, MO 65102, (573) 751-4115 (voice) or 1-800-735-2966 (TTY), or to the U.S. Fish and Wildlife Service Division of Federal Assistance, 4401 N. Fairfax, Drive, Mail Stop: MBSP-4020, Arlington, VA 22203.

Copyright © 2004 by the Conservation Commission of the State of Missouri 2/2006 E00568

# Environmental Benefits of

Preserving Our Environment for the Future

# Recycling



*a continuing effort of the*

**St. Louis-Jefferson  
Solid Waste Management District**

serving the City of St. Louis, Jefferson County, St. Louis County and St. Charles County



*Recycling Works!*

in the St. Louis Metropolitan Area

# Recycling is Preserving Our Environment for the Future

The recycling efforts of the residents and businesses in the St. Louis-Jefferson Solid Waste Management District are improving our environment every day. Through these efforts, the diversion of municipal solid waste from landfills has increased in the District from 10 percent in 1990 to 45 percent in 2003, and the results are clear: cleaner air and water, less pollution, more forested land and open space and reduced greenhouse gases.



Everyone knows recycling means less trash going to our landfills. But the greatest environmental benefits of recycling are related not to landfills, but to the conservation of energy and natural resources. By decreasing the need to extract and process virgin materials from the earth, recycling can also eliminate the pollution associated with the first two stages of a product's development: material extraction and processing. Recycling reduces, and in many cases eliminates, these pollutants.

Why use a valuable material or product once, and then place it in your trash to be buried in a landfill? Instead, divert that material for recycling and capture the energy and resources already used to make that product. Since recycled materials have been refined and processed once, manufacturing the second time around is much cleaner and less energy-intensive.

## DID YOU KNOW?

- Recycling aluminum saves 95 percent of the energy used to manufacture virgin aluminum.
- Recycling 1 ton of newspaper saves enough energy to heat a home for 6 weeks.
- Recycling 1 ton of plastics saves the equivalent of 3.85 barrels of oil.
- Recycling 1 glass bottle can save enough energy to light a 100-watt bulb for 4 hours.



## RECYCLING—SAVES ENERGY

- The 953,900 tons of paper, glass, metals, plastics and other materials recycled in 2003 saved enough energy to power 124,000 homes for one year.



Products made using recovered (rather than virgin) materials use significantly less energy. Energy is saved by reducing the need to extract and process raw materials in order to manufacture new products. Less energy used means less burning of fossil fuels such as coal, oil and natural gas. Most of the energy used in industrial processes and related transportation involves burning fossil fuels. When burned these fuels release pollutants, such as sulfur dioxide, nitrogen oxide and carb monoxide, into the air.

## RECYCLING—SAVES NATURAL RESOURCES

- By recycling over 116,000 tons of paper in the District last year, over 1.8 million trees did not need to get cut down.
- By recycling 85,000 tons of steel in 2003, District residents saved 106,000 tons of iron ore, 59,000 tons of coal and 5,000 tons of limestone.

*By using recycled materials instead of trees, metal ores, minerals, oil and other raw materials taken from the earth, recycling-based manufacturing helps to conserve limited natural resources. Therefore, sound conservation practices help to reduce the need to expand logging and mining operations.*

## RECYCLING—REDUCES AIR AND WATER POLLUTION

- In 2003, recycling reduced overall air emissions by 16,550 tons and reduced waterborne wastes by 2,710 tons. Air emissions exclude carbon dioxide and methane which are greenhouse gases.

*By decreasing the need to mine and process virgin materials from the earth, recycling can eliminate the pollution associated with the first two stages of a product's development: material extraction and processing. Mineral mining and processing pollute the air, land and water with toxic materials, such as ammonia, carbon dioxide, carbon monoxide, methane and sulfur dioxide. Recycling reduces, and in many cases eliminates, these pollutants. In addition, recycling keeps materials out of landfills where they can introduce leachate into groundwater and surface waters.*



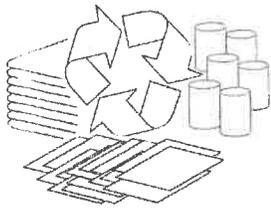
## RECYCLING—REDUCES GREENHOUSE GAS EMISSIONS

- In 2003, recycling in the District reduced greenhouse gas emissions by over 536,000 metric tons of carbon equivalent, which is comparable to the carbon emissions from 405,000 cars.

*By reducing air and water pollution and saving energy, recycling offers an additional environmental benefit: it reduces heat trapping greenhouse gases, such as carbon dioxide, methane, nitrous oxide and chlorofluorocarbons, that may contribute to global climate change. Recycling and composting reduce greenhouse gas emissions by 1) decreasing the energy needed to make products from raw material, 2) reducing emissions from incinerators and landfills, which are major sources of methane gas emissions in the U.S. and 3) slowing the harvest of trees, thereby maintaining the carbon dioxide storage benefit provided by forests.*

# Growth and Progress

Waste reduction, composting and recycling efforts continue to expand throughout the District. Approximately 45 percent of what was once considered waste is now being diverted from disposal in landfills. These results have been accomplished through the collaborative efforts of the public, private and not-for-profit communities. Because of these efforts, less waste is going to our landfills. But in addition, energy and natural resources are conserved. Recycling also reduces, and in many cases eliminates, the pollution associated with virgin material extraction and processing.



## Environmental Benefits of Recycling Study

The Environmental Benefits of Recycling Study was conducted by the East-West Gateway Council of Governments for the St. Louis-Jefferson Solid Waste Management District. This project measured and documented the effect that recycling, reuse and waste reduction in the district has on the environment. Environmental effects considered include: energy conservation; greenhouse gas emissions; air and water pollution; and conservation of natural resources.

District municipal solid waste generation and recycling estimates were developed using District, state and national data. This information was then fed into the National Recycling Coalition's Environmental Benefits Calculator.

For more information: U.S. Environmental Protection Agency - *Puzzled About Recycling's Value? Look Beyond the Bin*, 1998 ([www.epa.gov/epaoswer/non-hw/recycle/benefit.pdf](http://www.epa.gov/epaoswer/non-hw/recycle/benefit.pdf)); U.S. Environmental Protection Agency, *Global Warming* - [www.epa.gov/globalwarming](http://www.epa.gov/globalwarming); and National Recycling Coalition - Environmental Benefits Calculator - [www.nrc-recycling.org](http://www.nrc-recycling.org).



## St. Louis-Jefferson Solid Waste Management District

The St. Louis-Jefferson Solid Waste Management District provides direct assistance to the public, private and not-for-profit sectors in establishing and expanding waste reduction and recycling. The District serves the City of St. Louis, St. Louis County, Jefferson County and St. Charles County.

A wide variety of programs and services are underway to address and meet the needs of the areas within the District, which range from highly urban to extremely rural. The District supports these efforts with technical assistance for the implementation of waste reduction and recycling programs, grants to support related programs and services and networking of resources and opportunities for individuals, organizations and businesses.

### More Information

St. Louis-Jefferson SWMD  
7525 Sussex Avenue  
St. Louis, MO 63143  
314-645-6753 phone  
314-645-6504 fax

[www.swmd.net](http://www.swmd.net)

Prepared by



**EAST-WEST GATEWAY**

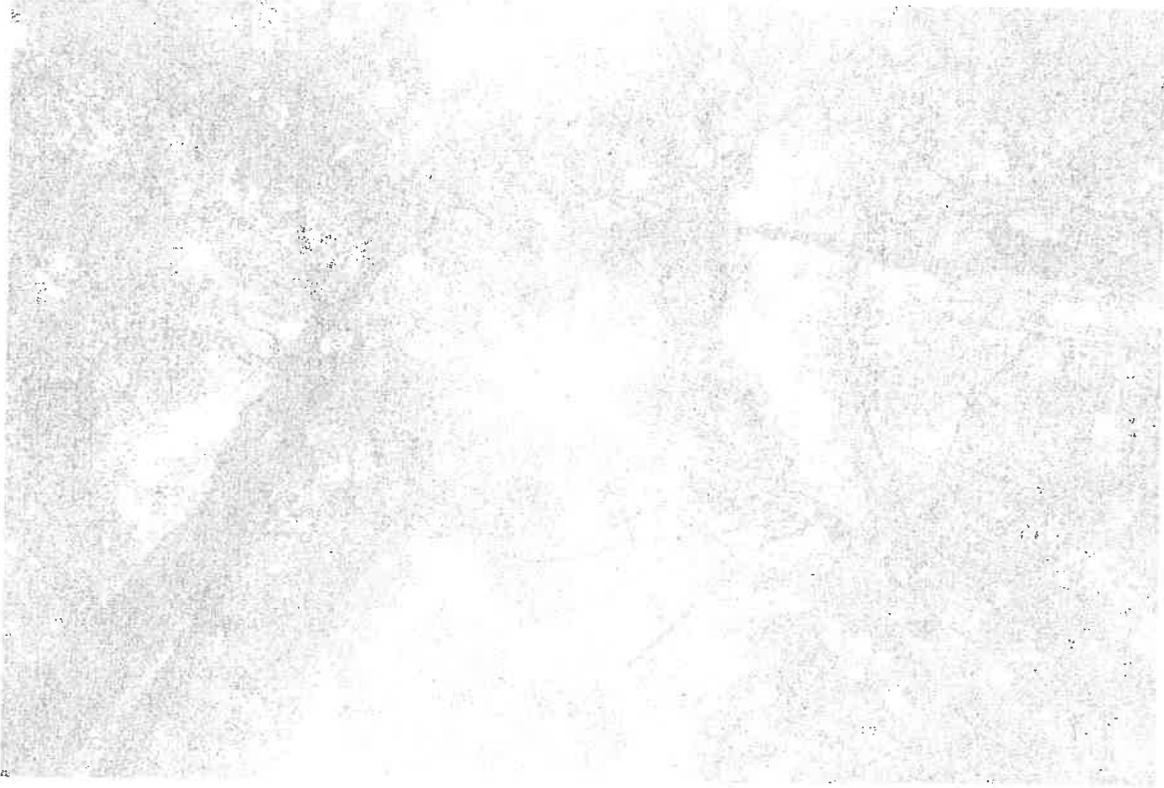
Council of Governments

Creating Solutions Across Jurisdictional Boundaries

[www.ewgateway.org](http://www.ewgateway.org)



# APPENDIX B-1





## Gottfried Duden

ST. LOUIS, MISSOURI. October 26, 1824. *Domestic chores for women on the frontier; slavery on the frontier.*

The choicest settlements are along the Ohio, the White, and the Wabash rivers. The state was established in 1816 and, at present, has a population of about a hundred and fifty thousand souls. Slavery is as little permissible as in the state of Ohio and in Illinois. It is claimed that this law is not favorable to the rapid progress of the interior. The state of Ohio has been able to increase its population more easily through the immigration of poor settlers from the Atlantic states. Settlements in the more remote regions, however, require more means, which are almost exclusively in the possession of such persons who, because of their education and their circumstances, are relieved from spending all their time in physical labor, and usually make use of servants or slaves in establishing settlements. As long as the population is sparse, servants are very expensive. I have stayed overnight in houses that were very luxurious in their accoutrements, with costly carpets in all rooms, but one asked in vain for a servant. The landlord was compelled, in spite of his considerable wealth, to care personally for the horses as well as for the guests. Furthermore, his wife and daughters had to perform the most menial household tasks. Their only topic of conversation was that they wished to sell their establishments in order to move to a state where one could keep slaves.

MONTGOMERY COUNTY, MISSOURI. September 1825. *Description of wagon trip to the frontier; establishment of new home in wilderness; food and supplies for the frontier family.*

A large freight wagon (or several, according to the needs of the family) is loaded with the household goods in such a manner that a covered space remains free for passengers. In addition to the household goods, tents and provisions are included: smoked pork, beans, peas, rice, flour, cheese, and fruit; also for the first week, bread, and maize for the energetic horses. Thus the journey is begun. Sometimes the owner rides with his wife and children in a special wagon, sometimes in a coach, or he rides on horseback. If he has male slaves, one of these will be the driver. Otherwise he or some other member of the family does it. On the entire trip of perhaps more than 1,200 English miles, there is no thought of stopping at an inn. During the feeding of the horses at noon the kitchen also goes into operation. A stopping place is chosen near a spring or a brook, either in the shade or in the open according to the weather. A fire is quickly lighted and housekeeping proceeds as if they were at home. In the evening, more thought is given to the selection of the next campsite. If something is needed; such as cooking utensils or provisions, they stop near a farm and tents are set up, especially if the weather is bad. Some members of the party tend to the domestic animals (if the journey is not too long even the cattle are taken along), and others are busy with the kitchen. Finally, the lodging for the night is prepared. Everywhere the wagon train stops for the night, the natives are polite and ready to supply what is desired. Household goods are loaned, provisions are sold at low prices, horses are granted places to graze if it is preferred to let them graze in the open. The latter rarely presents any difficulties. Usually it is necessary only to hang a bell around the neck of the leader of the herd and to make his walking more difficult by fastening hobbles to his legs. They are tired and hungry and will not easily leave a good grazing place. Also, a trained dog would easily find their trail. However,

there are cases when they take advantage of a moment of freedom to run back home. No distance and no stream will then hold them back, and they know how to find the way back to their old homes even through great forests. In my neighborhood there are two oxen that recently returned from a distance of one hundred English miles, having swum across the Missouri. A horse came back alone from Franklin (a distance of about one hundred twenty English miles)....

As soon as a traveling family has arrived at the site of its new home, it stops at the exact spot where the buildings are to stand. Then an enclosure is erected as a temporary protection for household goods and tents, which are now set up for a longer period of time. Fencing is needed to keep out the cows of neighboring settlements. The young calves are also kept in this enclosure to restrict the movement of the freely grazing cows, which return regularly and, without the slightest attention or care, constantly provide the family with milk and cream. The site for the house is chosen near a good spring or brook. A small building is immediately erected over the spring to protect it from pollution and also to provide a cool place for storing milk, butter, and meat.

The next concern is the building of a dwelling in the manner previously described. The wood for it is not hewn and, in the beginning, only a barnlike structure is planned to provide temporary shelter. A second one is built for the Negroes; then a third to be used as a barn, and a smaller building to serve as a smokehouse. The tree trunks are felled in the neighborhood and dragged up by horses or oxen. The building itself is erected with the help of neighbors if the family cannot manage it alone. Not more than four or five persons are required to erect such a building. Boards are sawed for doors and floors, or trees are split into planks, for which purpose the ash and hackberry trees (*Celtis crassifolia*, or lotus tree) are especially suitable. The hearth, together with the chimney, is built very simply of wood, lined below with a stone wall and covered at the top with clay. If the chimney is six inches higher than the top of the roof smoke will not be a bother. The danger of fire depends on the construction of the stone wall and the clay covering.

Anyone who looks upon such a dwelling with too much contempt is not familiar with the local climate. I have been in some where cleanliness and good furniture made for a very attractive appearance. Many families desire nothing else, since in other matters they live a life of plenty. The only thing that I have to criticize about the houses is that they usually have no cellar (the hut around the spring takes its place). In the summer a moldy odor rises out of the humus under the rough floor. This rarely offends one's nose but obviously endangers one's health. A floor laid by a carpenter affords perfect protection. Whoever does not want to spend that much on it can take care of the matter himself by removing the humus from the building site, or by burning cut wood from the clearing on the home site.

When the building is completed, which requires scarcely two to three weeks, the family already feels at home and the next step is to make the land arable. They usually begin by fencing in the chosen area in order to use it temporarily as an enclosed pasture for the horses and oxen which they want to keep close for convenience...

Very rarely is the cold said to interrupt outside work for more than two days. Even in January the weather is not always unfavorable for removing the roots of brush. Where horses, cattle, and

hogs, not excluding the tenderest calves, can survive the winter without shelter, the climate cannot be too harsh.

It is remarkable how quickly all these domestic animals become accustomed to their homestead. Milk cows are kept near their fenced-in calves. Therefore, when a cow is sold its calf is part of the bargain. Calves are never slaughtered, partly because they grow up without any care or expense. During the first months cows return to their young at temporarily and this seems too inconvenient to a new settler...

At the beginning an acreage of four to five Morgen is sufficient for a small family. A half Morgen may be used for garden vegetables; a second half Morgen for wheat, although it is usually too late to sow it during the first fall. This leaves three or four Morgen for maize.

In the western regions of America maize is a main product of agriculture. One could call it the wet nurse of the growing population. It serves all domestic animals as food, as it is used for fattening. The flour from it is simply called meal. On the other hand, the ground product of wheat is called flower [sic]. When boiled with milk, it makes a very nutritious healthful, and palatable food. If it is kneaded with the boiled pulp of the pumpkin, (*Concurbita pepo*) however, a bread can be baked that I prefer to wheat bread, especially if the dough is fermented by subjecting it to heat for approximately twelve hours. A dough of cornmeal mixed with water or milk and then baked produces a bread that is too dry, but with fatty foods it is quite palatable. The bread is baked in covered iron pots which are placed on a bed of glowing wood coals on the hearth and also covered with them. In most households fresh bread is prepared every day, and in general, the cooking and baking are not very inconvenient because of the constant supply of glowing coals on the spacious hearth. Bread is also made of wheat flour. As well as I remember, the cornmeal is called groats in the Rhine region. There are many varieties of maize here. The most common varieties have white and yellow grains. There are also red, blue, and red-and-blue-speckled ones, and some that are transparent like beautiful pearls. These variations are preserved by propagation. The meal from all of them is the same. The stalks grow very tall, ten to fifteen and even twenty feet.

The garden provides the best European garden produce. Peas and beans flourish beyond all expectation. Only the finer varieties of beans are found. In order to require neither poles nor a special bed they are usually planted in the maize fields where the tall cornstalks serve as support for the vines. Pumpkins, lettuce, and several other things are planted there also. In this fertile soil, without the least fertilization, all these plants grow at the same time just as luxuriously after twenty years as in the first ones. I assure you that there is no exaggeration in this statement and that I have convinced myself many times of its truth. One of my neighbors, by the name of William Hencock [Hancock], owns a farm on the banks of the Missouri that was started twenty years ago. Every year without interruption these areas have produced the richest harvests which no fertilizer can increase. In fact, the only change is that wheat can now be grown on fields that have been under cultivation for so long, whereas formerly it always fell over. However, some garden produce requires natural fertilizer. The farmer provides this in a very simple manner. He quarters his sheep overnight in the area intended for beds. Every year there is an abundance of cucumbers and melons (watermelons, and others), of course without any care. A good vegetable for the garden is the Bataten (called sweet potato here; the common potatoes are called Irish

potatoes). They require a long summer and probably would not develop well in Germany. Prepared in steam they taste like the best chestnuts. I like them very much with coffee in the morning, although so early I can rarely eat the fried meat that is usually served in addition. Like the cucumber, the plant has vines that spread over the ground.

In the second year cotton is raised also; however, north of the Missouri only for family use. On the whole, the American farmer tries to spend no money for food or drink or clothes (with the exception of real finery). Therefore, flax and hemp are cultivated, and a small herd of sheep is kept. The products are all made at home. The spinning wheel is found everywhere, and if there is no loom, the housewife or one of the daughters goes from time to time to a neighbor who owns one. Just as most men are skilled at making shoes, few women find it difficult to make not only their own clothes but also those of the men. The demands of changing fashions are not ignored.

After housekeeping has been organized and the first purchases have been paid for, the whole family lives a carefree and happy life without any cash. And this is the real reason small sums are less important here than in Europe. [In Europe] when the husband brings home a little ready money, the wife immediately needs something, and usually there is no peace and quiet in the home until it has all been spent in the nearest store, usually for tawdry finery...

If the farmer owns two slaves, he may devote his time merely to supervision without doing any of the work himself and, in this case, the housewife will have little reason to complain about keeping house. Food is abundant. Also beer can easily be brewed since enough hops grow in the forests. The apple and peach orchards found on every farm furnish cider and brandies. Although a very good whiskey can be made from corn, the apple and peach brandies are preferred. I have tasted old corn whiskey that cost thirty cents a gallon (about two Cologne quarts) and it was as good as the best French brandy. Even without slaves, the farmer lives in a manner that surpasses by far that of a European farmer of the same financial status.

For most of the harder work of housekeeping there are ways of making the labor easier. If, for instance, laundry is to be done, a fire is lighted next to a nearby brook and a kettle is hung over it. The bleaching ground cannot be far away either, and it is a matter of course that during the summer a shady place is chosen. If butchering is to be done, there are similar advantages. Usually, animals to be slaughtered, oxen as well as hogs, are shot. The animals are lured to a suitable place with a little feed and very rarely does a shot fail to serve its purpose. In this way a single person can do the entire job, although it is the custom that neighbors help each other in this work.

Finally, I must correct the erroneous opinion that the difficulty of social intercourse is the dark side of the vaunted lot of the American settler. One should dismiss from his mind the idea that the accomplishment of his purpose demands a great degree of isolation from neighbors and consider, at the same time, that a distance of from two to three English miles here is negligible, even for the female sex. No family is so poor that it does not own at least two horses. Everyone strives to make these animals, which are kept at so little expense, his first purchase. Next in line are good saddles, and it is not unusual to spend twenty-four to thirty dollars for a woman's saddle (which would suffice for three saddles on the Atlantic coast, for example, in Baltimore). Women and girls, old and young, ride (sidesaddle in the English manner) at a rapid or a slow pace

without any difficulty, and they last in the saddle as long as the men. Not a week passes in which the housewife does not visit her neighbors on horseback either alone or with a companion. On Sundays, only the weather can be a hindrance. Often the whole family leaves the house without the slightest worry about thieves. Some houses are not even provided with locks, although the kitchen utensils alone are worth more than twenty dollars. Horse racing, cock fights, and target shooting are here, as in North America in general, the most frequent occasions for the gathering of men.

MISSOURI WILDERNESS. June 1826. In the western part of North America the population, in comparison to the amount of fertile, cheap land, is too sparse to permit anyone who either cannot or does not wish to be actively engaged in physical labor to carry on farming on a large scale without slaves. Even if one wants to supply one's own needs, domestic affairs would suffer because of the lack of whites who would have any desire to be hired for this purpose. But one who could decide to hire a slave would probably not hesitate to buy him.

The usual price of a male slave from nineteen to thirty years of age is four to five hundred dollars. The price of a female slave is a third less. Sometimes there is a guarantee against running away; often not it is always advisable to take this into consideration.

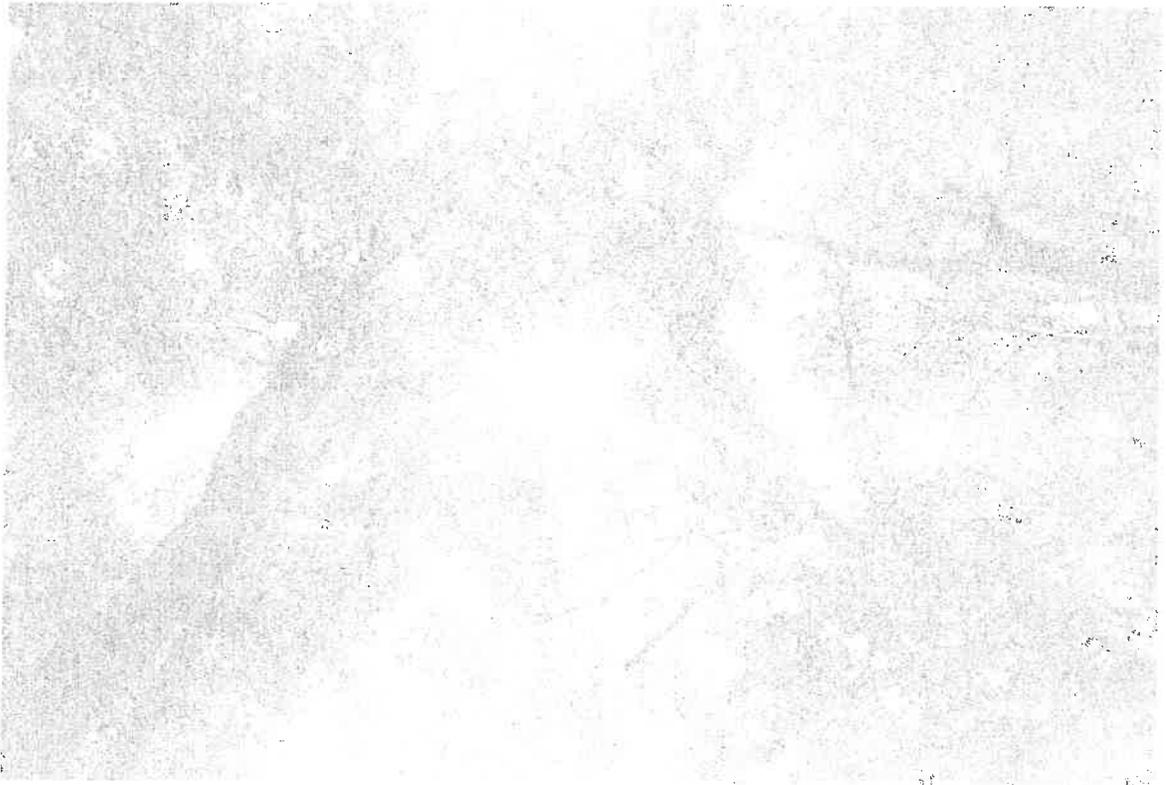
MISSOURI. March 1827. *Financial requirements for emigration; economic prospects for frontier families.*

How many men are there in Germany who have funds amounting to four to six thousand *Thaler* without any other prospect than to use them for living expenses! But this sum is more than abundant to provide a happy life for an entire family on the banks of the Missouri, even if eight hundred to a thousand *Thaler* should be spent for traveling expenses, provided that they did not lack guidance. Such a financial status is very common in Germany among persons who are forced by what is called propriety and decorum to make expenditures that, without providing pleasure for the present veil the future with anxiety. With the above-mentioned sum the immigrant can buy two adult slaves (one male and one female), which cost about twelve hundred Prussian *Thaler*, and establish himself in such a manner that he can live more happily and, especially in regard to the future lot of numerous descendants, with many less worries than if he possessed six times that amount in Germany. But if he is capable of cultivating his own soil, a thousand Prussian *Thaler* would more than suffice, except for traveling expenses. I am estimating 150 to 200 *Thaler* for eighty Morgen of land; 45 to 60 *Thaler* for clearing and fencing from five to seven Morgen; 120 *Thaler* for two horses; 26 *Thaler* for two cows 12 *Thaler* for two sows; 100 for the buildings; a like amount for goods and chattels. That makes at the highest estimate 618 *Thaler*. So almost 400 *Thaler* are left for other, less essential things and for the ability to live without adhering quite so closely to a strict budget. If 200 *Thaler* more are spent on the dwelling, the immigrant is surely established far more comfortably than is usual for peasants who cultivate their own fields in Germany. A quarter of a mile from me there lives a farmer by the name of Jacob Haun. Seven years ago he began to establish a homestead. Because he possessed scarcely a hundred *Thaler*, he at first lived on state property and there tried to earn enough for the purchase of 160 Morgen. Then he continued to farm on his own property after the usual fashion and prospered, so that in seven years, without any assistance, he acquired a fortune of three thousand *Thaler*. Meanwhile his wife bore him five children, and now his household

annually consumes over twelve hundred pounds of pork, an oxen weighing five to six hundred pounds, and several dozen roosters and hens. Also, at least ten to twelve deer are killed and a large number of turkeys. (No powder is used for partridges; it is left to the children to catch them in traps.) Who would believe that so much meat could be consumed in one household of two adults and five children, of whom the oldest is scarcely six years? Some, of course, is contributed to hospitality. But most of it is due to the extravagant use of an article of food that is almost cheaper here than the most common vegetables in Germany.

There is much complaint in Europe about the decrease in the number of marriages, and superficial moralizers therefore declaim about immorality without considering that need is the true cause of this phenomenon, whereas immorality is merely the result, even the inevitable result. Only a thoughtless person can indulge in propagation without considering the future of his children. Among the low class of people, marriages have not decreased, although their morals are worse than ever. This is a deplorable, unnatural situation in our poor fatherland, which will never change automatically. The only charitable aid is the general promotion of emigration. There is no more sacred duty for the states of Germany now than to provide efficient guidance for these emigrations.

# APPENDIX B-2





MISSOURI  
RED BOOK-1913  
DISTRIBUTED 1914



*Bureau of Labor Statistics:*

*John Fitzpatrick, Commissioner*

*Edmundson, Director of Statistics; H. H. Bailey, Deputy Commissioner*

*Jefferson City, Mo.*



# Selections from the 1913 Missouri Red Book

The following pages are the Jefferson County pages selected from the 1913 edition of The Missouri Red Book produced as the thirty-fifth annual report from the Missouri Bureau of Labor Statistics.

While the Jefferson County section contains only a few pages, a wealth of detailed information is provided concerning the county in 1913.

Please note: Pages can be enlarged to read small text.

This edition Copyright ©2004  
by Hearthstone Legacy Publications

Hearthstone Legacy Publications  
12383 Hearthstone  
Higginsville, MO 64037

[www.HearthstoneLegacy.com](http://www.HearthstoneLegacy.com)

THIRTY-FIFTH ANNUAL REPORT

# Bureau of Labor Statistics

STATE OF MISSOURI

---

MISSOURI "BOOSTER" EDITION

*Fiscal Year Ending November 5, 1913*

DISTRIBUTED IN 1914

---

*Resources, Advantages and Opportunities of a Thriving  
Commonwealth, 1913-14.*

*Surplus Products and Manufacturing, Missouri Counties, 1912.*

*Organized Labor of Missouri, 1912-13-14.*

*Other Commercial, Industrial, Financial, Social, Economical  
and Educational Facts and Figures, 1913-14.*

---

PREPARED AND PUBLISHED BY THE

**Missouri Bureau of Labor Statistics**

JOHN T. FITZPATRICK, Commissioner

A. T. EDMONSTON, Supervisor of Statistics

J. L. BRADLEY, Deputy Commissioner

JEFFERSON CITY, MISSOURI

1913-1914



PROFUSELY ILLUSTRATED

THE HUGH STEPHENS PRINTING COMPANY

JEFFERSON CITY, MO.



---

## JEFFERSON COUNTY.

---

### COUNTY SEAT—HILLSBORO.

Jefferson County, with the Mississippi River forming the eastern border, and the rushing Meramec the northern, is one county south of St. Louis County. A huge glass manufactory at Crystal City and Festus, two towns adjoining one another, has made this county a manufacturing center. The silica which is used for glass comes from this and Franklin County. Ninety per cent of the surface of the county contains traces of mineral deposits. Zinc and lead are being mined. At Herculanum is a huge lead smelter where most of the lead ore of St. Francois County is refined and placed in commercial shape before being sent to market. Large lime plants at Kimmswick and other points have helped to give Jefferson County fame for its manufactories.

Agriculture, horticulture, stock and fruit raising are the chief pursuits of the farmers. Shipments of milk and butter are made morning, noon and night into St.

*Bureau of Labor Statistics, 1913-14.*  
*Jefferson City, Missouri.*

Louis city which is only a few miles to the north. Truck farmers haul their products twice a week to this market and receive a price which well pays them for their toil and the capital invested in the industry. Large quantities of straw and other varieties of berries are grown every spring for the same market.

At DeSoto, another manufacturing town of the county, are large Missouri Pacific car shops which give employment to several hundred men. The mining of silica, barytes, pottery and fire clay furnish employment to another large force of workmen. At Festus and Silica are the famous glass sand deposits. The limestone and shale of Kimmswick are sent into St. Louis County to be turned into cement.

#### DeSoto an Industrial Center.

Although Hillsboro is the county seat, DeSoto is the most populous town. It has a shoe factory, in addition to its other manufactories. Festus is fast gaining in population, having the advantage of three railroads, the Frisco, the Iron Mountain and Mississippi River & Bonnie Terre. A few miles east is the Mississippi River. Other information concerning this county follows:

Railroads traversing county—Mississippi River & Bonné Terre; St. Louis, Iron Mountain & Southern; St. Louis & San Francisco.

Cities, towns and villages: Barnhart, Byrnesville, Cedar Hill, Crystal City, Danby, DeSoto, Dittmer, Festus, Fletcher, Flucom, Frumet, Grubville, Hematite, Herculeaneum, High Ridge, Hillsboro, Horine Station, House Springs, Kimmswick, Knorpp, Melzo, Morse Mill, Oermann, Pevely, Plattin, Riverside, Rush Tower, Scheve, Selma, Silica, Sulphur Springs Landing, Valles Mines, Victoria, Vineland, Wickes.

Water—Cisterns, wells and springs of pure water; Meramec River upon the north line; Big River and many creeks flow through the county; Mississippi River to the east.

Roads—Rock, gravel and dirt; all in good condition; an increasing interest in building of better roads.

Timber—All varieties of oak, hickory, ash, walnut, sycamore and cottonwood.

Fuel—An ample supply; coal, \$3 per ton; wood, \$3 per cord.

Land—The bottoms have a black loam and are very productive; hills more or less of a sandy clay. The land is somewhat broken by a succession of hills and valleys. Improved farms are in a high state of cultivation and can be purchased from \$50 per acre up.

Labor—Farm labor ranges in price from \$25 to \$30 per month.

Social advantages—Population, 27,878; American, Irish, German, Bohemian and English. Churches of various denominations and 88 schools well distributed over the county. Many enterprising manufacturing establishments are represented. The people are hospitable, refined and industrious. For further facts and figures consult the statistical tables which follow:

#### POPULATION STATISTICS, JEFFERSON COUNTY.

Population last Federal Census; color, sex and nativity of inhabitants and birthplace of foreigners; other facts.

Total population.....	27,878	<i>Foreign Nationalities—</i>		Italy.....	149
Urban ".....	7,277	Austria.....	178	Mexico.....	7
Rural ".....	20,601	Belgium.....	10	Roumania.....	1
White ".....	26,313	Canada.....	25	Russia.....	39
Negro ".....	1,565	Denmark.....	8	Scotland.....	13
Native white.....	24,231	England.....	150	Sweden.....	13
Foreign born.....	2,082	France.....	57	Switzerland.....	67
Male inhabitants, number.....	14,897	Germany.....	1,036	Turkey.....	31
Female ".....	12,981	Greece.....	33	Wales.....	2
Males of voting age.....	8,004	Holland.....	4	All others.....	13
Dwellings, number.....	5,807	Hungary.....	118		
Families, ".....	5,981	Ireland.....	130	Total.....	2,082

*Missouri Resources and Advantages.  
Jefferson County Opportunities.*

329

**SURPLUS SHIPMENTS, JEFFERSON COUNTY, 1912.**

The following table gives the commodities shipped from the county in 1912, as supplied by the railroad and express agents on whose accuracy and care it depends how complete they are. Nothing sold and consumed locally is included:

<i>Live Stock—</i>					
Cattle, head.....	13,156				
Hogs, head.....	12,180				
Horses and mules, head.....	258				
Sheep, head.....	1,410				
<i>Farm Crops—</i>					
Wheat, bushels.....	120,800				
Corn, bushels.....	5,004				
Oats, bushels.....	280				
Clover seed, bushels.....	51				
Millet seed, bushels.....	4				
Hay, tons.....	90				
Straw, tons.....	10				
Cowpeas, bushels.....	30				
Nuts, pounds.....	7,616				
<i>Mill Products—</i>					
Flour, barrels.....	12,335				
Corn meal, pounds.....	31,770				
Bran, shipstuff, pounds.....	148,108				
Feed, chops, pounds.....	79,416				
<i>Mine and Quarry Products—</i>					
Zinc ore, tons.....	1,085				
Lead ore concentrates, tons.....	47				
Barytes (tuff), tons.....	724				
Gravel and ballast, cars.....	360				
Sand, tons.....	108,200				
Copper ore, pounds.....	4,107,840				
Stone, tons.....	2,050				
Macadam, tons.....	49				
Fig lead, tons.....	620,827				
<i>Forest Products—</i>					
Lumber, feet.....	82,500				
Logs, feet.....	33,000				
Walnut logs, feet.....	49,500				
Railroad ties.....	134,500				
Fence and mine posts.....	7,000				
Cordwood, cords.....	816				
Cooperage, cars.....	1				
Charcoal, cars.....	284				
<i>Farmyard Products—</i>					
Poultry, live, pounds.....	322,970				
Poultry, dressed, pounds.....	51,300				
Eggs, dozen.....	250,080				
<i>Stone and Clay Products—</i>					
Brick, cars.....	80				
Lime, tons.....	21,056				
<i>Packing House Products—</i>					
Hides and pelts, pounds.....	61,048				
Dressed meats, pounds.....	230,575				
Tallow, pounds.....	15,535				
Lard, pounds.....	2,793				
<i>Flowers and Nursery Products—</i>					
Nursery stock, pounds.....	280				
Cut flowers, pounds.....	5,634				
<i>Dairy Products—</i>					
Butter, pounds.....	424,146				
Ice cream, gallons.....	2,640				
Milk and cream, gallons.....	82,242				
Cheese, pounds.....	13,518				
<i>Wool and Mohair—</i>					
Wool, pounds.....	10,841				
<i>Liquid Products—</i>					
Wine, gallons.....	10				
Cider, gallons.....	188				
Natural mineral water, gals.....	15,940				
<i>Fish and Game Products—</i>					
Game, pounds.....	1,042				
Fish, pounds.....	5,637				
Furs, pounds.....	1,021				
<i>Medicinal Products—</i>					
Roots and herbs, pounds.....	2,422				
Ginseng, pounds.....	36				
<i>Vegetables—</i>					
Vegetables, pounds.....	6,340				
Potatoes, bushels.....	248				
Tomatoes, bushels.....	132				
Onions, bushels.....	636				
Canned vegetables and fruits, pounds.....	2,605				
<i>Fruits—</i>					
Miscellaneous fresh fruits, lbs.....	1,492				
Melons.....	2,500				
Strawberries, crates.....	6,952				
Apples, barrels.....	1,500				
Raspberries, crates.....	34				
Blackberries, crates.....	9				
Plums, baskets.....	34				
Grapes, baskets.....	198				
Peaches, baskets.....	15				
Pears, baskets.....	345				
<i>Apiary and Cane Products—</i>					
Honey, pounds.....	272				
Sorghum molasses, gallons.....	143				
Maple syrup, gallons.....	1,675				
<i>Unclassified Products—</i>					
Junk, cars.....	31				
Les, tons.....	28				
Glass, cars.....	608				
Slag, tons.....	1,005				

**ASSESSED VALUATION, JEFFERSON COUNTY, 1913.**

Real estate.	Number of.	Assessed valuation.	Average assessed value.
Land, acres.....	397,304	\$3,191,640	\$8.08
Town lots.....	8,632	1,194,680	138.40
Total assessed valuation of real estate.....		\$4,386,320	
<b>Personal property.</b>			
Horses.....	5,854	\$186,665	\$31.89
Mules.....	2,762	102,480	37.10
Asses and jennets.....	45	2,200	49.11
Cattle.....	13,614	138,885	10.20
Sheep.....	2,004	2,235	1.14
Hogs.....	14,415	32,235	2.24
All other live stock.....	5,185	1,925	33.00
Money, notes, bonds, etc.....		652,045	
Bank stock.....		185,425	
All other personal property.....		332,120	
Total valuation of personal property.....		\$1,636,265	
Total taxable wealth.....		\$6,022,585	

**STATISTICS, PUBLIC SCHOOLS, JEFFERSON COUNTY, 1913-14.**

No. of districts in county.....	88	Am't spent for teachers' salaries.....	\$80,531.77
No. of teachers in county.....	146	Am't spent for incidental expenses.....	8,936.81
Enumeration of county.....	8,739	Permanent school fund.....	73,077.23
		Allotment of State school funds.....	15,012.04

*Bureau of Labor Statistics, 1913-14.*  
*Jefferson City, Missouri.*

**PRODUCTION OF STAPLE FARM CROPS, JEFFERSON COUNTY, 1912.**

Average yield per acre; acres planted; total yield for county.

Staple.	Av. yield per acre.	Acres planted.	Total yield in bushels.	Staple.	Av. yield per acre.	Acres planted.	Total yield in bushels.
Wheat.....	12	24,353	292,236	Corn.....	35	34,056	1,191,960
Oats.....	33	4,043	133,419	Hay and forage..	.....	16,532	29,757

**RATE OF TAXATION, JEFFERSON COUNTY, 1913-14.**

The following table shows the rate of taxation on each \$100 of assessed valuation. Property is assessed, generally, from one-half to one-fifth of its actual worth, depending upon the extent of the returns made; the character of the property; its location and whether the holding is bringing in an income, and the amount of the same:

County levy.....	\$ .30	Municipal tax.....	\$1.10
Good roads.....	.35	Total am't of county indebtedness..	**
County school.....	.6517	Municipal or twp. indebtedness....	**
School tax in largest city.....	1.15	*None reported by county assessor.	

TABLE A.		TABLE B.		TABLE C.		TABLE D.		TABLE E.		TABLE F.	
<b>Population</b>	27,878	<b>Sheep:</b>	6,053	<b>LIVE STOCK PRODUCTS.</b>		<b>Hay and forage:</b>	29,534	<b>Orchard fruits:</b>	269,155	<b>DOMESTIC ANIMALS NOT ON FARMS.</b>	484
<b>Number of farms.</b>	3,928	Rams, ewes and wethers.	3,928	<b>POULTRY AND BEES.</b>		Total.	11,345	Total.	1,984,739	Value of domestic animals.	\$89,932
<b>Color and nativity of farmers:</b>	2,217	Spring lambs.	2,125	Number of poultry of all kinds.	177,750	All tame or cultivated grasses.	7,878	Apples.	133,390	Number reported.	484
Native white.	2,486	Value.	\$22,692	Value.	\$104,378	Timothy alone.	2,040	Peaches and neckarines.	110,398	Value of domestic animals.	\$89,932
Foreign-born white.	17	Goats:	197	Number of colonies of bees.	1,104	Timothy and clover mixed.	2,307	Plums and prunes.	11,816	Total number.	624
Negro and other nonwhite.	17	Value.	\$540	Value.	\$2,794	Clover alone.	11,523	Cherries.	8,205	Value.	\$16,053
<b>Number of farms, classified by size:</b>	6			<b>TABLE E.</b>				Small fruits:	428,582	Number of dairy cows.	390
Under 3 acres.	105			Total.	\$2,195,193			Total.	1,984,739	Total number.	606
3 to 9 acres.	122			Cereals.	1,250,845			Strawberries.	445	Value.	\$56,387
10 to 19 acres.	398			Other grains and seeds.	11,333			Blackberries and dewberries.	247	Number of mature horses.	588
20 to 49 acres.	708			Hay and forage.	380,086			Nuts.	597,206	Mules and asses and burros:	
50 to 99 acres.	795			Vegetables.	199,261			Total number.	113	Total number.	113
100 to 174 acres.	819			Fruits and nuts.	238,234			Value.	\$13,357	Value.	\$3,752
175 to 259 acres.	213			All other crops.	115,464			Total number.	509	Total number.	154
260 to 499 acres.	50			<b>SELECTED CROPS.</b>				Value.	\$8,752	Value.	\$415
500 to 999 acres.	4			(Acres and Quantity.)				Number of dairy cows.	390	Number of mature mules.	78
1,000 acres and over.	4			Total.	73,669			Total number.	606	Number of mature horses.	588
<b>LAND AND FARM AREA, ACRES.</b>				Corn.	1,831,601			Value.	\$56,387	Mules and asses and burros:	
Approximate land area, acres.	435,840			Oats.	4,640			Total number.	113	Value.	\$3,752
Land in farms, acres.	355,272			Wheat.	90,025			Number of mature mules.	78	Total number.	509
Improved land in farms, acres.	172,717			Rye.	371,298			Value.	\$8,752	Total number.	154
Woodland in farms, acres.	168,406			Kafir corn and milo malze.	25			Number of dairy cows.	390	Value.	\$415
Other unimproved land in farms, acres.	14,149			Other grains and seeds.	403			Total number.	606	Value.	\$56,387
Per cent of land area in farms.	81.5			Dry peas.	166			Number of mature mules.	78	Total number.	154
Per cent of farm land improved.	48.6							Value.	\$8,752	Value.	\$415
Average acres per farm.	130.6										
Average improved acres per farm.	63.5										
<b>VALUE OF FARM PROPERTY.</b>											
All farm property.	\$14,466,508										
Land.	9,158,980										
Buildings.	2,939,725										
Implementa and machinery.	475,747										
Domestic animals, poultry and bees.	1,892,086										
Per cent of value of all property in—											
Land.	63.3										
Buildings.	20.3										
Implementa and machinery.	3.3										
Domestic animals, poultry and bees.	13.1										
<b>Average values:</b>											
All property per farm.	\$5,319										
Land and buildings, per farm.	4,448										
Land per acre.	25.78										
<b>DOMESTIC ANIMALS.</b>											
(Farms and Ranges.)											
Farms reporting, domestic animals	2,660										
Value of domestic animals.	\$1,784,914										
<b>Cattle:</b>											
Total number.	21,797										
Dairy cows.	12,636										
Yearling heifers.	1,461										
Calves.	2,427										
Yearling steers and bulls.	3,757										
Other steers and bulls.	781										
Value.	\$568,891										
<b>Horses:</b>											
Total number.	7,296										
Mature horses.	6,387										
Yearling colts.	619										
Spring colts.	290										
Value.	\$687,752										
<b>Mules:</b>											
Total number.	2,482										
Mature mules.	2,187										
Spring colts.	295										
Value.	\$301,525										
<b>Asses and burros:</b>											
Number.	43										
Value.	\$12,375										
<b>Swine:</b>											
Total number.	28,421										
Mature hogs.	14,968										
Spring pigs.	13,453										
Value.	\$191,139										

arm Property; Live Stock; Principal Crops; Production of and Value; Farms and Domestic Animals not on Farms; Number and Value; Federal Cens.

## JEFFERSON COUNTY, 1913.

At DeSoto is a commercial club, which is very active in looking after the interests and prosperity of Jefferson County. The farmers of the county belong to organizations which see that their products are properly and quickly marketed and that their welfare is taken care of.

The accompanying map was supplied through the courtesy of the Jefferson County Court; James H. Winer, Presiding Judge and Wm. Schwalbert and Wm. C. Kerchoff, Associate Judges and Wm. Philiard, County Clerk and Joseph Hoeken of Hillsboro.

Dr. J. Scott Wolf, a dental surgeon of Festus, represented this county in the 1913 General Assembly, and did much to have enacted legislation which was needed in this end of Missouri.

The newspapers of the county are: Jefferson Democrat and Jefferson County Record, Hillsboro; Festus News and Tri-City Independent, Festus; DeSoto Press, DeSoto; weeklies, and the Jefferson County Republican, a daily of DeSoto.

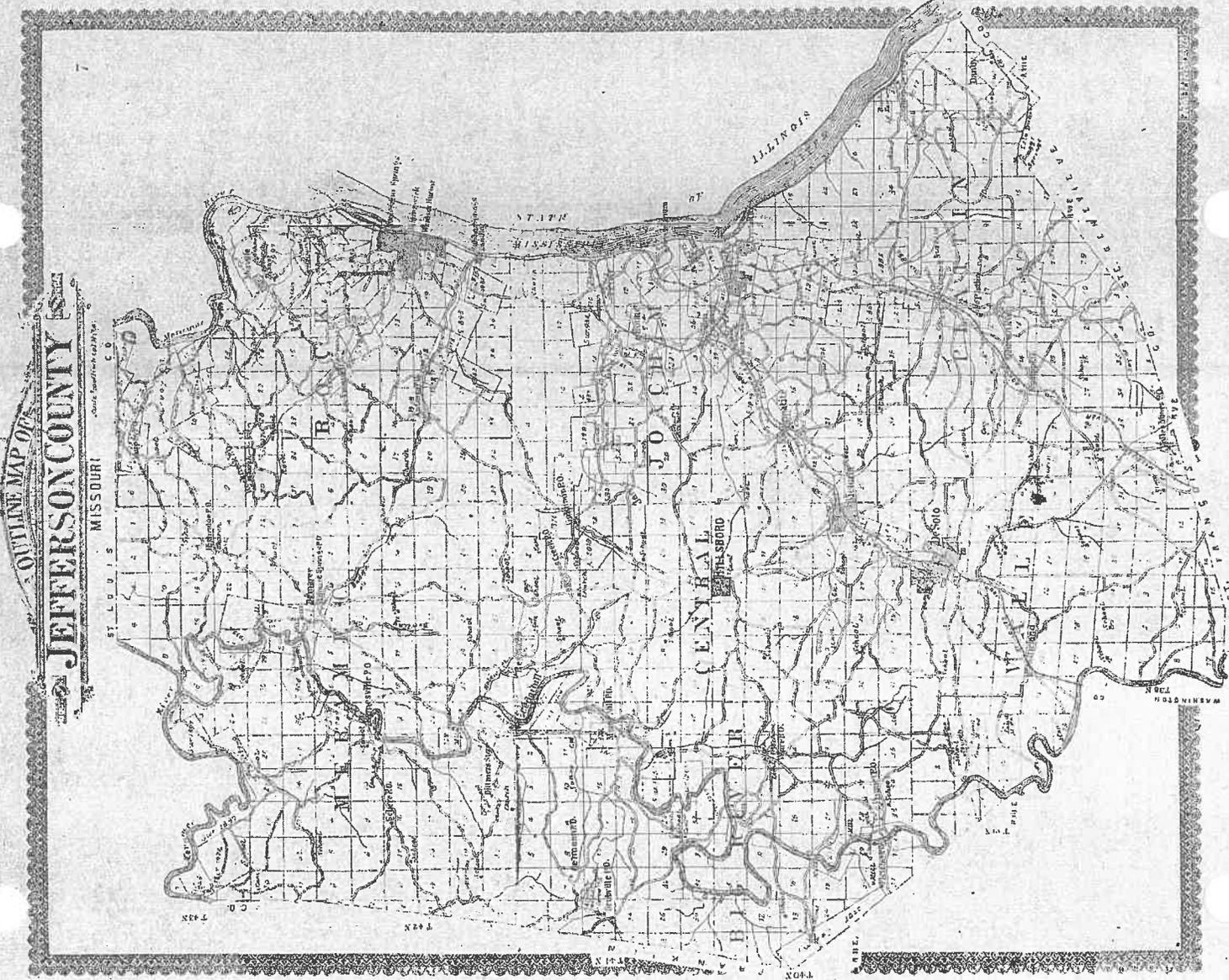
Jefferson County is one of the heavy strawberry growers of Missouri, the output being marketed chiefly in St. Louis City, which is a few miles to the north. A proposed electric railway which will pass through Hillsboro, when built, will open up for the St. Louis market a very fertile portion of Jefferson County.

The Meramec River, which forms a portion of the northern border of Jefferson County, and Big River offer water power facilities to manufacturers looking for such an advantage. Plenty of fuel wood can be had in the vicinity of Hillsboro for \$3.50 a cord. Timber which is still standing is suitable for lumber and ties. Hillsboro would support a cannery and a lighting plant which would use electricity developed by a water power plant. There is some unimproved land in the county which can be had for \$3 an acre, but it is better for settlers to purchase a higher grade, which sells from \$10 up. It costs from \$5 to \$10 an acre to clear this land.

Jefferson County at one time had many steamboat landings along the Mississippi River. A government dredge to remove sand bars could easily reopen these former ports to commerce. The churches of the county are: ten Presbyterian, nine Catholic; twenty-five Methodist; 25 Baptist; five Christian; twelve Lutheran; one Unitarian and five miscellaneous denominations.

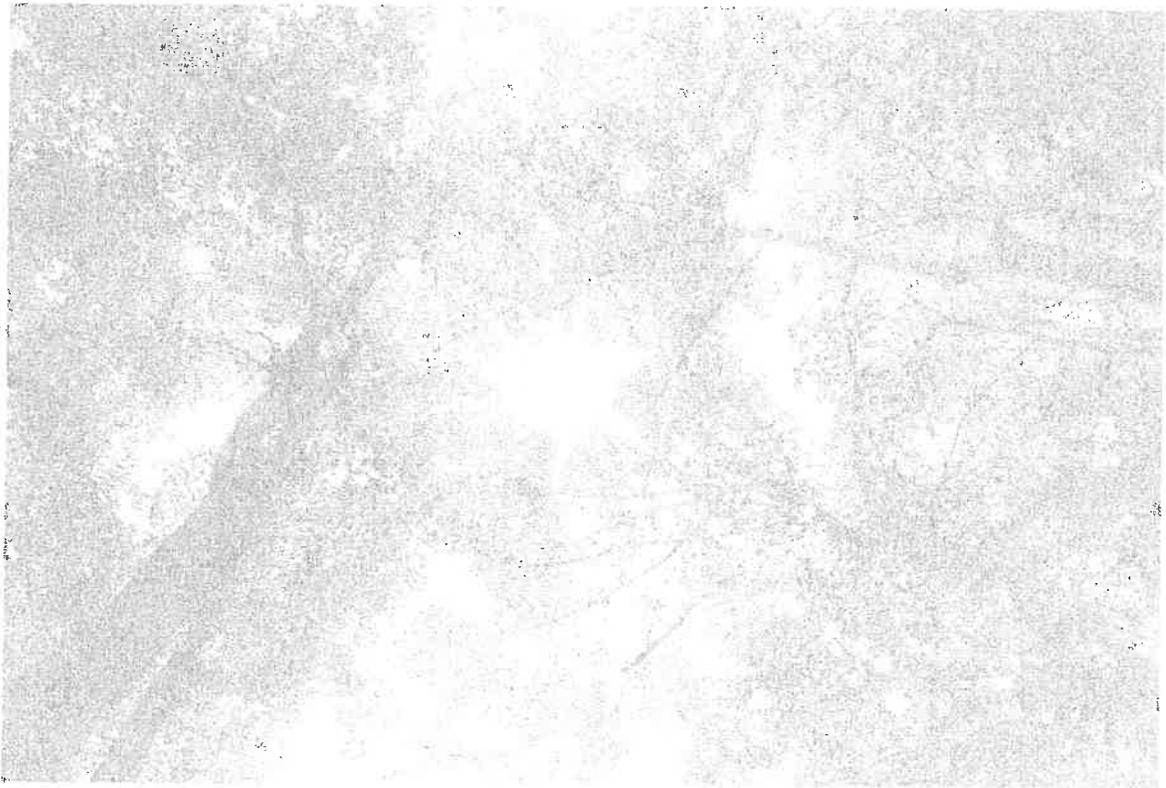
Frank Warner, Secretary of the DeSoto Local of the Farmers Educational and Co-operative Union of America, furnishes information that a cannery would be well supported there. Other manufacturers are offered inducements to locate in this industrial center.

Jefferson County is free of swamp land, the major part being considerably higher than the Mississippi River, and is therefore well drained. There are 1,000 miles of dirt and other roads in the county. Probably 150 miles have a surface of either macadam or gravel. Desirable immigrants who come into the county to help develop the unimproved portions will receive a hearty welcome from the inhabitants.



# **APPENDIX C**

## **1 through 11**



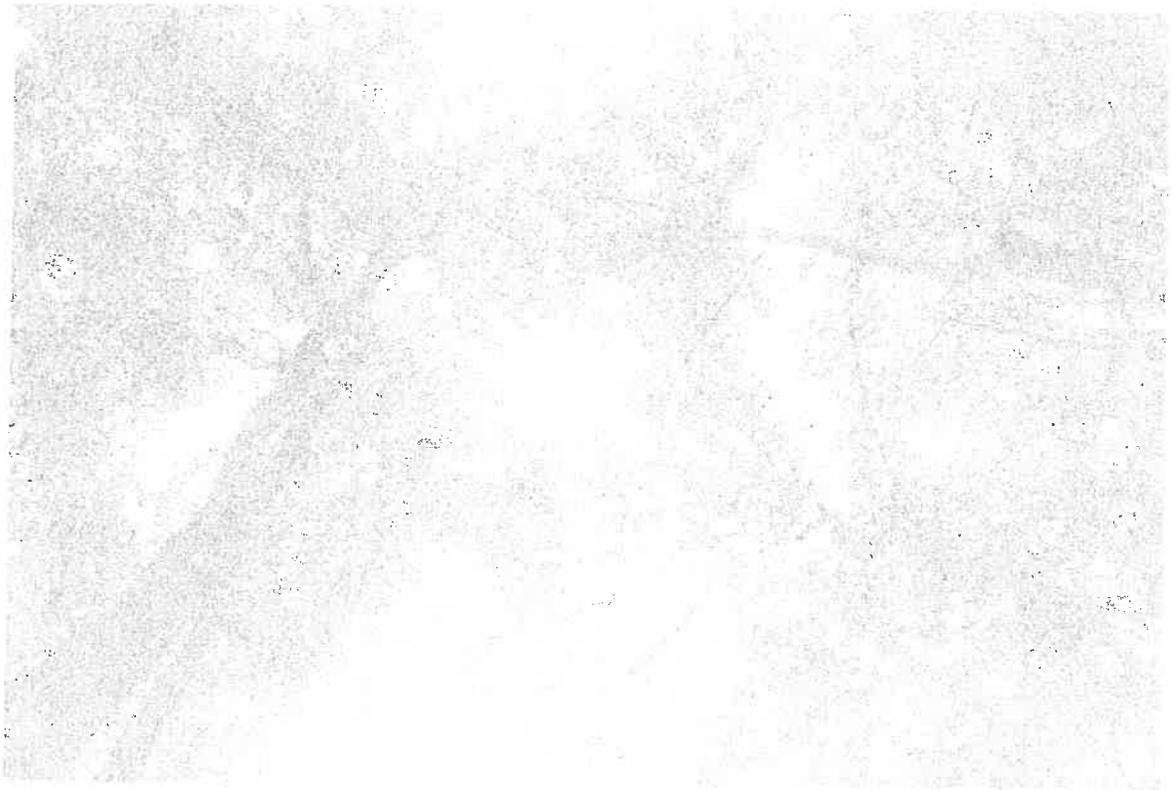


## Bibliography

1. Lucky Thirteen: Money Magazine says Arnold is one of the 25 best affordable cities to live in the United States by Trish Wallace, staff writer, Jefferson County Journal, July 16, 2008.
2. 25 Best Affordable Cities to Live in the United States, MONEY Magazine, August 2008.
3. Understanding Type 2 Diabetes, Who Gets Diabetes. Diabetes.Com by GlaxoSmithKline.
4. Pope warns against environmental damage, says it burdens the world's poor. Catholic News Service, Pope-Ecology, August 28, 2006.
5. Vatican lists "new sins," including pollution. Thomson Reuters, by Philip Pullella, March 10, 2008.
6. History of Jefferson County, Missouri, published in 1888 by the Goodspeed Publishing Co., copyrighted and reprinted by Hearthstone Legacy Publications 12383 Hearthstone Higginsville, Mo 64037
7. Chicago Alleys go Green, by Eye on Earth, a joint project of the World Watch Institute and the Blue Moon Fund.
8. Heat Island Effect. U.S. Environmental Protection Agency website. [www.epa.gov/hiri/](http://www.epa.gov/hiri/)
9. The American Society of Landscape Architects internet site ASLA.org, an excerpt announcing a summary of their white paper on their sustainable initiatives.
10. Energy bill, on its way to Bush, aims to make U.S. greener, by Richard Simon, Los Angeles Times, Washington, Copyright 2004 LexisNexis, a division of Reed Esvier, Inc.
11. Utah closes government buildings on Fridays, moves to four-day work week. Consulting-Specifying Engineer, July 10, 2008, monthly on-line email report.



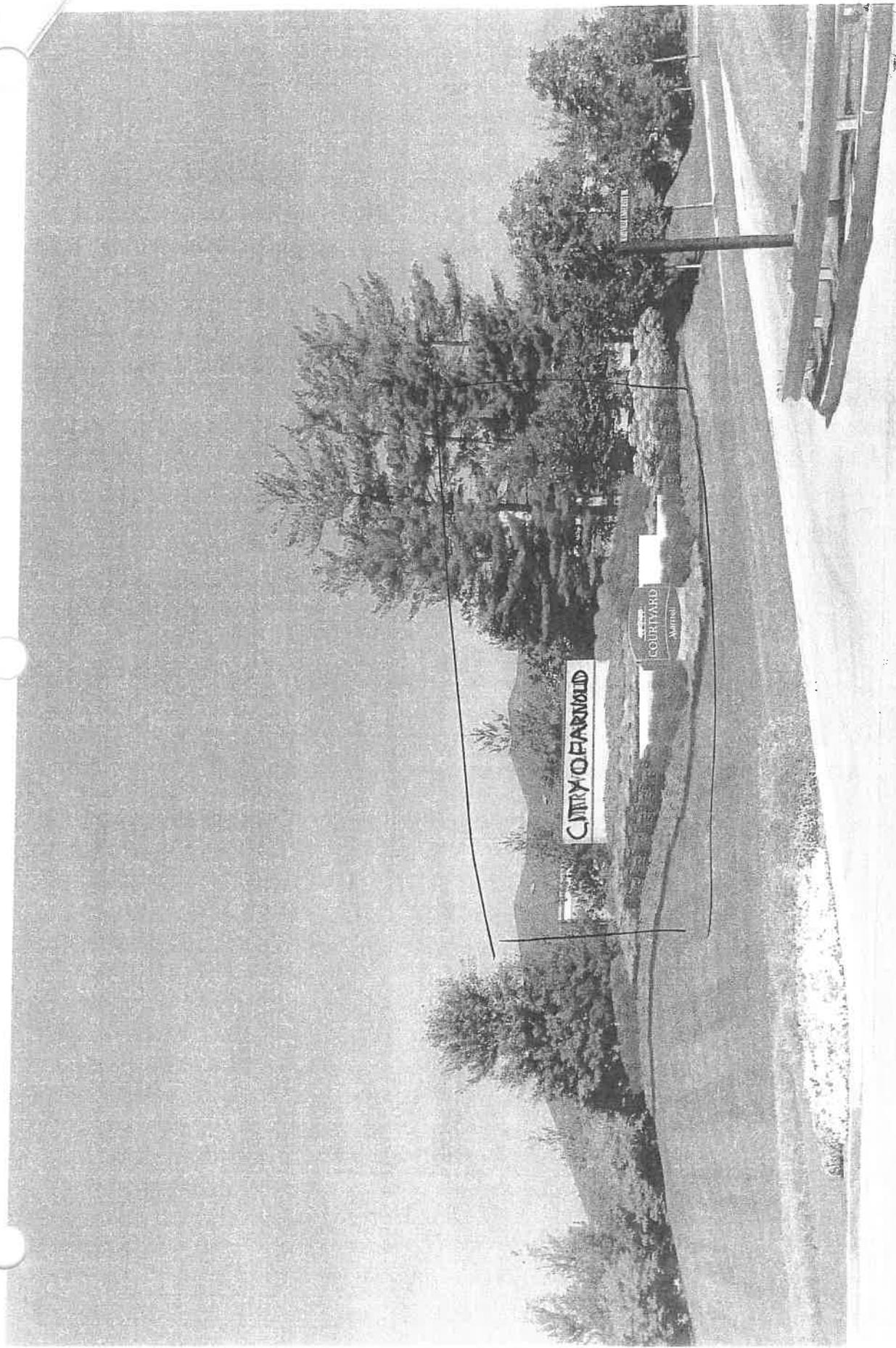
# APPENDIX D-1

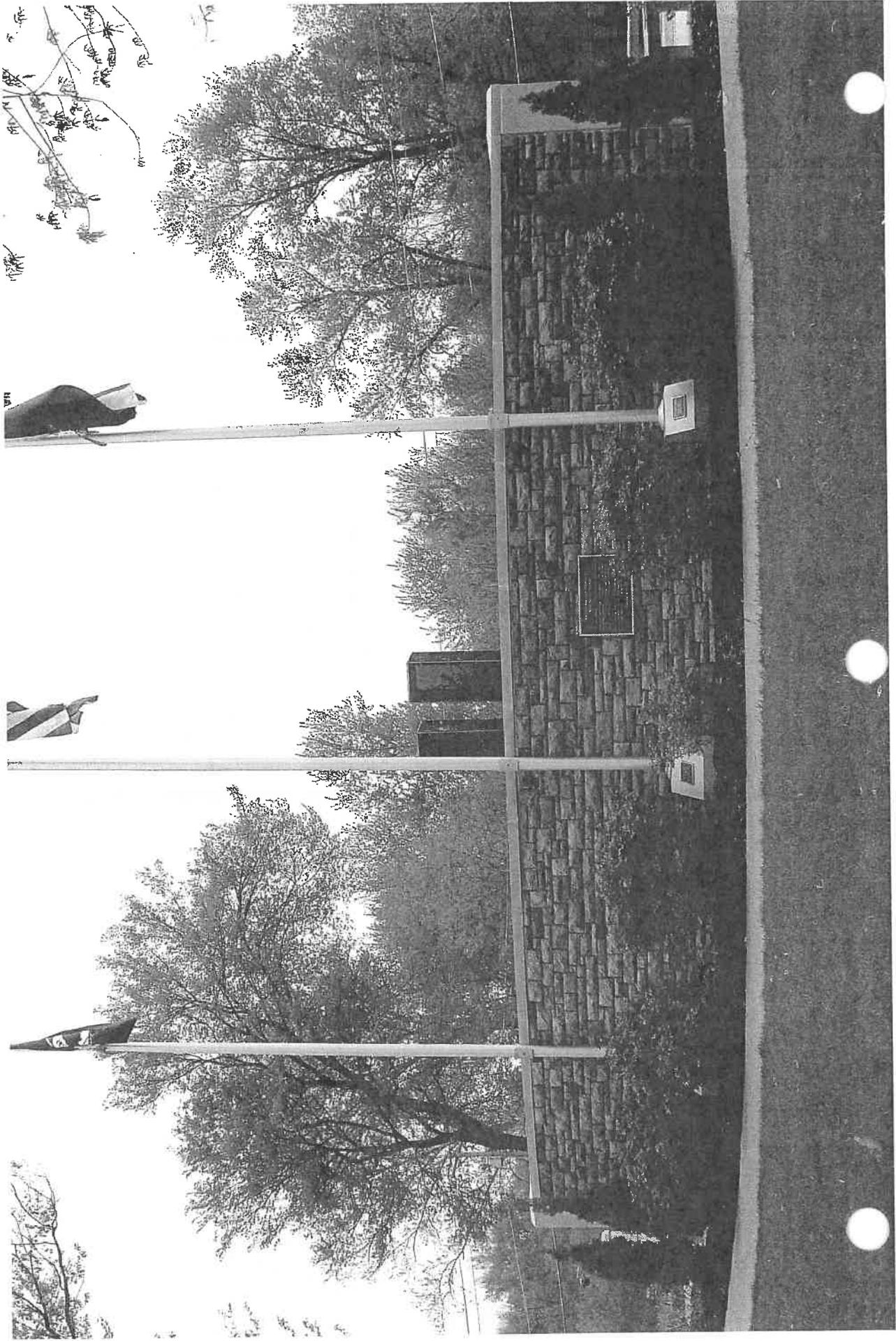




PROPOSED SIGN

DUKE BRICKMAN —





11/10/12

## Brookfield, WI : City Entrance Sign

[Brookfield, WI detailed profile](#)

[Brookfield, WI houses data](#)

[Wisconsin for](#)

