# *The Loess Hills Scenic Byway*
## *Corridor Management Plan*

- **INTRODUCING THE PLAN**
- **UNDERSTANDING THE RESOURCES**
- **UNDERSTANDING TOURISM**
- **CORRIDOR DEVELOPMENT ACTIONS**

**December 2008**

A MOSAIC OF ROADS THROUGHOUT THE HEART OF THE LOESS HILLS REGION OF WESTERN IOWA

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**THE LOESS HILLS OF IOWA**
*An American Treasure Unique in the World*

# Contents

**PROJECT CREDITS** ..... I

**CONTENTS** ..... II

**FORWARD** ..... IV

**PREFACE AND ACKNOWLEDGEMENTS** ..... IX

**LOESS HILLS SCENIC BYWAY *CORRIDOR MANAGEMENT PLAN* SUMMARY** ..... XIV

**INTRODUCING THE PLAN** ..... 1-1
- Section Contents ..... 1-1
- Iowa's Loess Hills - "An American Treasure!" ..... 1-2
- Loess Hills Scenic Byway ..... 1-5
- Loess Hills Scenic Byway *Corridor Management Plan* ..... 1-13
- Stakeholders of the *Corridor Management Plan* ..... 1-16
- The *Corridor Management Plan* Document ..... 1-18

**UNDERSTANDING THE RESOURCES** ..... 2-1
- Section Contents ..... 2-1
- Intrinsic Qualities and Scenic Byways ..... 2-2
- Intrinsic Qualities and the Loess Hills Scenic Byway ..... 2-3
- Understanding the Natural Quality ..... 2-5
- Understanding the Archeological Quality ..... 2-15
- Understanding the Scenic Quality ..... 2-23
- Understanding the Historic Quality ..... 2-29
- Understanding the Cultural Quality ..... 2-35
- Understanding the Recreational Quality ..... 2-40
- Understanding Human Quality ..... 2-47

**THE LOESS HILLS OF IOWA**
*An American Treasure Unique in the World*

**UNDERSTANDING TOURISM ..... 3-1**
Section Contents ..... 3-1
Tourism and Scenic Byways ..... 3-2
Tourism and the Loess Hills Scenic Byway ..... 3-3
Economic Impact of Tourism in the Loess Hills ..... 3-4
Marketing Tourism in the Loess Hills ..... 3-7

**CORRIDOR DEVELOPMENT ACTIONS ..... 4-1**
Section Contents ..... 4-1
Introduction ..... 4-2
Corridor Amenities and Site Facilities ..... 4-3
Sign Plan ..... 4-18
Bicycle Routes ..... 4-49
Interpretative Programs and Activities ..... 4-58
Land Use Strategies ..... 4-62
Assessing Future Impacts ..... 4-69
Managing Roadsides and Entryways ..... 4-74
Marketing the Intrinsic Qualities ..... 4-76
Involving and Communicating With the Public ..... 4-77
Implementation ..... 4-80

**REFERENCES ..... 5-1**

**THE LOESS HILLS OF IOWA**
*An American Treasure Unique in the World*

# Forward

I have always been a walker. My earliest memories trace the route of my stroller as my mother pushed me hither and yon on her daily errands. Soon sidewalks became my own trails into the world, the pathways where my tricycle could proceed with a soothing click, click, click over familiar cracks or where my fleet little-girl legs could propel me forward with amazing swiftness. Sometimes they led me to the domains of friends. Sometimes to meet my father as he walked home from work. Sometimes, even in a good-sized city, they became pathways into the wild, for I knew just where the elm roots uplifted the sidewalks forming miniature mountains that exposed the raw earth below, and where clumps of wild violets and daisies were wont to triumph over haphazardly tended lawns. Looking back now, I can see that without my knowing it, walking was becoming a ritual, a meditation, every step tying me both to my immediate surroundings and to the earth as a whole.

Given those early bonds, it's no surprise that today, the mere suggestion of a walk represents to me the height of civility, luxury, even adventure. A stroll before dinner stimulates my mind and appetite. The rhythm and roll of feet meeting tarmac quiets and readies me for slipping under the sheets for a night's repose. Nothing sparks my imagination so much as a glance of a trail—any trail, be it alley or gravel roadway or meandering deer path—moving off into the distance, disappearing into the fog or over a hill into unknown worlds waiting to be explored.

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No wonder that my love for the undulating waves of Loess Hills was instant and deep. Here it seemed that I could wander forever, thoughts of the everyday world dropping away as abruptly as the sides of the knife-edged ridgelines. I seem to need pathways like this, routes that penetrate the unfamiliar and tempt me to follow. I think that perhaps we all do. We all need to be taken by the hand, whether that hand be the suggestion of a friend, a regional guidebook, or a roadside sign, and led into worlds unknown, guided by gentle suggestions until we hear the earth's beckoning and that alone pulls us forward.

The Loess Hills Scenic Byway does just that. The Byway is a network of more than 220 miles of roadways around and through the Loess Hills in seven western Iowa counties, selected and signed by volunteers in the early 1990s. The Byway leads us from the towns where the constant hum of highways dulls our sense of hearing, where fumes mute our desire to scent the wind, into lands that at first may seem separate and alien: angular hills, sharp penetrating stalks of yucca, woody brambles that catch our feet and forbid penetration, fences that forbid us to enter, bluffs too steep to mount even if they were open and free.

The Byway points out entranceways and tells us to slow down, to look more carefully. Soon we hear our spirits settling, sensing our surroundings, and responding. Perhaps it's the shadow and light speckling the intricate, complex landscape, or perhaps it's the knowledge that the prairie patches we still see here once formed an ancient inland ocean of flowering grass. Whatever the reason, here the earth is quick to be heard. Granted access, we use these paths through the Loess Hills to visit what soon becomes familiar but always remains unknown—for every trail, every road, no matter how often it has been tread, offers us constantly new visions of the world if only we are willing to search out the details and merge them with the ever-flowing topography of our inner lives.

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Today, we desperately need such pathways for reconnecting both to the earth and to our inner worlds. Yet to sell the Byway as just an invitation to the spirit is to sell it short. When my mother pushed me down the street in my stroller, she usually was going someplace specific: to the bakery, the grocery, the shoe repair shop on the corner. The mind might wander, but the feet pushed on toward the chosen goal. While the Byway by itself formed a viable gateway to the Hills for visitors, a plan was needed to point out specific mechanisms for maximizing the Byway's accessibility and effectiveness.

Hence this Loess Hills Scenic Byway *Corridor Management Plan*. Its central goal is to recommend specific tools for teaching Byway users about the unique and precious Loess Hills landform and its equally treasured native inhabitants, past and present--the prairie plants typical of areas far to the west, unusual visitors from the Southwest such as the plains spadefoot toad, earlier human

inhabitants such as the Glenwood Native American culture and the Mormon settlers of Preparation Canyon.

This *Corridor Management Plan* attempts to turn the Byway from a mesh of indiscernible marked roads into an educational web of site-specific interpretive signs and regularly placed displays. Bringing the *Plan* even closer to everyday concerns, recommendations are made for the siting of additional restrooms, parking areas, and other amenities, all in an attempt to make the Byway and the Loess Hills more attractive and accessible to visitors. Direct physical contact with the land is encouraged by specific recommendations for additional walking trails and scenic overlooks. For those who prefer two wheels to four, the plan assesses the potential for biking trails. All of these amenities can serve to draw users into the Loess Hills and then to transform their vision of the Hills from an undifferentiated jumble into an easily read textbook.

The *Corridor Management Plan*, once implemented, is sure to increase the awareness of large numbers of Byway users to the unique features of the Loess Hills. By doing this, by pulling in both mind and spirit of those who follow them, the Loess Hills Scenic Byway will serve its visitors well.

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Serendipitously, the Byway simultaneously will grow in its ability to address the needs of Loess Hills residents and of the Loess Hills themselves. When I first was getting to know this area many years ago, it sometimes appeared as a world forsaken. Small towns appeared to be closed and dying. The ecosystems of the Hills, in particular the prairies besieged by invading woodlands, were crying out for management. The cries for attention are still heard, but in part because of the Byway and the attention it is bringing to the Hills, the cries are being listened to more than before. As appreciation for the unique natural and cultural features of the Loess Hills increases, so too does interest and manpower directed at conserving these features.

The *Corridor Management Plan* points out locations where improvements and intensive management are needed. Policy tools for managing use of the land are explained—model ordinances, for example, that encourage decision makers to develop zoning ordinances specific to the Loess Hills landform, and to use

measures such as property tax abatement more aggressively to promote the protection of natural features. The *Corridor Management Plan* also tells residents and public officials how they can best become involved in specific efforts to preserve and manage Loess Hills ecosystems.

All of these features serve to benefit the human residents of the Loess Hills. Most simply, they too will follow the Byway and become educated in the basic features of the land they call home. This is no small feat; repeatedly, I have been approached by elderly Hills residents who claimed they always thought there was something special about the land where they lived, but only recently had anyone explained to them what exactly it was. Now that they know, the conservation strategies of the *Corridor Management Plan* will give them the tools they need to protect the land that they love. And the tourists who come here to visit will bring along their appreciation and dollars, both of which will reinvigorate the towns and their people. The economic benefits of the Byway and related ecotourism efforts are already evident in the growing number of establishments to feed and board visitors and in the production and sales of local crafts. Implementation of this *Corridor Management Plan* will boost the region's economic development even more.

And so I applaud the Loess Hills Scenic Byway and the over 200 volunteers who charted its course several years ago. They pointed out to all that the Loess Hills are a precious natural resource unquestionably worthy of preservation. And I applaud those who now seek to deepen and enrich the Byway's positive effects with this *Corridor Management Plan*. Theirs is a gift to all who allow themselves to become involved. Local residents who implement this *Corridor Management Plan* and use the Byway will deepen their appreciation and knowledge of their home territory. Visitors from elsewhere who follow the Byway will stretch their minds and enrich their spirits. And the natural ecosystems of the Loess Hills stand to be better managed because they are becoming both a recognized and respected resource. Here education and appreciation, conservation, and economic benefits all work together, each complementing furthering the other in one of those rare win-win situations.

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Like the sidewalks of my youth, the Loess Hills Scenic Byway induces us all to follow new pathways of many sorts. It beguiles us and draws us ever deeper into worlds formerly unknown. Through the Byway, we are invited to leave the limited-access highways of our lives, highways that separate us from the earth that offers and nourishes life, and to let our spirits wander into lives waiting to be born.

September, 1997 *Cornelia F. Mutel*
Iowa City, Iowa

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*An American Treasure Unique in the World*

# Preface and Acknowledgements

The people of western Iowa get things done. For them, plans must lead to action. As expected, development of the Loess Hills Scenic Byway *Corridor Management Plan* identified items in need of attention. This "get things done" attitude and the importance of items identified during the planning process resulted in Scenic Byway stakeholders successfully working together to:

- Fabricate and place additional route identification signs needed along the Byway;
- Design and install interpretive panels at dozens of attractions in the Corridor;
- Develop areas selected for scenic overlooks;
- Complete construction of major points of interest including the Southern Loess Hills Interpretive & Welcome Center, Westfield Interpretive Center and; Gateway Portals at the north, south and middle of the Byway;
- Create and publish an improved Scenic Byway brochure;
- Initiate a hospitality program for communities and attractions in the Corridor;
- Expand the ability of more than two dozen local businesses and attractions to provide products and services for travelers;
- Increase by more than double the number of motorcoach tours that visit the Corridor;
- Acquire and protect hundreds of acres of land and resources in the Loess Hills; and
- Ensure that development activities and highway construction projects in seven counties are protective of resources in the Corridor.

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The Loess Hills Scenic Byway *Corridor Management Plan* has taken the numerous work hours to complete. Accomplishing the work above may have occasionally diverted attention and resources from preparing the *Corridor Management Plan*. The time required to complete the *Plan*, however, is a good indication of the effectiveness of the planning process. Development of the original *Corridor Management Plan* was essential to helping stakeholders identify the need for and means of undertaking the actions described above. There can be no greater evidence of the usefulness of the Loess Hills Scenic Byway *Corridor Management Plan* than the work that has already been accomplished.

Loess Hills, Monona County M. Whye

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The leadership and participation of residents and public officials in western Iowa has always driven activities related to the Loess Hills Scenic Byway. Preparation of the *Corridor Management Plan* has been no different. Members of the Scenic Byway management team and various project committees have spent hundreds of hours working with staff and advisors to complete the *Plan*. The original Management team and committee members included:

**Scenic Byway Management Team:**

- **Tom Bruegger**, Director, Conservation Board, Monona County
- **Steve DeVries**, Engineer, Mills County
- **Kay Mocha**, Director, Planning and Zoning, Pottawattamie County
- **Rick Schnieder**, Director, Conservation Board, Woodbury County
- **Mike Slyby**, Transportation Planner, Iowa Department of Transportation
- **Dennis Sohl**, Director, Conservation Board, Plymouth County
- **Tim Sproul**, Director, Conservation Board, Harrison County
- **John Whipple**, Supervisor, Fremont County

**Corridor Management Planning Committee Members:**

- **Blair Chicoine**, Sergeant Floyd Welcome Center and Riverboat Museum
- **Kathy Dirks**, Harrison County Welcome Center and Historical Museum
- **Mark Eckman**, Iowa Department of Economic Development, Division of Tourism
- **Sara Fuller**, Sioux City Convention and Visitors Bureau
- **Robert Jackson**, Mills County
- **Dorothy Jepsen**, Loess Hills Hospitality Association
- **Leroy Kadel**, Pottawattamie County
- **Glen Knop**, Mills County
- **Jeannie Kuhlman**, Loess Hills Hospitality Association
- **John Lambertz**, Iowa Department of Natural Resources
- **Mary Madden**, Woodbury County
- **Celeste Mitten**, Council Bluffs Convention and Visitors Bureau
- **Tim Orwig**, Woodbury County
- **Roger Schultz**, Sioux City Convention and Visitors Bureau
- **Shawn Shea**, Pottawattamie County
- **Kari Sliva**, Council Bluffs Convention and Visitors Bureau
- **Bob Smith**, Fremont County
- **Sharon Sullivan**, Harrison County Development Corporation

**THE LOESS HILLS OF IOWA**
*An American Treasure Unique in the World*

- **Barb Utech**, Plymouth County
- **Mary Madden**, Woodbury County
- **Darrell Wessell**, Monona County
- **Ron Williams**, Iowa Department of Natural Resources

**Current and past Loess Hills Scenic Byway Council Members include:**

- **Pat Shull**, Fremont County, Past Member
- **Pat Hume**, Fremont County
- **Harold Swanson**, Mills County, Past Member
- **Kevin Mayberry**, Mills County
- **Liz McKenna**, Pottawattamie County, Past Member
- **Kathy Dirks**, Harrison County
- **Jon Singelstad**, Monona County, Past Member
- **Dennis Gann**, Woodbury County, Past Member
- **Mark Monson**, Woodbury County
- **Gary Tucker**, Plymouth County
- **Shirley Phillips**, At Large Member
- **Kathy Gourley**, State Historical Society
- **Margaret Roetman**, Iowa DOT, Past Member
- **Mark Kerper**, IDOT, Past Member
- **Mike Brandrup**, State Forester DNR, Past Member
- **Dennis Michel**, Iowa DNR
- **Michele Walker**, Western Iowa Tourism Region & Marketing Contact for the Byway
- **Shirley Frederiksen**, Golden Hills RC&D & Byway Leader

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*An American Treasure Unique in the World*

In addition, dozens of residents volunteered their time to participate in meetings and activities carried out that provided information essential to the preparation of the *Corridor Management Plan*. Professionals with expertise in a wide range of disciplines provided the support and assistance required to prepare the *Corridor Management Plan*.

Financial support necessary to prepare the *Corridor Management Plan* was provided by the Federal Highway Administration (FHWA), Iowa Department of Transportation (DOT), Iowa Department of Natural Resources (DNR), USDA Natural Resources Conservation Service (NRCS), and the seven counties through which the Loess Hills Scenic Byway travels. Special mention should be made of the assistance provided by Troy Seifert with Iowa DOT.

The Board of Directors of Golden Hills RC&D provided essential oversight and support during preparation of the *Corridor Management Plan*. Board members include:

- **Barry Deuel**, Chair, Shelby County
- **Diane Forristall**, Vice Chair, Pottawattamie County
- **Bob Smith**, Secretary, Fremont County
- **Debbie Pierce**, Treasurer, Pottawattamie County
- **Jon Herzberg,** Page County
- **Ron Krohn** Mills County
- **Larry King**, Harrison County
- **Jim Parker,** Montgomery County
- **Duane McFadden,** Cass County

Murray Hill Scenic Overlook, Harrison County M. Whye

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The writing and photography of Cornelia Mutel, Don Poggensee, and Mike Whye have achieved greater awareness of and appreciation for the Loess Hills. The influence of their work has helped to preserve the many special resources and features of this unique region of the world. Their contributions to the *Corridor Management Plan* display their deep concern for the future of the Loess Hills. The power of their words and photographs elevates to the highest level the potential of this *Plan* to ensure the sound management of the Loess Hills Scenic Byway Corridor.

# Loess Hills Scenic Byway *Corridor Management Plan* Summary

Since 1989, many groups, organizations and individuals of western Iowa have participated in planning and developing the Loess Hills Scenic Byway. Preparing this *Corridor Management Plan* has been an essential part of that process. This *Plan* identifies the need for, and means of, undertaking actions to enhance and preserve the unique intrinsic qualities that make the Loess Hills Scenic Byway an attraction for hundreds of thousands of visitors each year from all over the world.

The Loess Hills Scenic Byway weaves through a landform of windblown silt deposits that make up the Loess Hills. The Loess Hills are one of North America's gems, possessing natural features only found in one other place on this earth, China (Mutel 4, 1989). Their deep loess deposits form a north-south band approximately 200 miles along the eastern edge of the Missouri River valley. The Loess Hills are located in the following seven western Iowa counties: Plymouth, Woodbury, Monona, Harrison, Pottawattamie, Mills and Fremont.

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The Loess Hills Scenic Byway is a connected system of over 220 miles of state highways and county roads. The initial routes were located in Harrison and Monona Counties and were later extended into Pottawattamie, Mills and Fremont Counties. By 1992 the Byway's final routes were selected in Woodbury and Plymouth Counties. Route identification signs were fabricated and installed and a Loess Hills Scenic Byway map and brochure was published and distributed by 1993.

Development of the *Corridor Management Plan* began in 1993 with special studies about enhancing and preserving the region's resources, developing tourism, providing adequate amenities, and economic development. These studies are the foundation for development of the *Corridor Management Plan*.

The *Corridor Management Plan* consists of the following five sections:

- Introducing the Plan
- Understanding the Resources
- Understanding Tourism
- Corridor Development Actions
- References

The first section, "Introducing the Plan," discusses the processes used for planning and developing the Loess Hills Scenic Byway. It also discusses the role of Byway stakeholders in implementing the *Corridor Management Plan*.

The second section, "Understanding the Resources," identifies the intrinsic qualities of the Loess Hills, or special natural and human-made resources in the region.

The third section, "Understanding Tourism," examines the economic impact and market potential of tourism in the Loess Hills Scenic Byway Corridor.

The Plan's fourth section, "Corridor Development Actions," contains a series of recommended actions for the management and protection of the Scenic Byway Corridor's intrinsic qualities. A matrix presented in this section suggests the "Leaders" and "Participants" responsible for completing these actions along with levels of priority. Leaders and Participants are the stakeholders of the Loess Hills Scenic Byway.

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*An American Treasure Unique in the World*

The final section, "References," lists the references used in developing the *Plan*.

This Loess Hills Scenic Byway *Corridor Management Plan* provides guidance for the development, management and protection of an American Treasure unique in the world.

# Introducing the Plan

## Section Contents

Iowa's Loess Hills - "An American Treasure!" 1-2

Loess Hills Scenic Byway 1-5

Loess Hills Scenic Byway *Corridor Management Plan* 1-13

Stakeholders of the *Corridor Management Plan* 1-14

The *Corridor Management Plan* Document 1-18

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## Iowa's Loess Hills - "An American Treasure!"

When approaching the western border of Iowa, travelers are often intrigued by the view of a most extraordinary landscape of prairie and forest covered steep bluffs, narrow ridges and rolling hills. This unique landscape is known as Iowa's Loess Hills. The Loess Hills are one of North America's gems, possessing natural features rarely duplicated elsewhere. In only one other part of the world, the Yellow River Valley of China, has wind-deposited silt, or loess (pronounced "luss") accumulated to such depths as to form the landscape so spectacularly (Mutel 4, 1989).

Loess Hills Bluffline D. Poggensee

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The archaeological resources of the region are also of notable significance. Once home to great North American cultures such as the Mill Creek and Glenwood peoples, the Loess Hills are now scattered with earth lodge sites and ancient artifacts and tools. The earth lodges are of such significance that they have been compared to the cliff dwellings of the ancestral Pueblo Indians of the southwest.

The loess deposits that make up the Loess Hills were initially left by glacial melt waters onto the floodplain of the Missouri River and then blown upward by strong wind and re-deposited along the eastern side of the river valley. The steep, sharply ridged topography of the Loess Hills is the product of tens of thousands of years of deposition and erosion of this wind-blown silt. The rugged landscape and strong local contrasts in weather and soil conditions provide refuge for a number of rare plants and animals, many of which can be found in Iowa only in the Loess Hills (Mutel 4-5, 1989).

Iowa's Loess Hills form a north-south band approximately 200 miles in length along the eastern edge of the Missouri River as shown on the map at the end of this chapter. The Loess Hills are best developed in a strip between 3 and 10 miles wide where the loess deposits reach up to 200 feet in depth (Mutel 8, 1989). The Loess Hills are located in the following seven Iowa counties: Plymouth, Woodbury, Monona, Harrison, Pottawattamie, Mills and Fremont.

Cherished today for their natural beauty and far reaching views of the Missouri River Valley, hundreds of years ago, Native American cultures called the Loess Hills home. Known as the Glenwood and Mill Creek cultures, these members of the larger Central Plains Tradition resided on the ridges and terraces of the Loess Hills from approximately A.D. 1000 to 1300. Contemporaries of the Pueblo Indians found in southwest United States, the Central Plains Indians also formed great societies and lived in large villages near the Missouri River.

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The Glenwood culture is technically referred to as the Nebraska Phase of the Central Plains Tradition. These people resided in the southern portion of the Loess Hills near the confluence of the Platte and Missouri Rivers, from approximately A.D. 1050 to 1300. It is most likely that the Glenwood people farmed the terraces of the Loess Hills, though they also hunted animals like bison, elk and deer.

The Mill Creek culture, believed to be descended from the Great Oasis Culture, resided further north in the Loess Hills near Sioux City from about A.D. 1100 to 1300. Much like the Glenwood Indians, Mill Creek Indians farmed and hunted for food.

Both the Glenwood and Mill Creek peoples constructed earth lodges. The earth lodges were usually square to rectangular in shape with rounded corners. Most lodges had four central posts, a row of wall posts, a central hearth and a long, narrow entrance that faced south. The entire structure would then be plastered with a mixture of mud and grass, also known as “wattle and daub.” These earth lodges are to the Glenwood and Mill Creek cultures what the cliff dwellings were to the Pueblo cultures in the southwest.

Why these cultures left the Loess Hills is a mystery, but the rich archaeological resources these cultures left behind tell a compelling story of America’s past.

Excavated earthlodge near Glenwood *Iowa State University Office of the State Archaeologist*

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# Loess Hills Scenic Byway

Bluff road along western edge of the Loess Hills Golden Hills

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## *A Vision for the Scenic Byway*

The Loess Hills Scenic Byway represents the willingness and ability of communities, public agencies, and private organizations to work together on economic development, cultural and conservation issues. In establishing the Loess Hills Scenic Byway, local residents and representatives of these agencies and organizations have pursued a vision that:

- Focuses on preserving and enhancing the Loess Hills resources;
- Encourages economic growth through increased tourism and recreation;

- Provides opportunities for the public - both visitors and residents - to see and enjoy the people and the natural beauty of the Loess Hills;
- Offers a "user friendly" system of roads that allow visitors to experience a nationally significant landscape;
- Identifies the opportunities and needs for education about the resources of the Loess Hills;
- Recognizes the need for increased maintenance; more partnerships between organizations, agencies and groups; additional land use regulation; and preservation programs; and
- Recognizes the benefits of achieving state and federal designation as a scenic byway.

### *The Scenic Byway*

The Loess Hills Scenic Byway is a connected system of state highways and county roads through the heart of Iowa's Loess Hills. The Scenic Byway's main route consists of 220 miles of paved roads. Sixteen excursion routes, all loops connected to the main route, are also part of the Loess Hills Scenic Byway.

The Scenic Byway is easily accessible from Interstates 29, 680 and 80, providing travelers with numerous points of entry and exit. Route identification signs have been installed along the Byway network. Additional signs are planned to aid in guiding visitors as they travel the Scenic Byway.

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The Loess Hills Scenic Byway travels through 16 small rural towns and two larger metropolitan areas, Council Bluffs and Sioux City. The towns and cities on the Scenic Byway provide travelers with necessary visitor facilities and services. Along its entire length, the Scenic Byway offers travelers the opportunity to enjoy breathtaking views, dozens of parks, recreation and wildlife areas, a variety of cultural events, information and attractions, and numerous sites of national and local historic significance.

Loess Hills Scenic Byway T. Bruegger

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### *Scenic Byway Development*

Establishment of the Loess Hills Scenic Byway took place between 1989 and 1993. Initial routes selected for the Byway were located in Harrison and Monona Counties. In 1991 Byway routes were extended into Pottawattamie, Mills and Fremont Counties. By 1992 the Byway's final routes were selected in Woodbury and Plymouth Counties. Route identification signs were fabricated and installed and a Loess Hills Scenic Byway map was published and distributed by 1993.

The selection, signing and promotion of routes that make up the Scenic Byway was accomplished through the active participation of local residents, elected officials and representatives of public agencies. Development of the Byway required in-depth analysis of:

- Characteristics of the roadway Corridor;
- Public preference for scenic views;
- Location and availability of attractions;
- Visitor facilities; and
- Safety issues.

## Public Participation

Public involvement was encouraged at every phase of the Scenic Byway's development and continues through its implementation and operation stages. Local leaders in economic development, tourism, and business together with county supervisors, engineers and conservation board directors served on county and multi-county Scenic Byway committees. These committees were charged with researching, identifying, evaluating and selecting routes for the Loess Hills Scenic Byway. Committee members were assisted by professionals with the Iowa Department of Transportation (DOT), Iowa Department of Economic Development (DED), Iowa Department of Natural Resources (DNR), Iowa State University Extension (ISU) and the Natural Resource Conservation Service (NRCS).

Strategic planning for the Loess Hills Scenic Byway — Golden Hills

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## Roadway Characteristics

The 220 miles of the Scenic Byway's main route, or spine, consists of state and county paved roads. Drive time, without stops, for the entire main route is just under 6 hours. Selection of paved roads for the spine allowed use of the Scenic Byway by travelers of all driving abilities and vehicles types. The Scenic Byway's 16 excursion routes or loops, vary in length from 3 to 19 miles and have drive times ranging from 15 to 40 minutes. All of the excursion routes

begin and end on the main route, include state and county roads, and have paved and gravel surfaces. Routes for the Byway excursion loops were selected to provide additional opportunities for travelers to experience the Loess Hills.

**Landscape Assessment**

Landscape assessment techniques were used to determine and evaluate the varied visual resources of the Scenic Byway Corridor. Landscape assessment indicators, a technical means used to categorize and quantify the Byway's visual resources, included:

- Character--a measure of how well the landscape and its components work and belong together;
- Structure--a measure of the distance one can see in a view at any one time; and
- Information--a measure of the ability of the landscape to engage the viewer.

In combination, these indicators were used to identify qualities in the landscapes of the Scenic Byway that people found pleasing, attractive, or significant even though they may not, in every instance, be "picture-postcard" views.

**Public Preference Testing**

Photographs were taken of scenes in the Loess Hills that illustrated varying combinations and levels of landscape character, structure, and information. More than 450 residents and visitors participated in the analysis of visual resources along the Scenic Byway. Participants viewed the photographs and recorded those that they liked and disliked. Results of the preference testing gave Byway planners a clear indication of the types of views that most people were interested in seeing in the Loess Hills.

Public preference testing helped identify Scenic Byway routes Golden Hills

Scenic Byway committee members also collected data about the landscape assessment indicators on candidate Byway routes. Working in teams, committee members recorded their ratings of the different views along potential Byway routes. The teams also identified “good” and “bad” views based on their own individual preferences as well as driving conditions on the candidate routes.

This work provided a comparison between the results of public preference testing and the actual views present along potential Byway routes. By recording driving conditions, the teams also provided planners with input pertaining to driver expectations and safety.

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### Attractions and Visitor Facilities

Scenic Byway committee members completed a comprehensive inventory of public attractions (historic sites, museums, parks, special events) and visitor services (lodging, restaurants, service stations, public restrooms). Inventory results were used to help determine the suitability of potential Byway routes to accommodate the needs of travelers.

Dorothy Pecaut Nature Center, Woodbury County M. Whye

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### Safety Issues

State and county highway engineers helped to establish safety standards for the review and selection of routes for the Loess Hills Scenic Byway. The engineers identified roads to be excluded from consideration due to safety related issues. These roads generally had poor vertical and horizontal alignments, high traffic accident frequencies, numerous railroad crossings and bridges with weight and height restrictions that prohibit use by motor coaches or heavy use by commuters. On the advice of the Iowa Attorney General's office, cautionary driving information was included as part of the Scenic Byway map and brochure.

### Final Route Selection

The results of preference testing for scenic resources, location of public attractions and visitor services, and roadway safety considerations were displayed on a series of map overlays together with candidate Byway routes. Scenic Byway committee members worked with representatives of public agencies to review the information assembled and select final routes for the Byway.

***Maps***

Loess Hills Landform Region

Loess Hills Scenic Byway Routes

Loess Hills Scenic Byway Route Ownership

Loess Hills Scenic Byway Route Pavement Types

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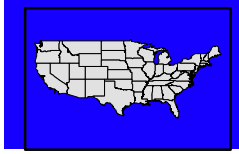
# Loess Hills Landform Region

## State of Iowa

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Loess Hills Landform Region

0 115 230 460 690 Miles

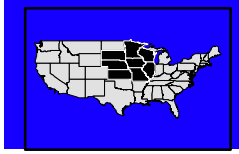
N
W E
S

# Loess Hills Landform Region

## State of Iowa

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Loess Hills Landform Region

0 55 110 220 330 Miles

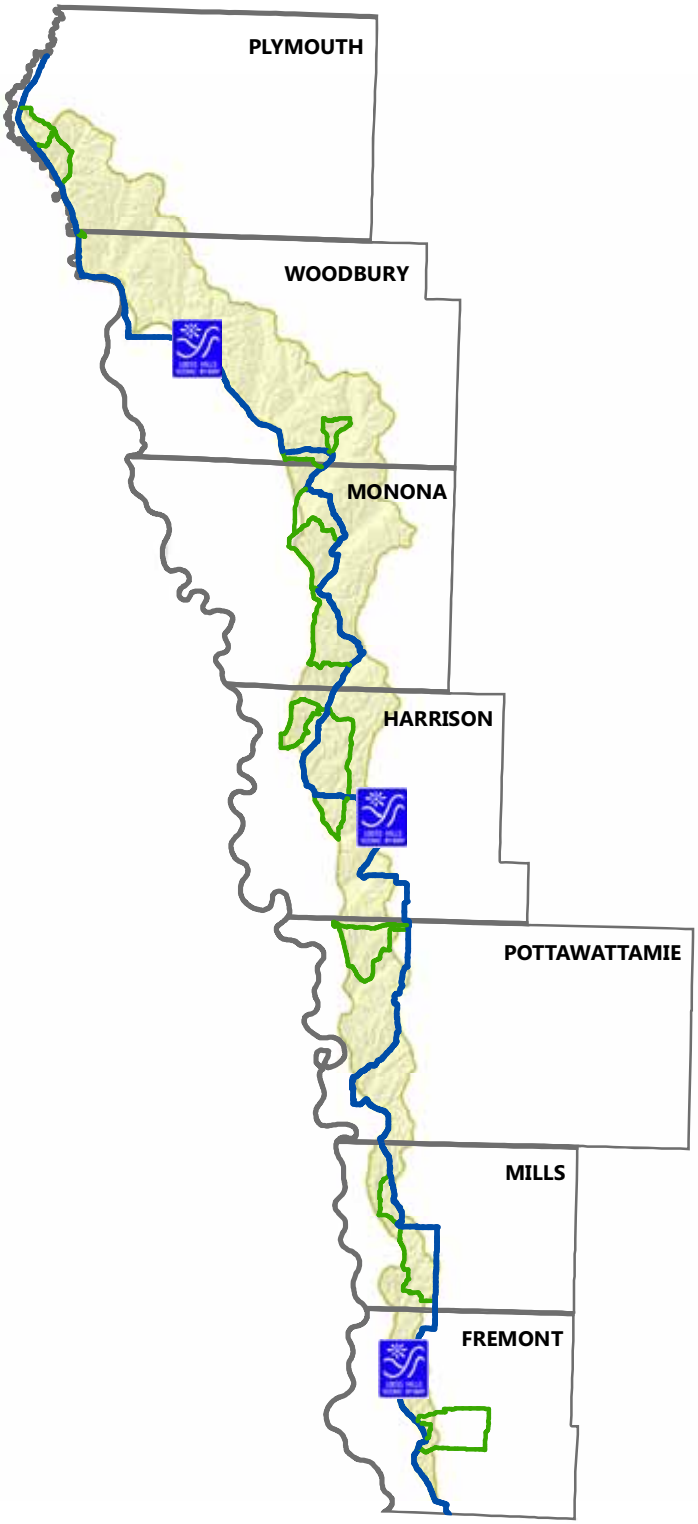
N W E S

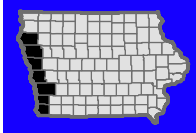
# Loess Hills Scenic Byway Routes

## Western Iowa Loess Hills

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Loess Hills Landform

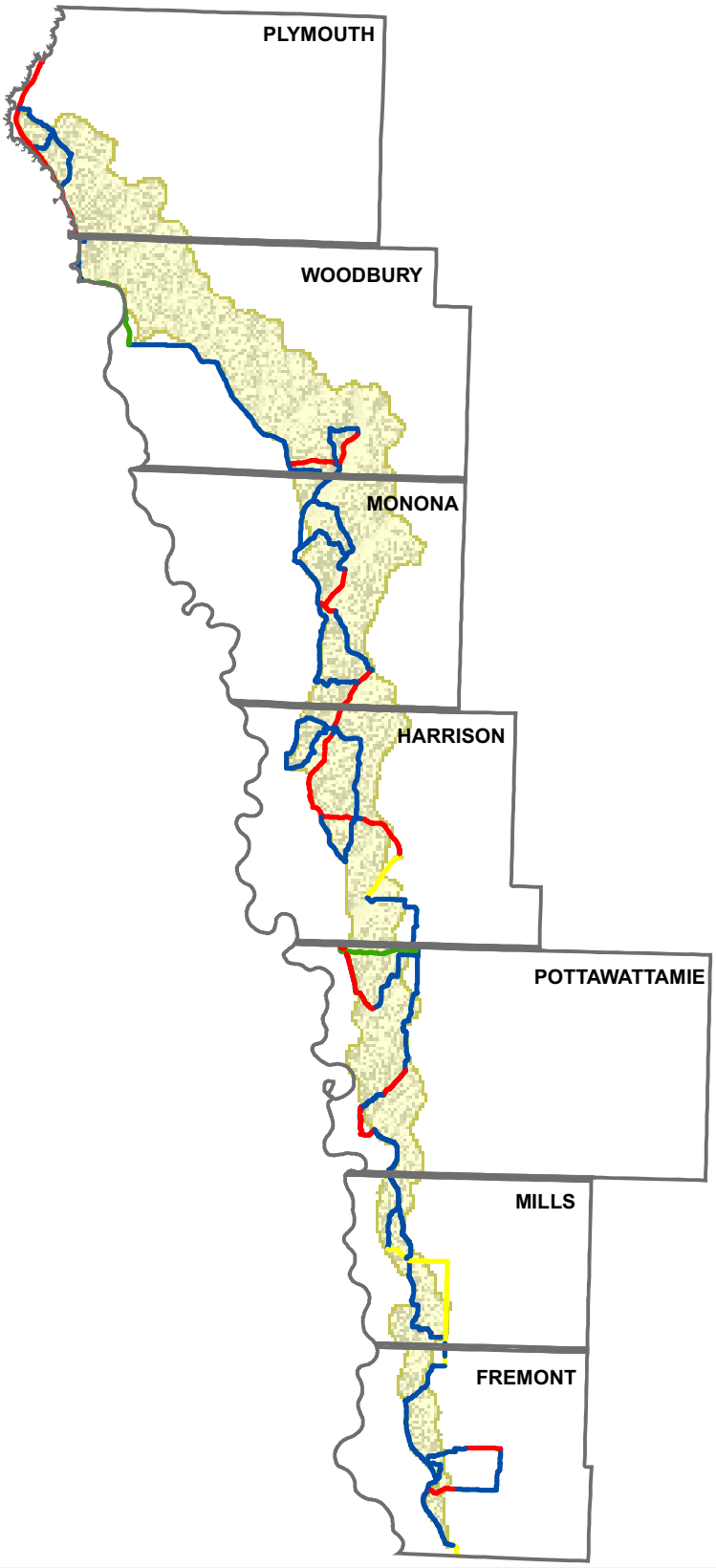
0 5 10 20 30 Miles

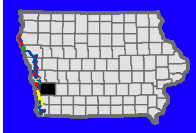
N W E S

# Route Ownership
## Western Iowa Loess Hills

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



County
Interstate
US Highway
State Highway

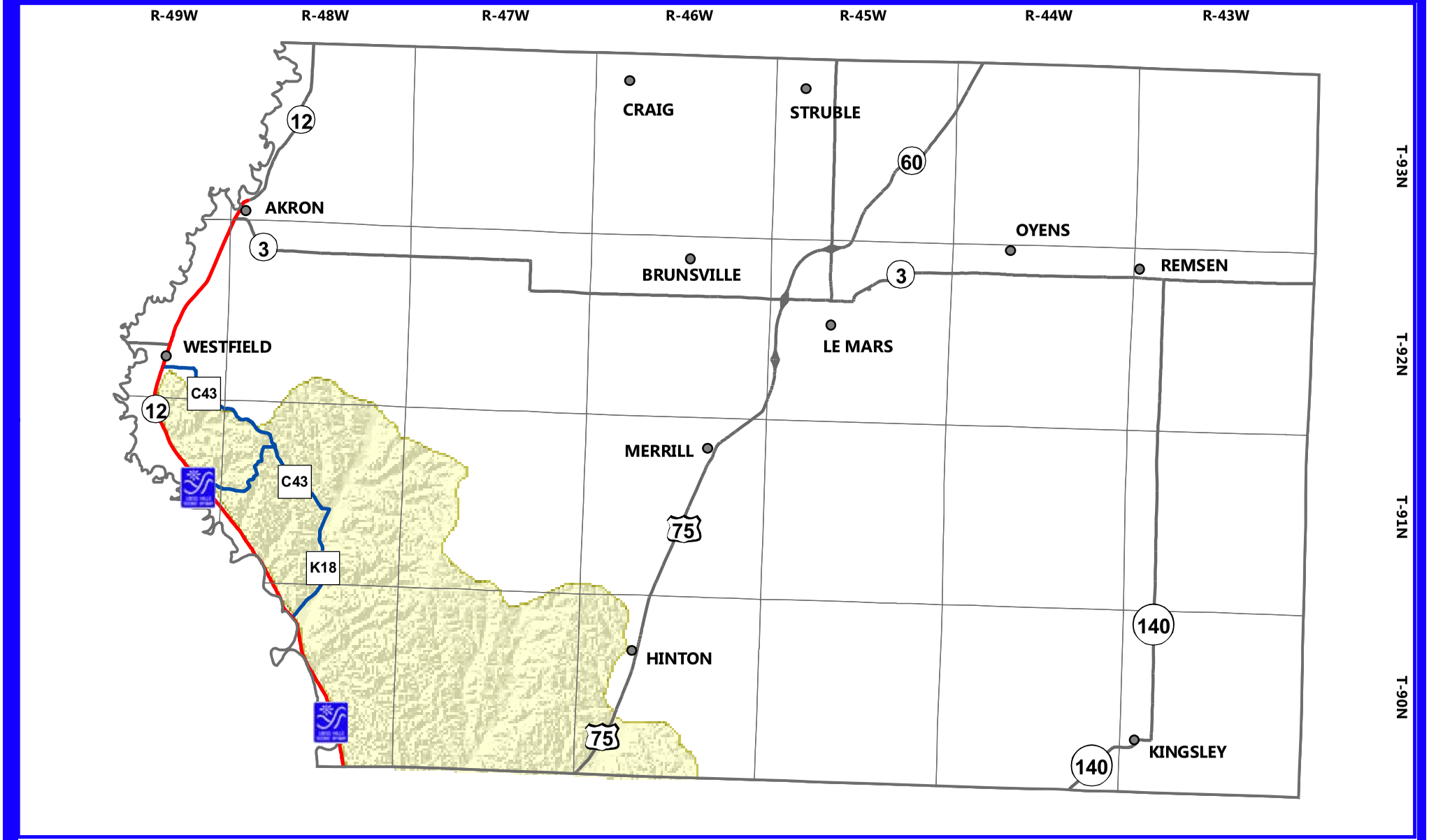
0 5 10 20 30 Miles

N
W E
S

# Route Ownership
## Plymouth County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department




County
State
Highways
Township Line
Loess Hills Landform Region

0 1.25 2.5 5 7.5 Miles

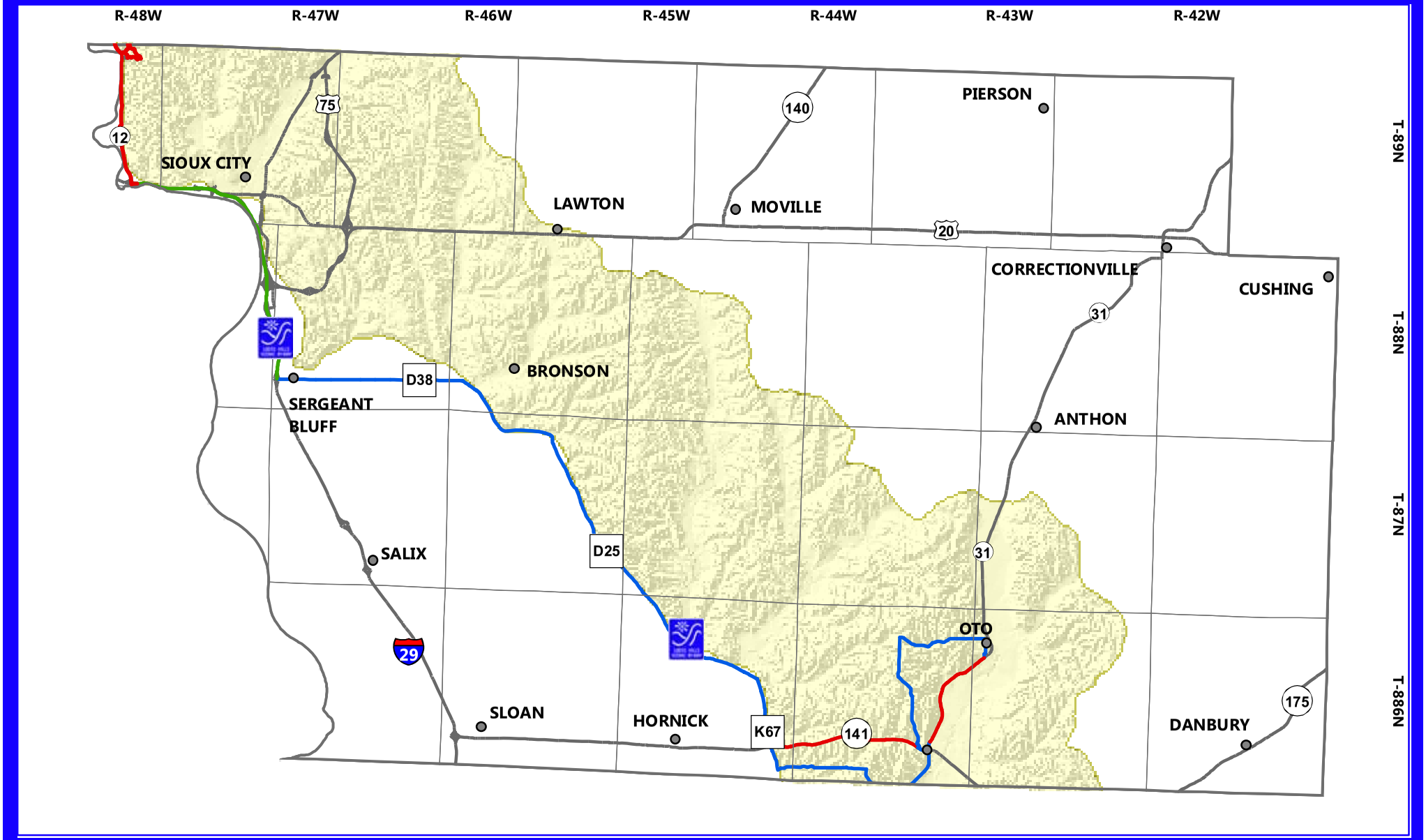
N
W
E
S

# Route Ownership

## Woodbury County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department




County
Interstate
State
Highways
Township Line
Loess Hills Landform Region

0 1.25 2.5 5 7.5 Miles

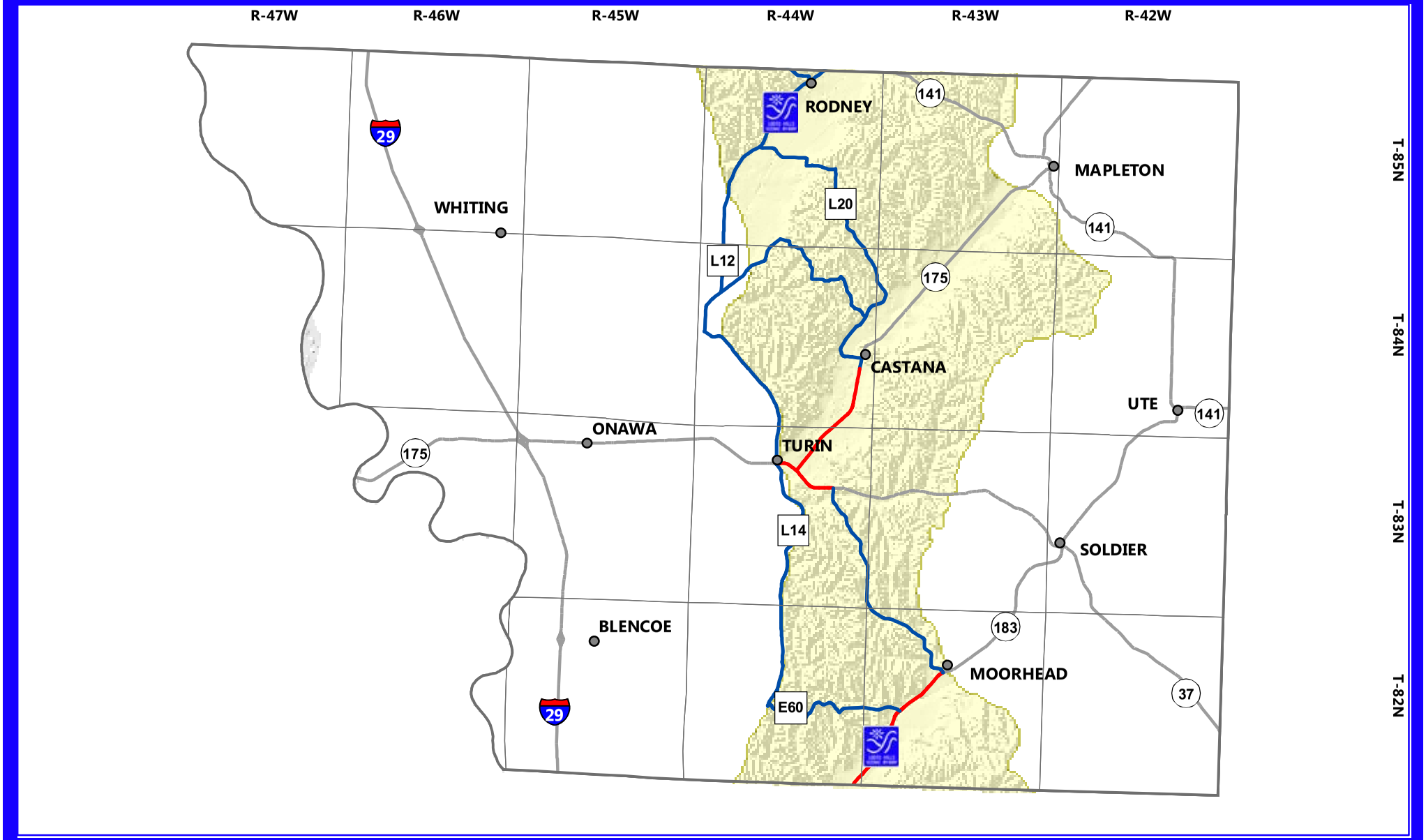
N
W
E
S

# Route Ownership

## Monona County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department




County
State
Highways
Township Line
Loess Hills Landform Region

0 1.25 2.5 5 7.5 Miles

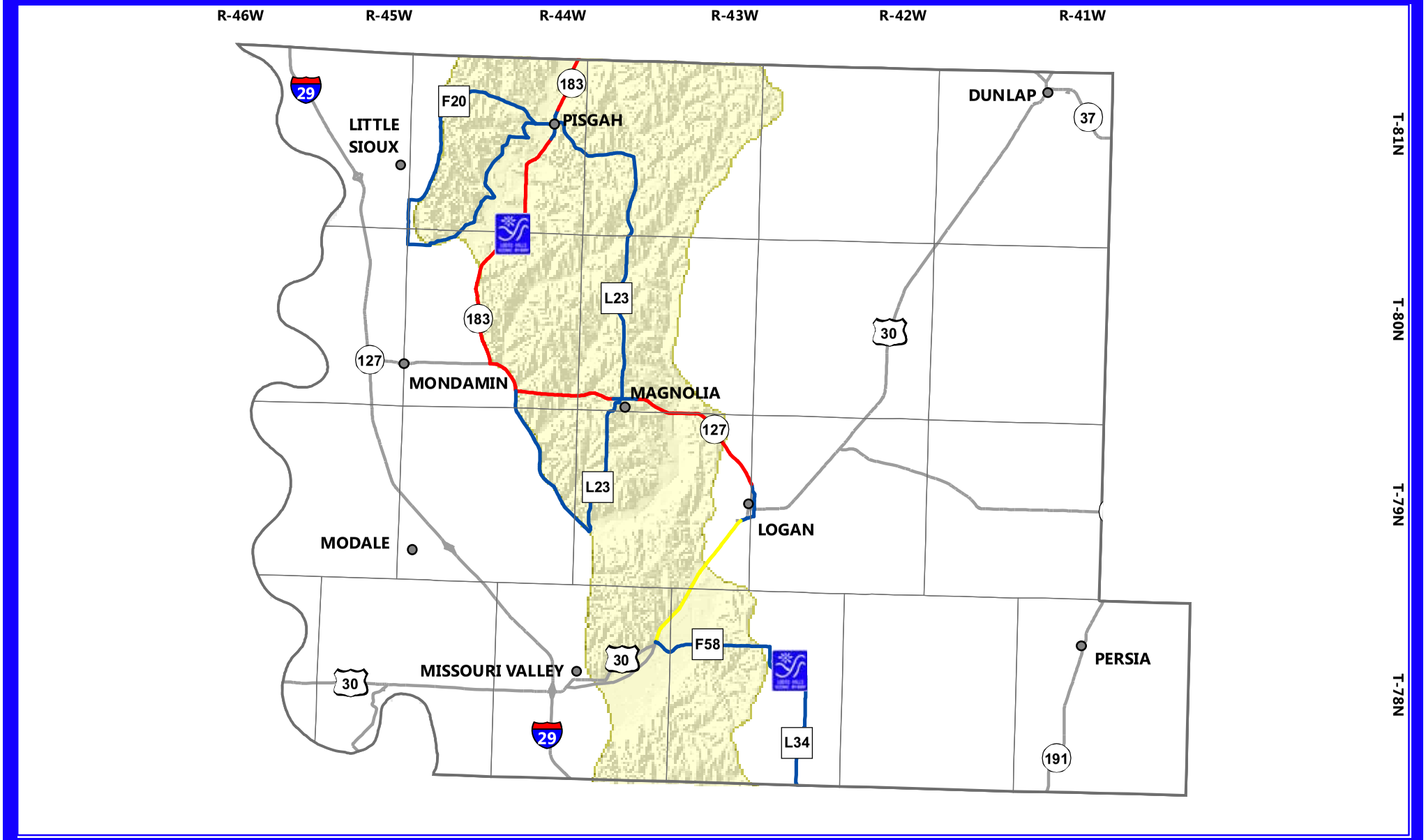
N
W
E
S

# Route Ownership

## Harrison County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department




County
Federal
State
Highways
Township Line
Loess Hills Landform Region

0 1.25 2.5 5 7.5 Miles

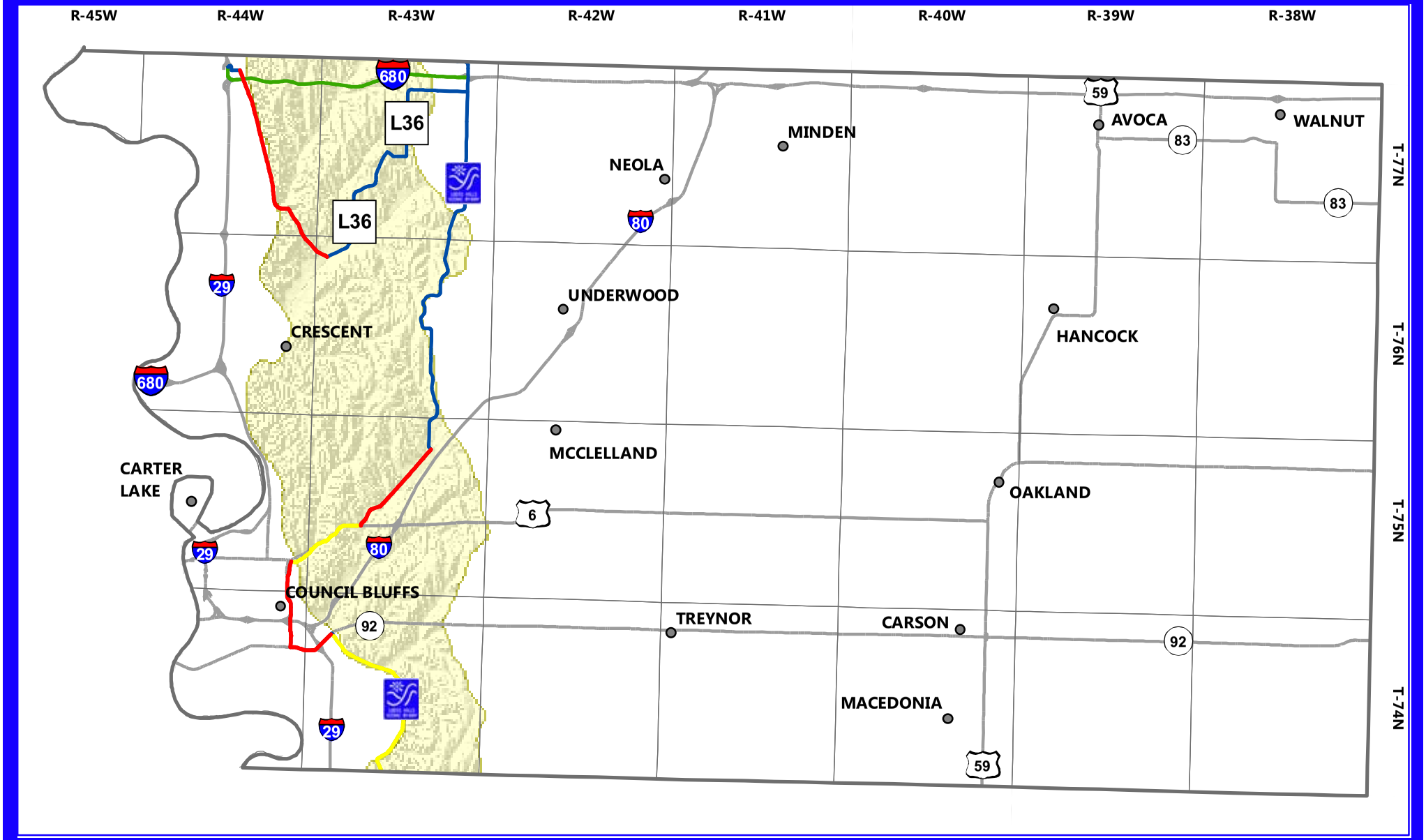
N
W
E
S

# Route Ownership

## Pottawattamie County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department




County
Federal
Interstate
State
Highways
Township Line
Loess Hills Landform Region

0 1.25 2.5 5 7.5 Miles

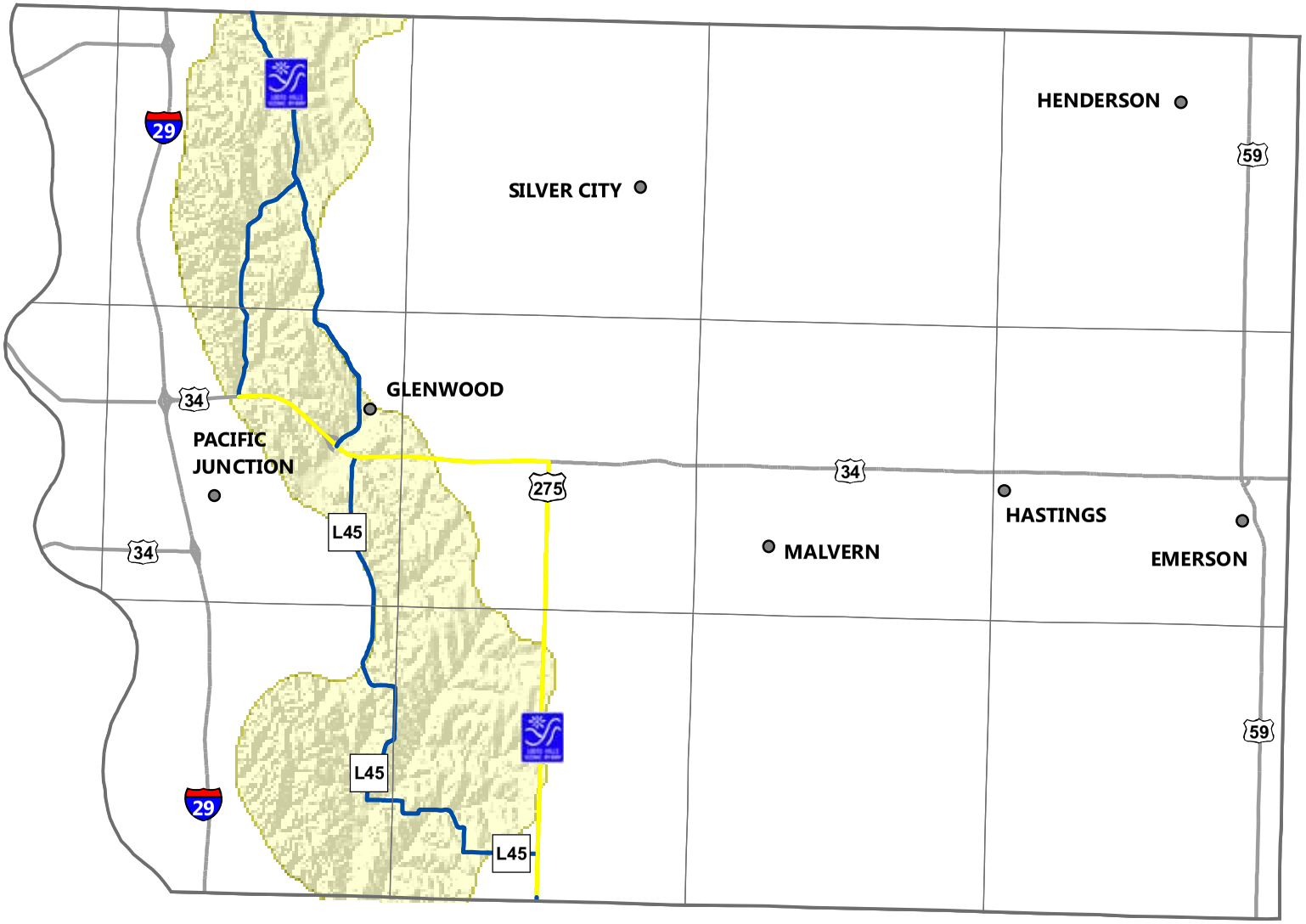
N
W
E
S

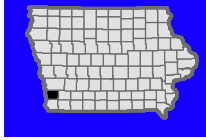
# Route Ownership

## Mills County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



County
Federal
Highways
Township Line
Loess Hills Landform Region

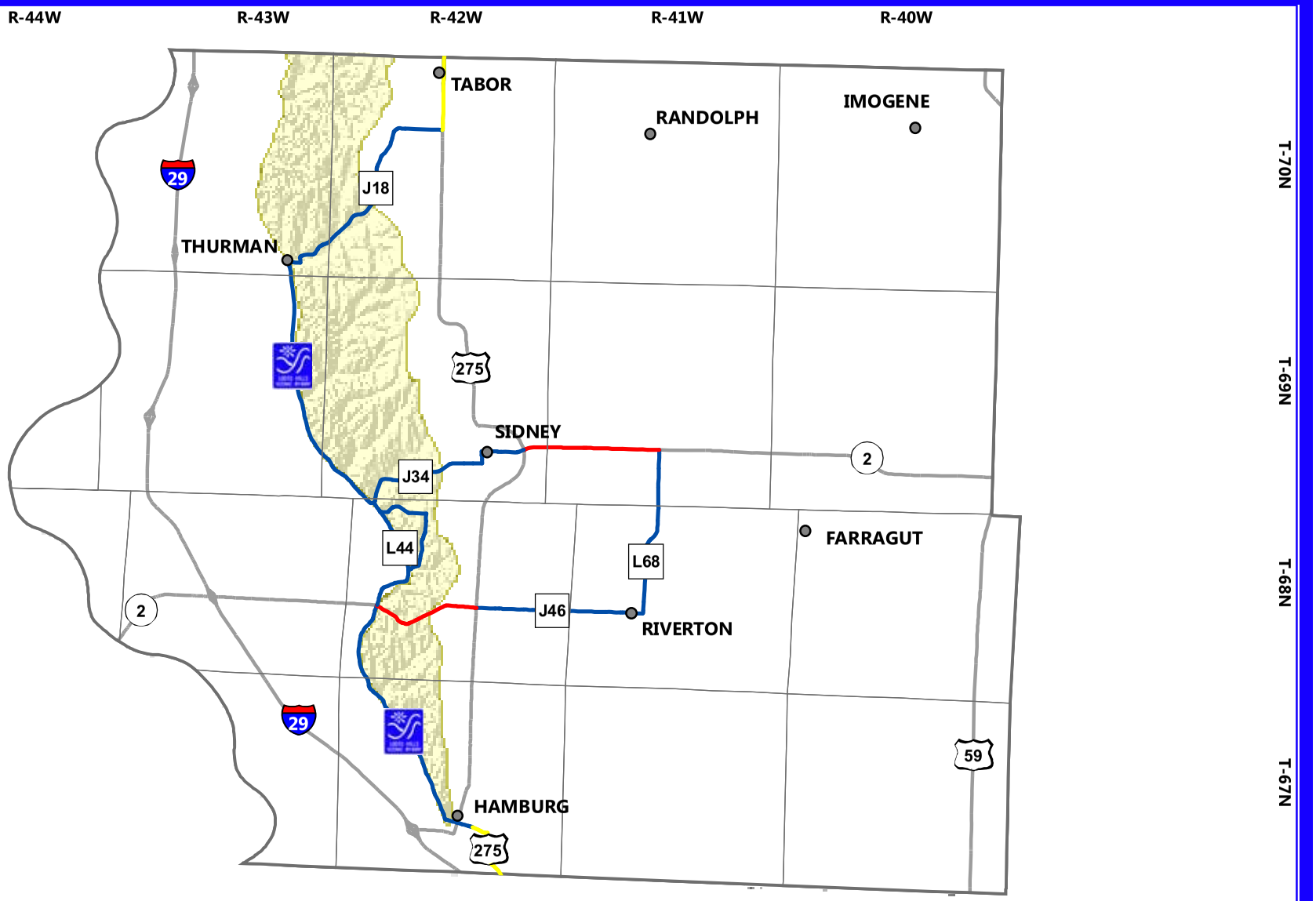
0 1 2 4 6 Miles

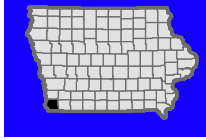
N W E S

# Route Ownership
## Fremont County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



County
Federal
State
Highways
Township Line
Loess Hills Landform Region

0 1.25 2.5 5 7.5 Miles

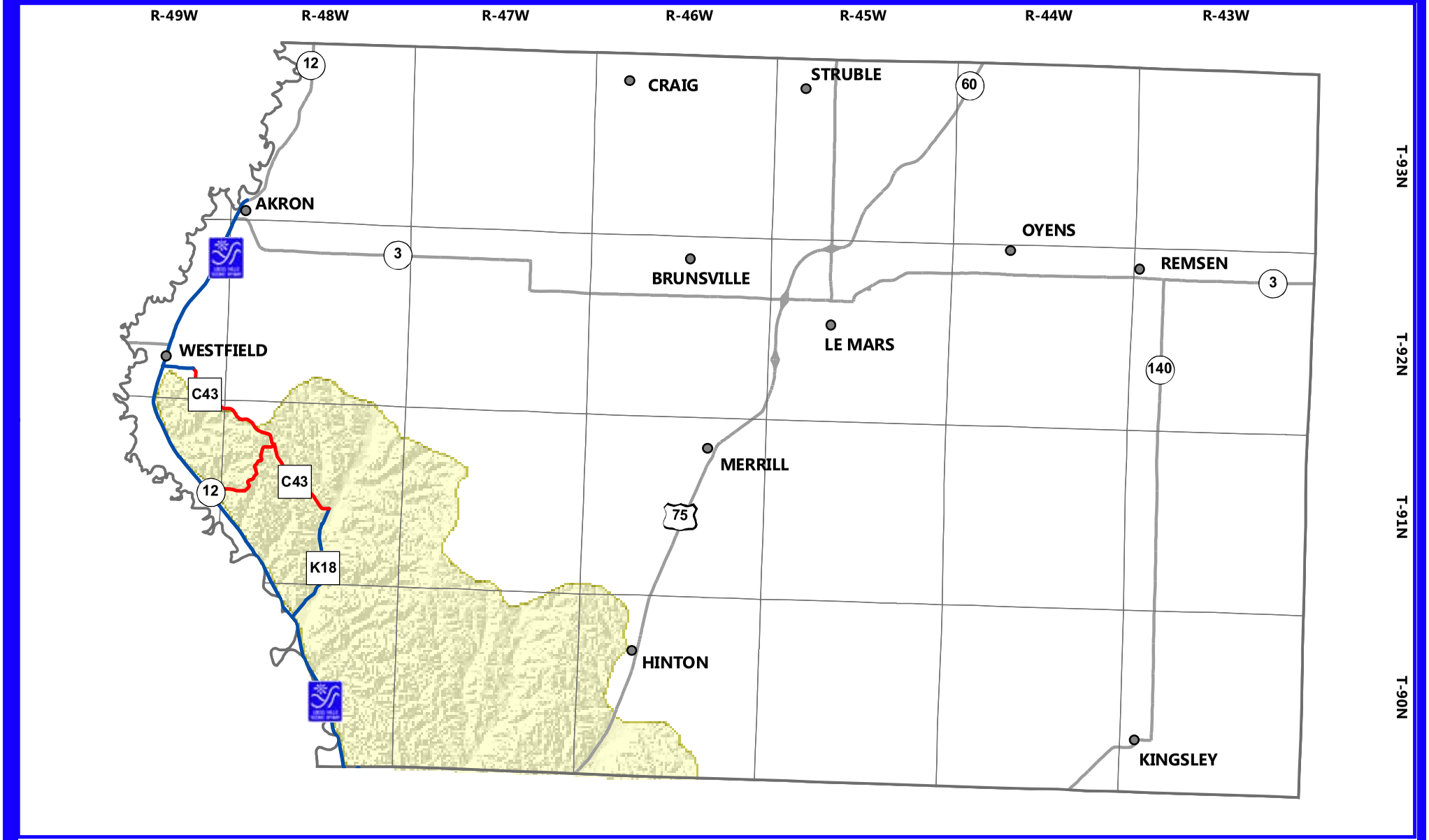
N
W E
S

# Route Pavement Types

## Plymouth County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department




Gravel
Paved
Highways
Township Line
Loess Hills Landform Region

0 1.25 2.5 5 7.5 Miles

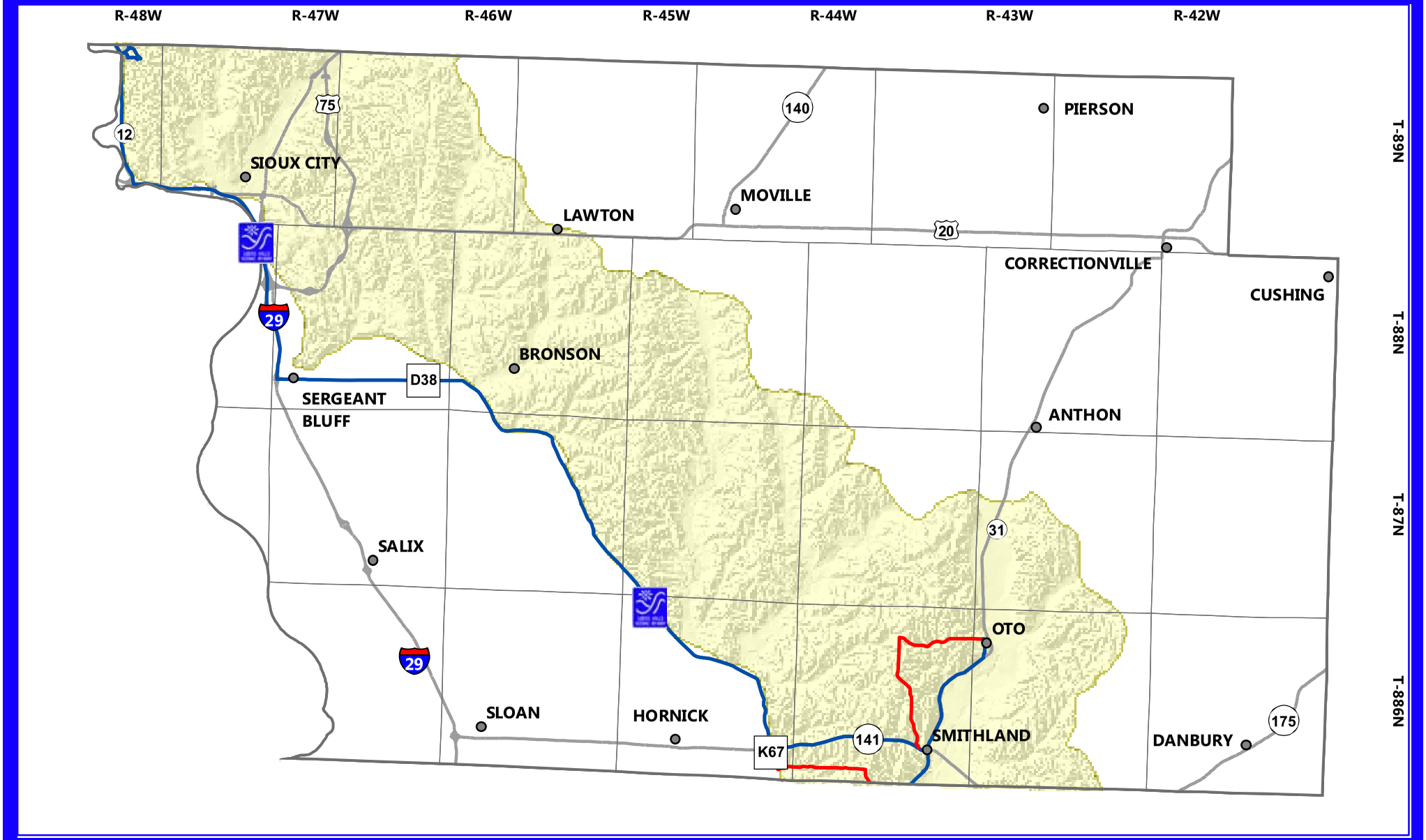
N
W
E
S

# Route Pavement Types

## Woodbury County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department

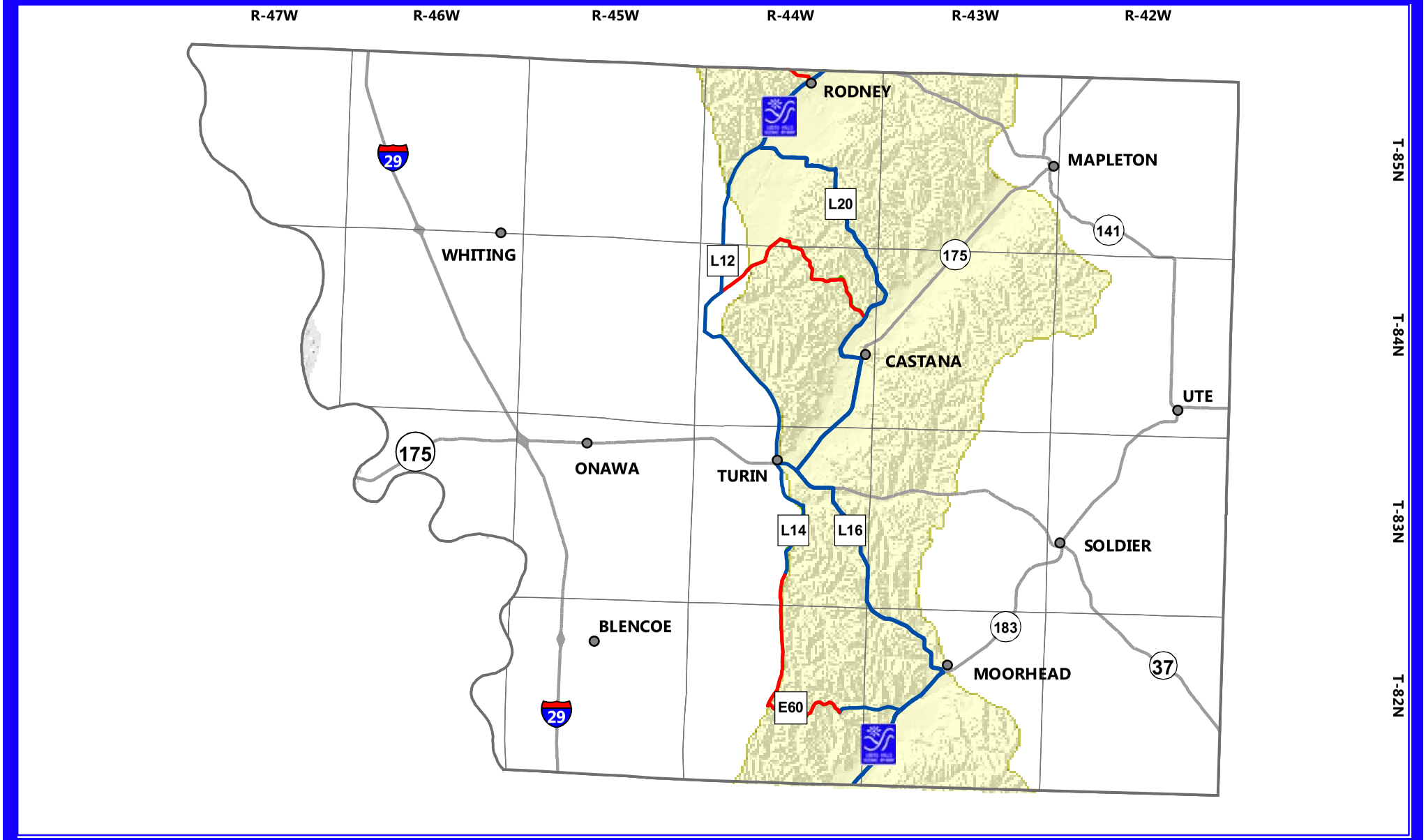


# Route Pavement Types

## Monona County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department

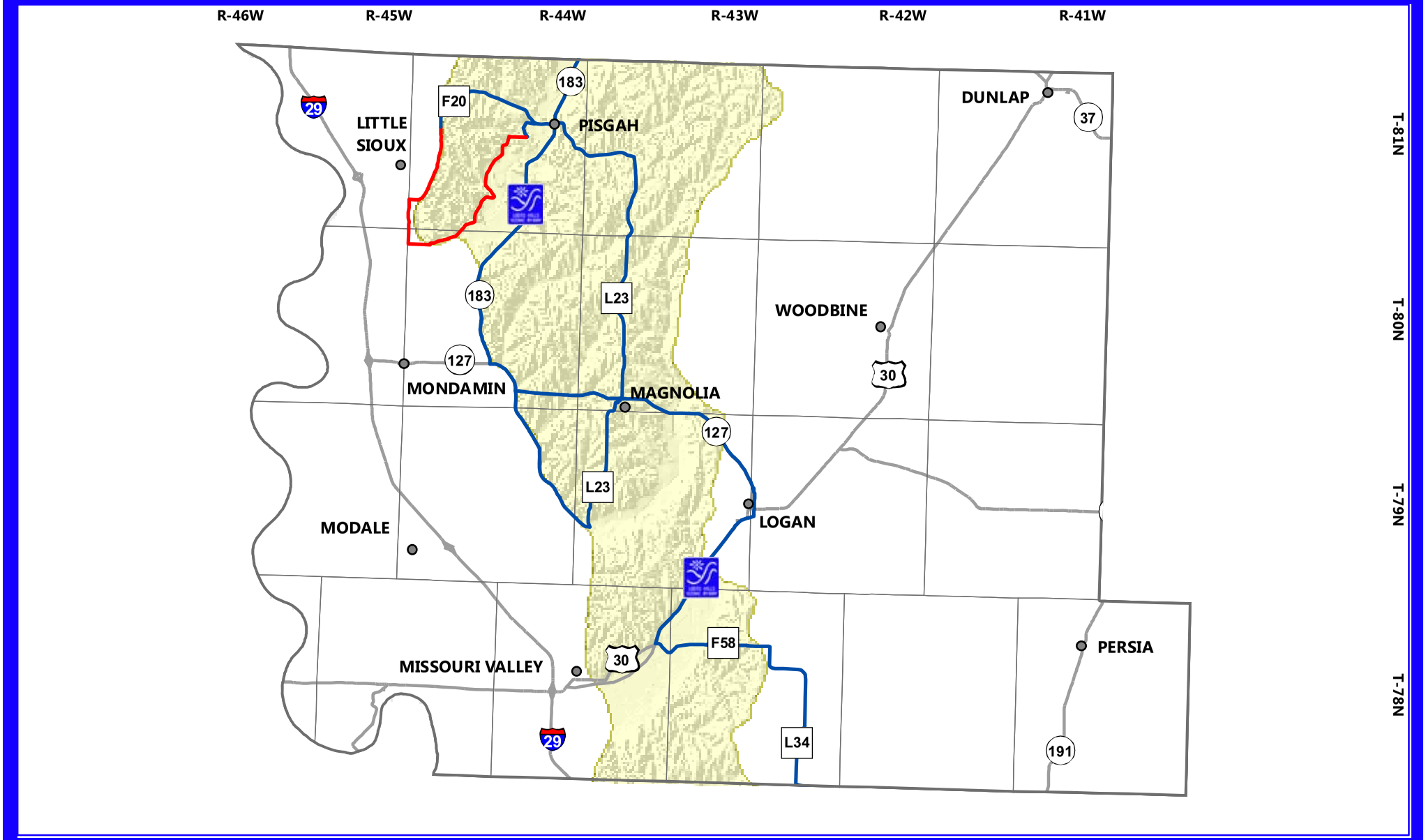


# Route Pavement Types

## Harrison County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department

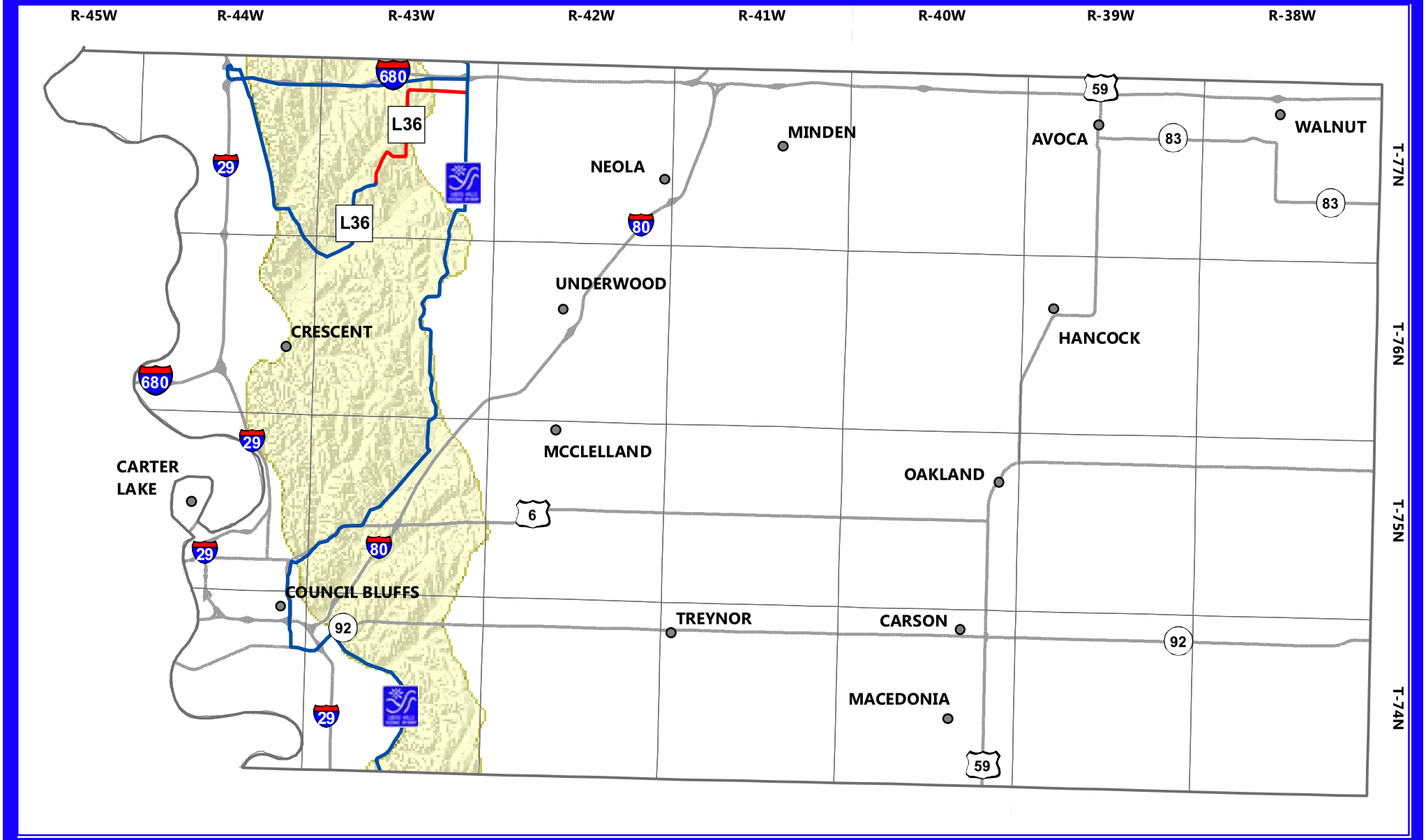


# Route Pavement Types

## Pottawattamie County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department




Gravel
Paved
Highways
Township Line
Loess Hills Landform Region

0 1.25 2.5 5 7.5 Miles

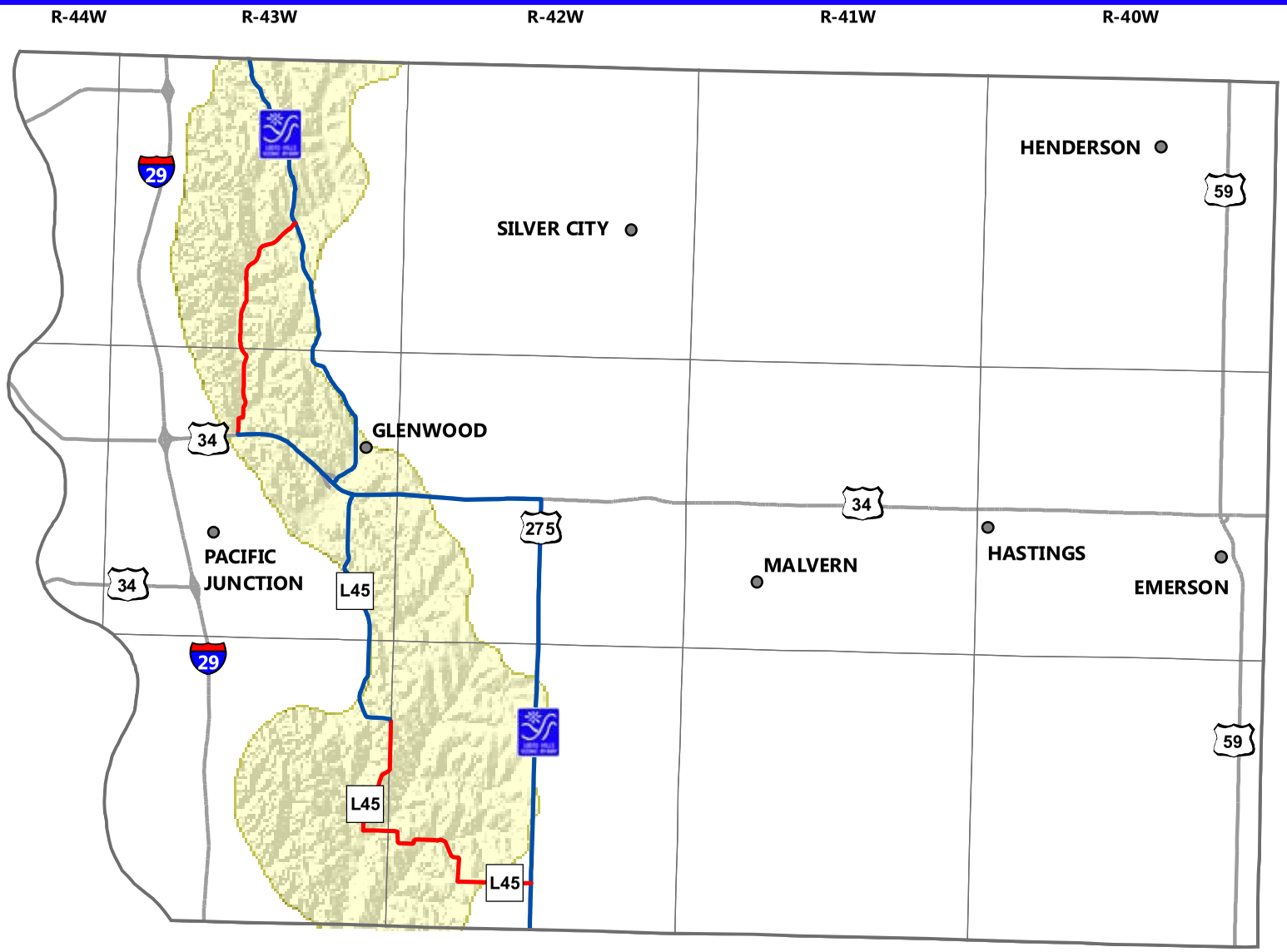
N
W
E
S

# Route Pavement Types

## Mills County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department




Gravel
Paved
Highways
Township Line
Loess Hills Landform Region

0 1 2 4 6 Miles

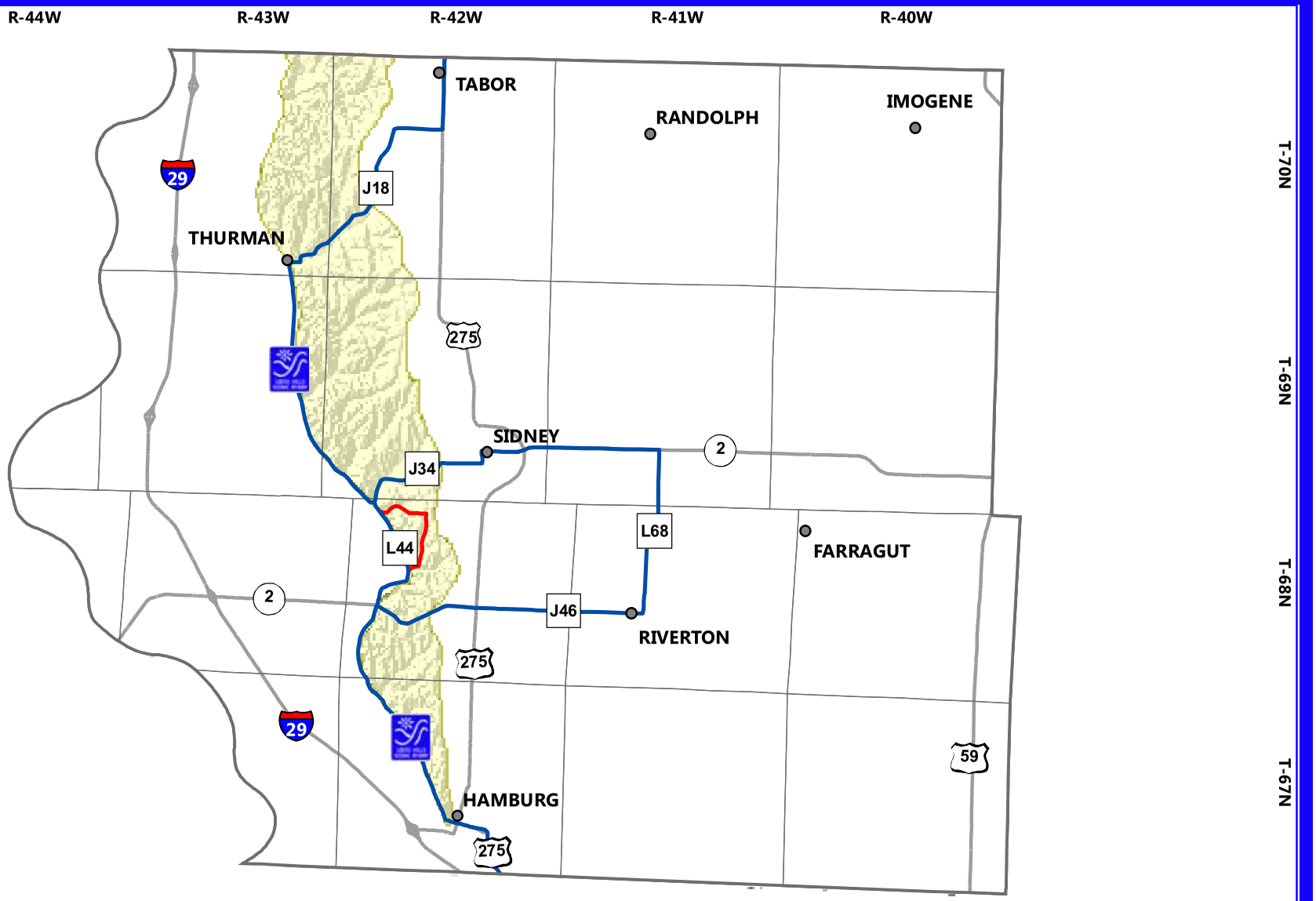
N W E S

# Route Pavement Types

## Fremont County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department




Gravel
Paved
Highways
Township Line
Loess Hills Landform Region

0 1.25 2.5 5 7.5 Miles

N W E S

# Loess Hills Scenic Byway *Corridor Management Plan*

### *What are Scenic Byways?*

Scenic Byways are special roads that often take travelers "off the beaten path" and provide access to sights and experiences they might otherwise miss. Scenic byways offer travelers an alternative route to beautiful scenery, cultural and historical resources, and recreational activities. They may be spectacular destinations or local routes long admired by a community (Scenic America 1, 1995).

Scenic byways also:

- Promote interest in the cultural resources and natural beauty of an area;
- Interpret the special qualities of an area that increase appreciation for, and commitment to, their protection;
- Attract visitors who bring additional income and economic activity to the area;
- Provide an opportunity for growth management by encouraging appropriate development;
- Provide travelers with an enjoyable and relaxing experience;
- Guide visitors to sites not on principal highways offering a means to draw tourists to all areas of a region;
- Contribute to regional greenways, heritage areas, and trail development efforts;
- Preserve important community-valued characteristics; and
- Create ties within and between communities due to sharing a common vision (Scenic America 1, 1995).

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Scenic byways pass through corridors that reflect the special qualities of a region. These corridors consist of the area and features influenced by, and that have an impact on, the scenic byway. Scenic byway corridors include the roadway itself, right-of-way, area visible from the roadway and communities and attractions in the immediate vicinity of the roadway. Corridors also include roads, communities, attractions and landscapes that, although not directly associated with the roadway, are integral to the scenic byway.

### *Corridor Management Plans*

A corridor management plan is a locally developed and supported strategy to balance the conservation of a scenic byway corridor's special qualities with the use and enjoyment of those same resources. It allows communities to consider all options about how they want to use a byway corridor, including conservation, enhancement, economic development, and tourism (Scenic America 1, 1995).

According to the Federal Highway Administration's National Scenic Byways Program:

> A corridor management plan, developed with community involvement, must be prepared for the scenic byway corridor proposed for national designation. It should provide for the conservation and enhancement of the byway's intrinsic qualities as well as the promotion of tourism and economic development. The plan should provide an effective management strategy to balance these concerns while providing for the users' enjoyment of the byway (U.S. Government Federal Register 26759, 1995).

Corridor management plans help direct the activities along a scenic byway in order to protect, enhance and develop the resources of the byway and its corridor. Community groups, agencies and others responsible for the byway can use the corridor management plan to coordinate their actions and increase the efficiency of resources expended to manage the byway and corridor. Active public involvement in the management decision-making process increases community pride in, appreciation for, and support of the qualities and features of the scenic byway and its corridor.

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### *Loess Hills Scenic Byway Corridor Management Plan*

The Loess Hills Scenic Byway *Corridor Management Plan* meets the objectives listed above including those of the Federal Highway Administration. The *Corridor Management Plan* for the Loess Hills Scenic Byway is a collection of strategies, recommendations and tools developed primarily by the Byway's principal stakeholders for their use in protecting, enhancing, developing and promoting the resources of the Scenic Byway and its Corridor.

More specifically, the Loess Hills Scenic Byway *Corridor Management Plan*:

- Provides an assessment of the Scenic Byway Corridor's most significant resources;
- Identifies the need for additional public amenities as well as improvements to existing facilities,
- Develops standards and recommendations for signs, interpretive sites and bicycle routes associated with the Scenic Byway;
- Presents model land use tools for the Scenic Byway Corridor; and
- Recommends actions to develop the tourism potential of the Loess Hills and Scenic Byway.

Similar to establishing the Loess Hills Scenic Byway itself, the *Corridor Management Plan* was developed with the participation and support of local communities, organizations and agencies directly responsible for managing the resources of the Scenic Byway and its Corridor. Representatives of these entities comprise the Loess Hills Scenic Byway and the Loess Hills Scenic Byway Council. Team members worked with hundreds of residents and visitors to complete the *Plan*. Professionals with numerous public agencies and private organizations assisted the Scenic Byway Management Team in preparing the *Corridor Management Plan*.

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Loess Hills Scenic Byway stakeholder meeting Golden Hills

## Stakeholders of the *Corridor Management Plan*

The authors of this *Corridor Management Plan* view that virtually anyone with an interest in the future of the Loess Hills and its Scenic Byway will have a stake--vested interest--at one level or another in this *Plan*. For the general purpose of distinguishing levels of interest, three broad categories of stakeholders are suggested:

- Primary Stakeholders
- Supporting Stakeholders
- Constituent Stakeholders

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### *Primary Stakeholders*

The Primary Stakeholders of the *Corridor Management Plan* will be those organizations which are, or would be, directly responsible for protecting, enhancing developing, and promoting the resources of the Loess Hills Scenic Byway Corridor. These Primary Stakeholders are ultimately responsible for implementing the strategies, recommendations and tools set forth in this *Corridor Management Plan*.

Primary Stakeholders include officials and staff of the following:

- Local governments, public agencies, boards and commissions of the seven counties and 18 cities and towns through which the Loess Hills Scenic Byway passes;
- Western Iowa Tourism Region;
- Council Bluffs Convention and Visitor Bureau;
- Sioux City Convention and Visitor Bureau;
- Golden Hills RC&D;
- Iowa DOT;
- Iowa DED;
- Iowa DNR; and
- Iowa Department of Cultural Affairs

### *Supporting Stakeholders*

Loess Hills Scenic Byway Supporting Stakeholders are entities with activities and programs that can directly and indirectly support the actions of the Primary Stakeholders defined above. Important Supporting Stakeholders of the Scenic Byway at the local, regional, state and national levels include, but are not limited to:

- Local Level
  - ◊ Chambers of commerce
  - ◊ Economic development organizations
  - ◊ Historical societies and preservation commissions
  - ◊ Community groups and civic organizations

- Regional Level
  - ◊ Metropolitan Area Planning Association
  - ◊ Regional Transportation Planning Affiliation 18
  - ◊ Regional Transportation Planning Affiliation 13
  - ◊ Regional Transportation Planning Affiliation 4
  - ◊ Soil and Water Conservation Districts

- State Level
  - ◊ State Historical Society of Iowa
  - ◊ Iowa Chapter of the Nature Conservancy
  - ◊ Iowa Prairie Network
  - ◊ Iowa Natural Heritage Foundation

- National
    - ◊ Federal Highway Administration
    - ◊ Natural Resources Conservation Service
    - ◊ National Park Service
    - ◊ Environmental Protection Agency
    - ◊ U.S. Fish and Wildlife Service
    - ◊ U.S. Forest Service

### *Constituent Stakeholders*

In addition to the Primary and Supporting stakeholders, there are those people, Constituent Stakeholders, who support the efforts of the Primary and Supporting Stakeholders by participating in volunteer activities, land management programs, marketing and business planning and other activities that focus on and support the preservation, conservation and promotion of the Loess Hills Scenic Byway Corridor. The Scenic Byway's Constituent Stakeholders are:

- Land owners and managers
- Business owners and operators
- Interested individuals

## The *Corridor Management Plan* Document

The Loess Hills Scenic Byway *Corridor Management Plan* can help Primary, Supporting and Constituent Stakeholders manage, enhance, develop and protect the resources of the Byway and its Corridor. In guiding the way, the *Plan* is a:

- Reference for Scenic Byway and Corridor related data;
- Framework for short and long-term action;
- Record of accomplishments in implementing the plan; and
- Supplement to other sources of information on the Byway and Corridor.

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Development of the *Corridor Management Plan* initially involved the completion of a series of special studies on various aspects of the Loess Hills Scenic Byway Corridor. Special studies addressed resource assessment, public participation, demand for amenities, tourism development, land use strategies, signage and other topics. Significant findings and recommendations from each study have been incorporated throughout the *Plan*. These studies include:

- *Loess Hills Landscape Resource Study*
- *Visual Preference Study*
- *Resource Assessment Rating System*
- *Public Input in Corridor Planning Study*
- *Loess Hills Scenic Byway Viewshed Study*
- *Public Amenity Spacing Study*
- *Loess Hills Scenic Byway Marketing Plan*
- *Loess Hills Scenic Byway Sign Plan*
- *Economic Impact and Valuation of Recreation in the Loess Hills: Survey & Results*
- *Bicycle Route Selection Study*
- *Land Use Strategies Study*
- *Low Impact Development Study*
- *Cultural Resources Study*
- *Loess Hills Recreation Plan*

The *Corridor Management Plan* consists of the following five sections:

- Introducing the Plan
- Understanding the Resources
- Understanding Tourism
- Corridor Development Actions
- References

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The first section, "Introducing the Plan," discusses the processes used for planning and developing the Loess Hills Scenic Byway. It also discusses the role of Byway stakeholders in implementing the *Plan*.

The "Understanding the Resources" section identifies the intrinsic qualities of the Loess Hills, or special natural and human-made features and resources. Intrinsic qualities are the key to a scenic byway's creation and existence.

Sharing the intrinsic qualities of Iowa's Loess Hills with visitors creates opportunities for economic and tourism development. The third section, "Understanding Tourism," examines the economic impact and market potential of tourism in the Loess Hills.

In order to manage and protect the intrinsic qualities in the Loess Hills Scenic Byway Corridor, the *Plan's* fourth section, "Corridor Development Actions," contains a series of recommended actions. A matrix presented in this section suggests the "Leaders" and "Participants" responsible for completing these actions along with levels of priority. Leaders and Participants are the stakeholders of the Loess Hills Scenic Byway.

The final section, "References," lists the references used in developing the *Plan*.

Implementation of the Loess Hills Scenic Byway *Corridor Management Plan* will be an evolving and continuous process. As such, the *Plan* is a flexible and adaptive document that responds to and reflects changes in the Scenic Byway Corridor. The contents and notebook format of the *Corridor Management Plan* have been designed and assembled to facilitate the revision of existing information, incorporation of additional materials and recording of accomplishments.

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***Notes:***

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# Understanding the Resources

## Section Contents

Intrinsic Qualities and Scenic Byways 2-2

Intrinsic Qualities and the Loess Hills Scenic Byway 2-3

Understanding the Natural Quality 2-5

Understanding the Archeological Quality 2-15

Understanding the Scenic Quality 2-23

Understanding the Historic Quality 2-29

Understanding the Cultural Quality 2-35

Understanding the Recreational Quality 2-40

Understanding the Human Quality 2-47

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## Intrinsic Qualities and Scenic Byways

Scenic byways are roadways that travel through corridors possessing significant tangible and intangible resources (natural and human-made resources or features). These special resources are a scenic byway corridor's "intrinsic qualities." They are the most important features that distinguish the character of the scenic byway corridor. More specifically, intrinsic qualities are defined as being (US Government Federal Register 26759, 1995):

- Natural
- Scenic
- Historic
- Archeological
- Cultural
- Recreational

They are features of any area that are considered:

- Representative
- Unique
- Irreplaceable
- Distinctly characteristic

Intrinsic qualities are the key to a scenic byway's creation and management. The selection of roadways as part of a scenic byway depends on the presence of one or more intrinsic qualities. The Federal Highway Administration's National Scenic Byways Program has guidelines for designation of roadways to become scenic byways in areas that possess certain intrinsic qualities. To qualify as a National Scenic Byway a roadway corridor must possess at least one of the six intrinsic qualities. Management of a scenic byway corridor strives to balance the use and conservation of its intrinsic qualities. A corridor management plan presents strategies and identifies mechanisms that communities, public agencies and private organizations can use to develop, enhance and protect a scenic byway corridor's intrinsic qualities.

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## Intrinsic Qualities and the Loess Hills Scenic Byway

The special character and value of Iowa's Loess Hills are products of the unique and diverse resources they possess. As rich as the Loess Hills are in remarkable natural features, archaeological heritage and breathtaking scenery, they are equally endowed in history and recreational opportunities. This wealth of resources--intrinsic qualities--in the Loess Hills and the desire of local communities to protect and share them were principal considerations in the establishment of the Loess Hills Scenic Byway.

The Loess Hills Scenic Byway Corridor is extraordinary in that it possesses resources in all six of the intrinsic quality categories identified by the Federal Highway Administration's National Scenic Byways Program. The strategies, recommendations and tools presented in this *Corridor Management Plan* encourage the sound management and protection of these intrinsic qualities. Implementation of the *Plan* will provide residents and visitors with opportunities to better understand, appreciate and enjoy this unique region of the United States and the world. Furthermore, the resource assessment and management guidelines presented in this *Plan* will contribute toward future state and national designations for the Loess Hills Scenic Byway.

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### *Intrinsic Qualities - What needs to be done?*

The next section of the *Corridor Management Plan* examines each of the intrinsic qualities found in the Loess Hills Scenic Byway Corridor. These intrinsic qualities are, once again:

- Natural
- Scenic
- Historical
- Archaeological
- Cultural
- Recreational
- Human

"Human" quality has been added to the list of intrinsic qualities because of the important role that people play in protecting, managing and promoting the resources of the Loess Hills Scenic Byway Corridor.

The discussion of each of the intrinsic qualities highlights the most significant resources representative of that quality. In addition, discussion of the various intrinsic qualities includes a brief statement of "What needs to be done?" to accomplish their improved management and protection. Actions recommended to enhance and protect each of the intrinsic qualities are presented in the "Corridor Development Actions" section of the *Corridor Management Plan*.

# Understanding the Natural Quality

### *Definition of Natural Quality*

Natural quality applies to those intrinsic natural features in the corridor's landscape that exist in a relatively undisturbed state. These features predate the arrival of human populations and may include geological formations, fossils, landform, water, vegetation and wildlife. There may be evidence of human activity, but the natural features reveal minimal disturbances (U.S. Government Federal Register 26761, 1995).

### *What do we know?*

From a national perspective, the Loess Hills is the most unique open space in Iowa (Iowa Open Space Plan 32, 1988). The unusual topographic and ecological characteristics of this landform region are products of the thick loess deposits and the special physical properties of the loess soil. While loess deposits are widespread throughout Iowa and much of the Midwest, in few other places do they reach thickness in excess of 200 feet as found in the Loess Hills. Loess soil is highly permeable and has the ability to stand at a very steep slope which promotes development of exceptionally well-drained, high relief landscape. This, together with strong winds and intense sunlight provides a special environment for rare and representative plant and animal species.

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Loess Hills landscape D. Poggensee

Many of the Loess Hills' special natural qualities lie within the region's upland prairies. Native prairie, once widespread across the Midwest, has been reduced to less than one percent of its original extent in Iowa (Ott 2-3, 1995). The Loess Hills contain most of Iowa's remaining native prairie, including the largest expanses of undisturbed, self-sustaining prairie in the state. Today, these remaining native grasslands of the Loess Hills are a significant part of Iowa's prairie heritage.

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Native prairie in the Loess Hills provides habitat for a large number of plants and animals that are not found in other areas of Iowa. In fact, Iowa's Loess Hills have been called the state's most significant region for unusual plants and rare animals (Roosa 163, 1986). A total of 45 Loess Hills species are classified as rare in Iowa. Of those, 21 are on the state's threatened or endangered list (Mutel 161, 1989).

Hummingbird D. Poggensee

**Representative Natural Resources in the Loess Hills Scenic Byway Corridor**

Specific resources in the Loess Hills are most representative of the region's intrinsic natural quality. Those resources that best depict the unique natural quality of the Loess Hills Scenic Byway Corridor include:

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- **National Natural Landmark:** The National Park Service has designated more than 10,000 acres of the Loess Hills as a National Natural Landmark. This national designation recognizes the Loess Hills as the best example of loess topography in the United States. The designation highlights the uniqueness of the Loess Hills in the world and the landform's importance from a state perspective. National Natural Landmark designation of the Loess Hills comprises two sites, the Turin site in Monona County (7,440 acres) and the Little Sioux/Smith Lake site in Harrison County (2,980 acres). These sites were selected as being most representative of the Loess Hills landform in western Iowa.

National Landmark Dedication D. Poggensee

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- **Iowa State Preserves:** The Iowa DNR has designated four areas consisting of 1,400 acres in the Loess Hills as part of the Iowa State Preserves System. The Iowa State Preserve system was created to identify and preserve, for this and future generations, portions of Iowa's most significant and representative natural, geological, archaeological, historical, and scenic resources and features. The four Iowa State Preserves in the Loess Hills are:
    - ◊ Five Ridge Prairie Preserve in Plymouth County (789 acres)
    - ◊ Mount Talbot Preserve in Woodbury County (90 acres)

- ◊ Turin Loess Hills Preserve in Monona County (220 acres)
- ◊ Sylvan Runkel Preserve, in Monona County (330 acres)

These Preserves in the Loess Hills provide the highest level of recognition and protection for the best examples of the region's and state's most outstanding natural resources.

In addition to the four established state preserves, the Iowa DNR, as of December 2008, is in the process of naming a new state archaeological preserve on a 917-acre site just south of Glenwood in Mills County. The former home of the Glenwood Resource Center, this area has 117 known archaeological sites. A formal systematic archaeological survey has yet to be completed. It is believed that many more sites will be uncovered during the survey.

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One of four State Preserves in the Loess Hills D. Poggensee

- **The Nature Conservancy Preserves:** The Iowa Chapter of The Nature Conservancy has established two preserves in the Loess Hills: Broken Kettle Grassland (3,220 acres) in Plymouth County, Sioux City Prairie (157 acres) in Sioux City, Woodbury

County, and Folsom Point Preserve (5,021 acres) in Pottawattamie and Mills Counties. This designation recognizes these areas for the significance of their natural features in terms of representing the biodiversity of the Loess Hills. The Nature Conservancy identified, acquired and manages these preserves to protect their unique natural features.

- **Critical Resource Areas:** The Loess Hills region consists of more than 1,200 square miles in western Iowa. The Loess Hills Landscape Resource Study, completed in 1994, determined that many areas of the Loess Hills (658 of 5,047 quarter sections in the study area) contain resources deemed critically important. Critical Resource Areas have been identified based on the presence of fragile soils (predominantly the highly erodible soils of the Ida-Hamburg association with slopes of 20% to 75%) and locations of rare, threatened and endangered plant and animal species. Critical Resource Areas also indicate the presence of significant historical, cultural and archeological resources.

Identification of Critical Resource Areas provides information to better understand and protect the unique resources of the Loess Hills (*Loess Hills Landscape Resource Study* 8, 15, 1994).

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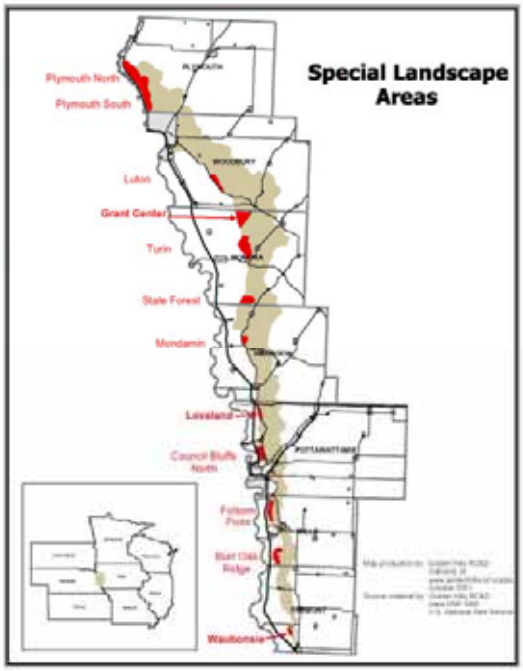
Exposed loess soil is extremely susceptible to erosion D. Poggensee

- **Special Landscape Areas:** In 2001, the National Park Service conducted "The Loess Hills of Western Iowa Special Resource Study and Environmental Assessment." In this study, 12 Special Landscape Areas, were identified that encompass nearly 100,000 acres of the Loess Hills. The twelve areas have been identified because they possess exemplary geologic, topographic and scenic features that best characterize the Loess Hills landform. (*The Loess Hills of Western Iowa Special Resource Study and Environmental Assessment*, 2001) The SLAs identified include:

  - ◊ Broken Kettle SLA in Plymouth County (12,000 acres) 66% protected
  - ◊ Plymouth South SLA in Plymouth County ( 13,549 acres) 12% protected
  - ◊ Luton SLA in Woodbury County (1,941 acres) 38% protected
  - ◊ Grant Center SLA in Woodbury and Monona Counties (5,364 acres) 0% protected
  - ◊ Turin SLA in Monona County ( 15,049 acres) 47% protected
  - ◊ Little Sioux SLA in Monona and Harrison Counties (23,736 acres) 32% protected
  - ◊ Mondamin SLA in Harrison County (5,394 acres) 23% protected

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- ◊ Loveland SLA in Harrison and Pottawattamie Counties (3,828 acres) 36% protected
- ◊ Council Bluffs North SLA in Pottawattamie County (5,028 acres) 0% protected
- ◊ Folsom Point SLA in Pottawattamie and Mills Counties (5,936 acres) 10% protected
- ◊ Bur Oak Ridge SLA in Mills and Fremont Counties (6,000 acres) 1% protected
- ◊ Waubonsie SLA in Fremont County (4,249 acres) 50% protected

Fall migration of waterfowl at DeSoto National Wildlife Refuge D. Poggensee

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- **DeSoto National Wildlife Refuge:** DeSoto National Wildlife Refuge (9,800 acres), located in Harrison County, is one of the US Fish and Wildlife Service's most outstanding facilities. DeSoto is a major resting area in the nation's central flyway for hundreds of thousands of migratory waterfowl. The Refuge protects significant Missouri River floodplain resources and provides a variety of recreational opportunities associated with the River. A visitor center and museum at the Refuge interprets important natural, cultural and historic resources of the region. The Steamboat *Bertrand* Exhibit showcases more than 500,000 artifacts excavated from the *Bertrand,* which sank in the

Missouri River in 1865. The Loess Hills and Missouri River Valley, while geographically distinct, are connected in that the intrinsic qualities of the Loess Hills can seldom be described, or fully appreciated, without understanding their relationship with those of the Missouri River.

### *What needs to be done?*

It is the uniqueness of the region's natural resources and features that contributes most to the special character and significance of the Loess Hills Scenic Byway Corridor. As such, protection of the enormous natural quality of the corridor should receive the highest priority. Increased public awareness combined with sound land use strategies will help accomplish this protection of the Scenic Byway Corridor's natural quality. Specific actions included in the section, "Corridor Development Actions" of the *Corridor Management Plan*, will address the need to:

- Improve the public's enjoyment and understanding of resources that contribute to the unique natural quality of the Loess Hills Scenic Byway Corridor; and
- Implement land use strategies that will protect the most significant and representative natural resources of the Scenic Byway Corridor.

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### *Maps*

State Preserves

National Natural Landmark Area

Prairie Areas

Rare Flora and Fauna

Steep Slope Areas

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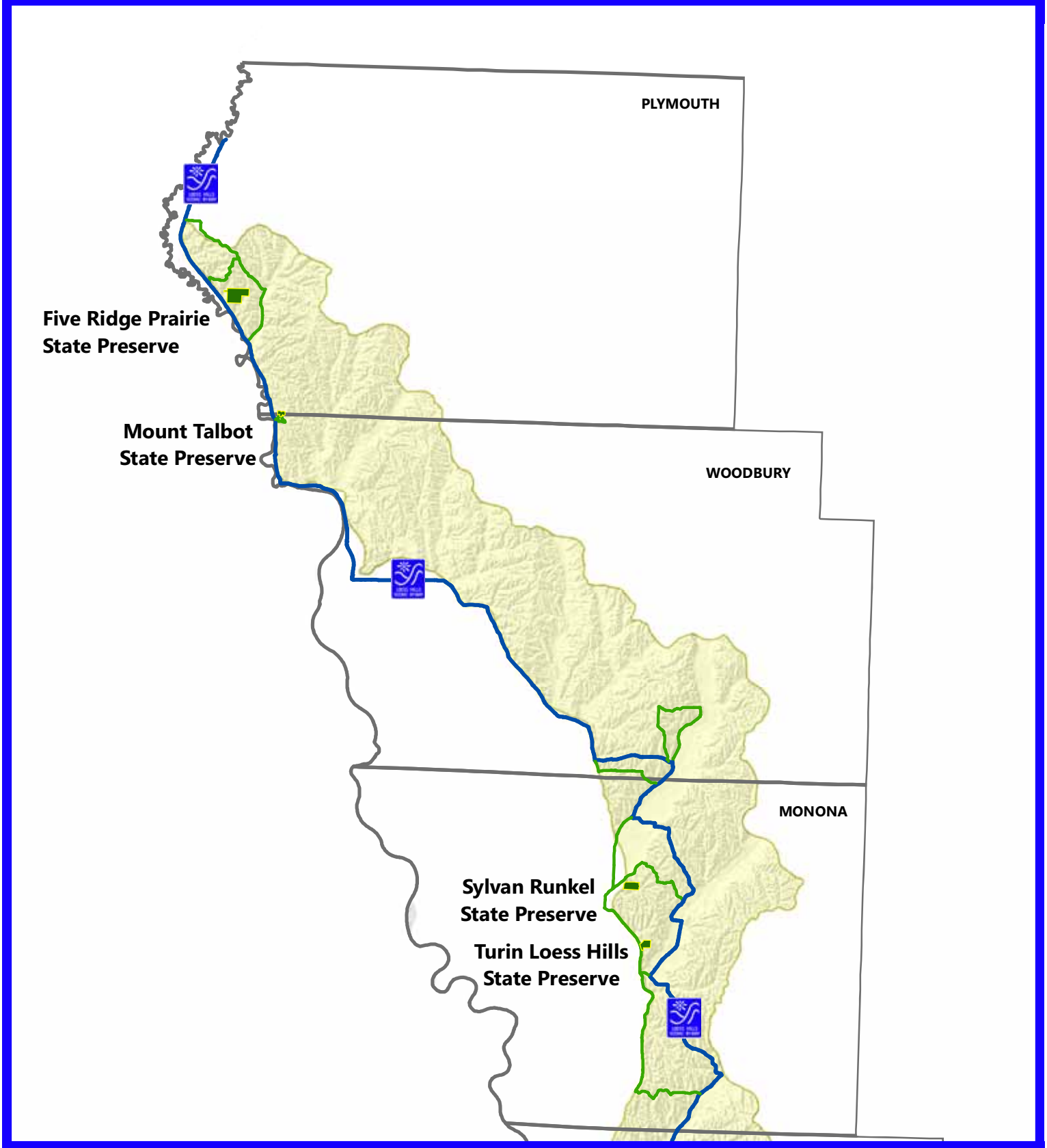
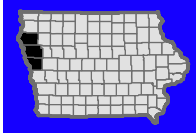
# State Preserves
## Western Iowa Loess Hills

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
State Preserves
Loess Hills Landform

0 2 4 8 12 Miles

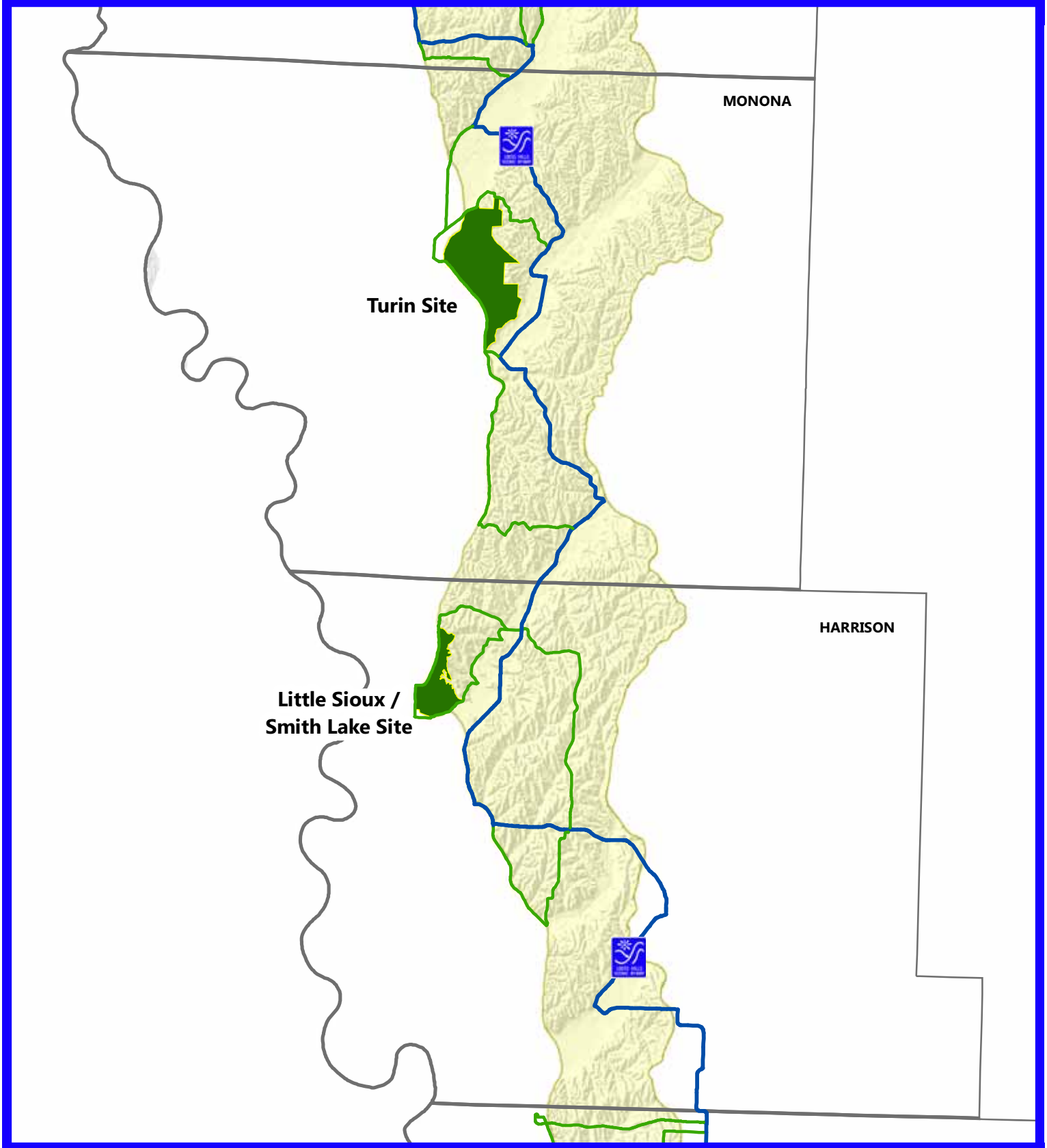
N W E S

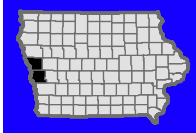
# Natural National Landmark Area

## Western Iowa Loess Hills

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
National Natural Landmarks
Loess Hills Landform

0 1.5 3 6 9 Miles

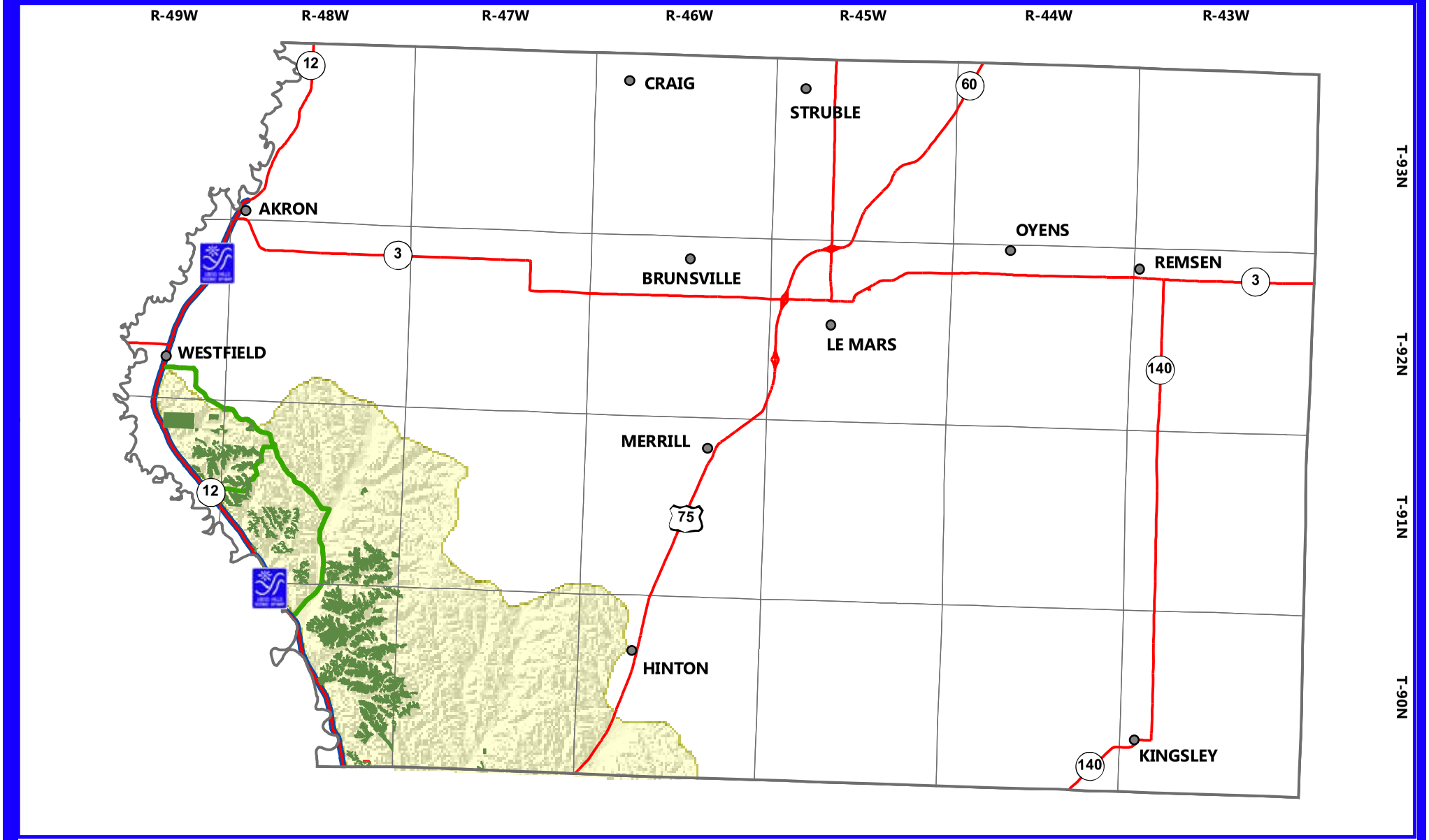
N W E S

# Prairie Areas

## Plymouth County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department




Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Highways
Prairie Areas
Township Line
Loess Hills Landform Region

0 1.5 3 6 9 Miles

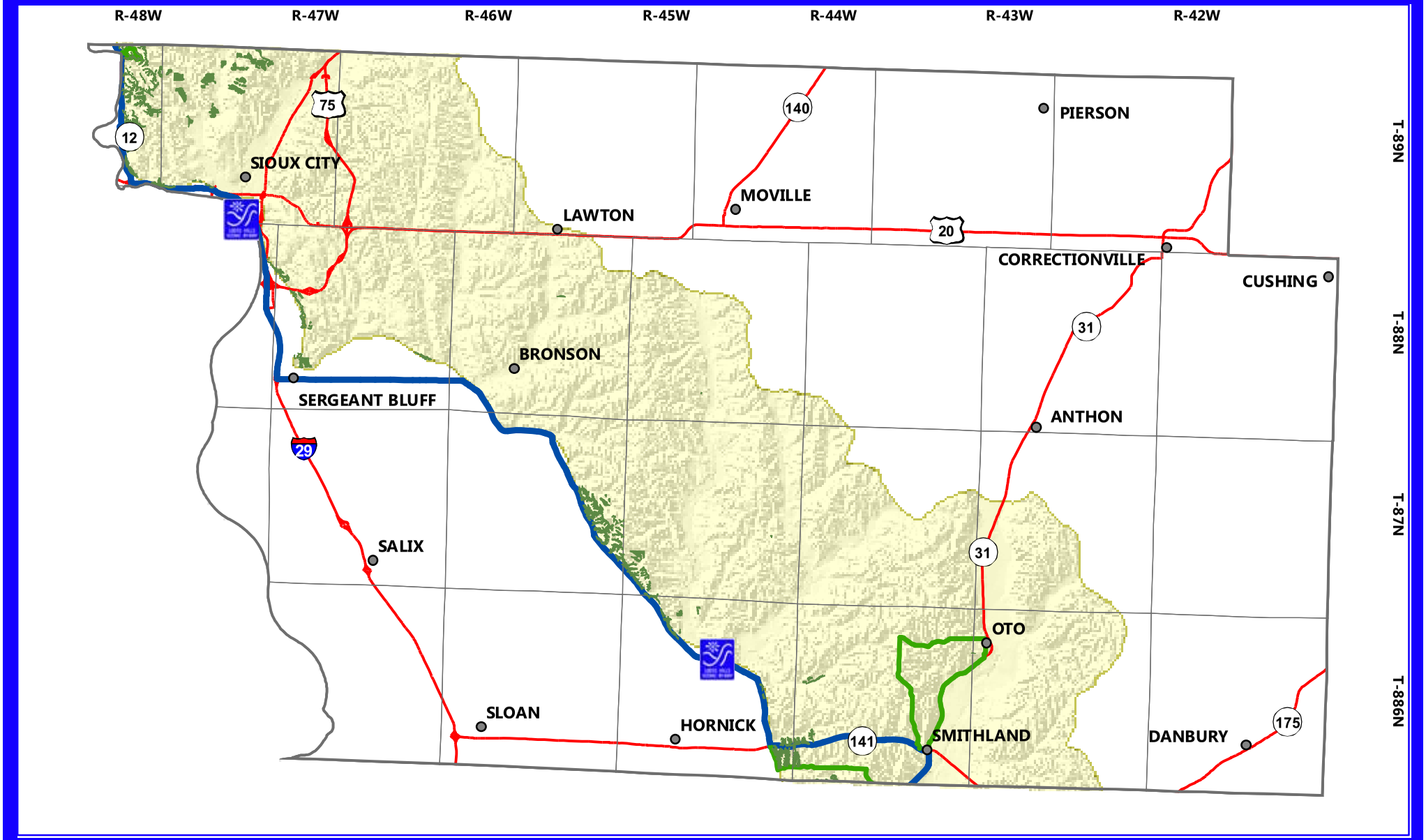
N W E S

# Prairie Areas

## Woodbury County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department




Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Prairie Areas
Township Line
Loess Hills Landform Region

0 1.25 2.5 5 7.5 Miles

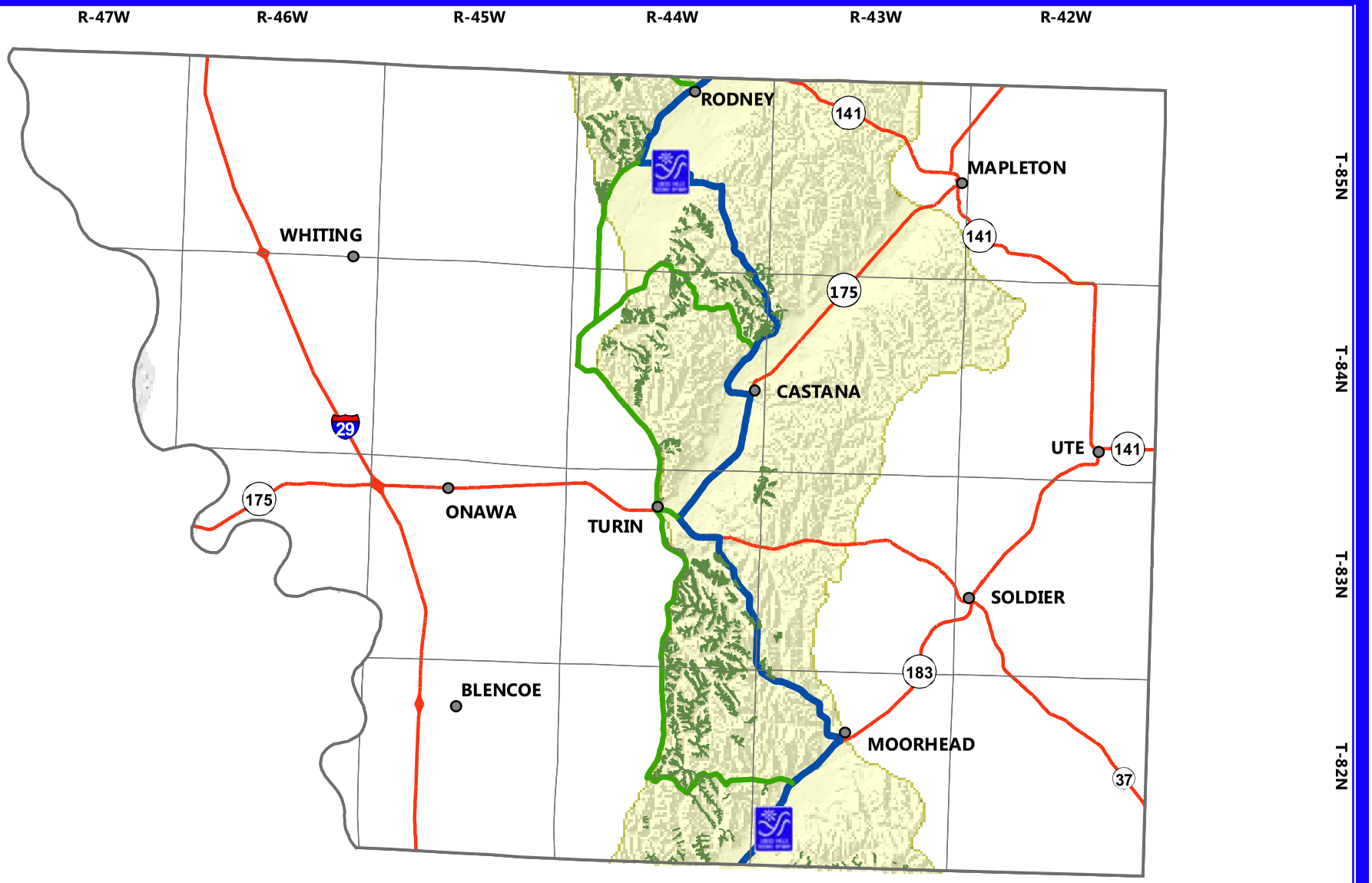
N W E S

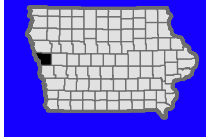
# Prairie Areas

## Monona County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Highways
Prairie Areas
Township Line
Loess Hills Landform Region

0 1.25 2.5 5 7.5 Miles

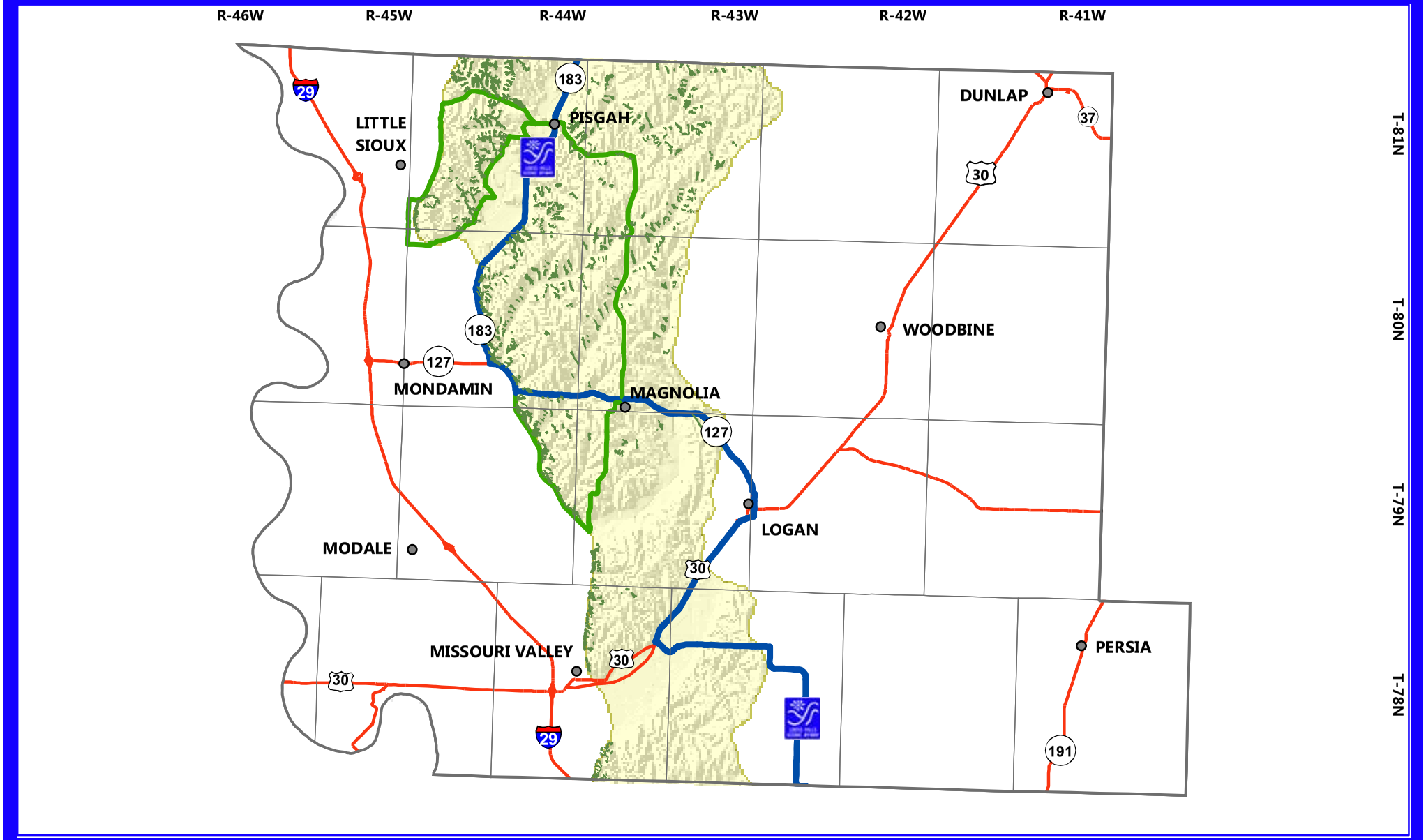
N W E S

# Prairie Areas

## Harrison County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department

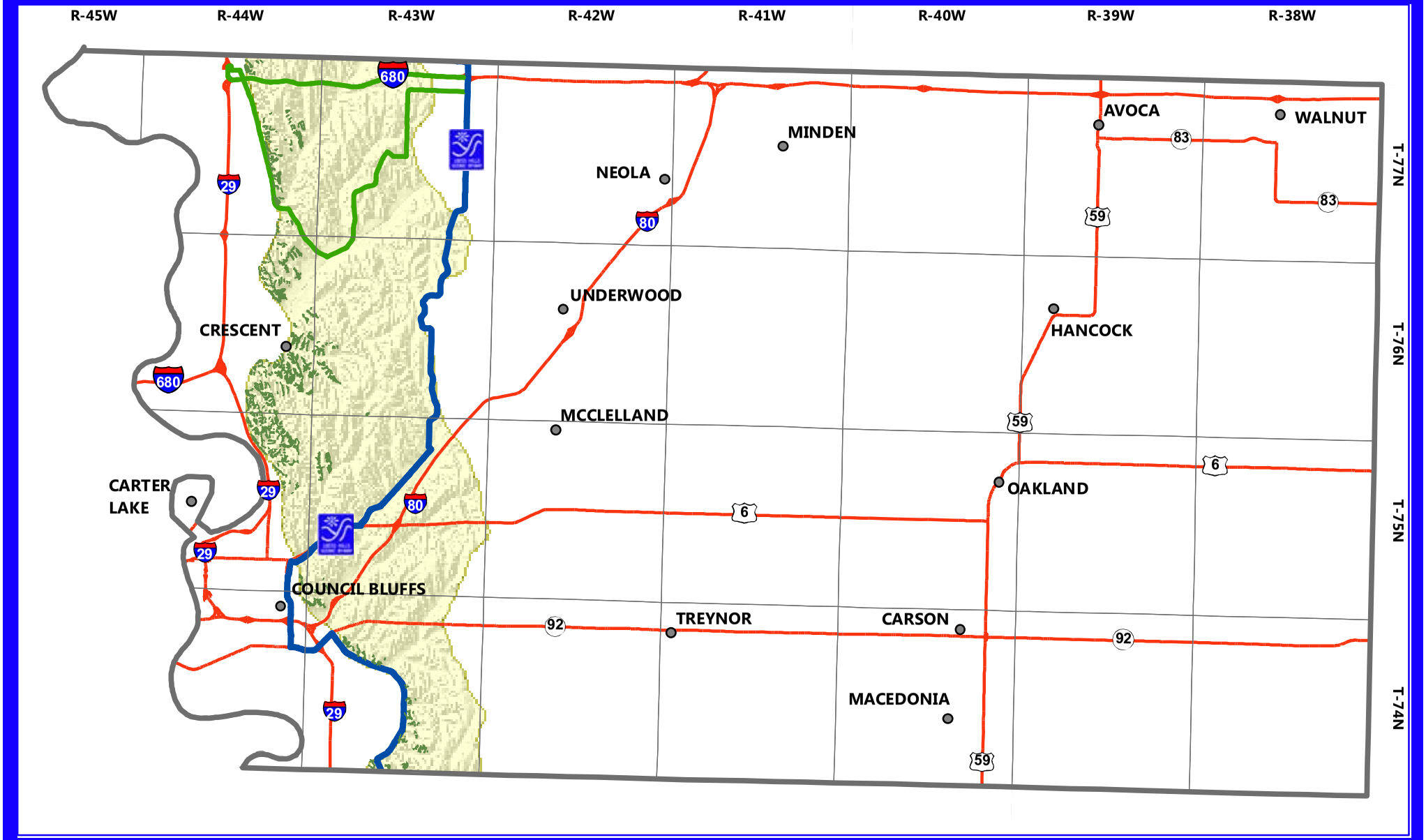


# Prairie Areas

## Pottawattamie County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department




Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Highways
Prairie Areas
Township Line
Loess Hills Landform Region

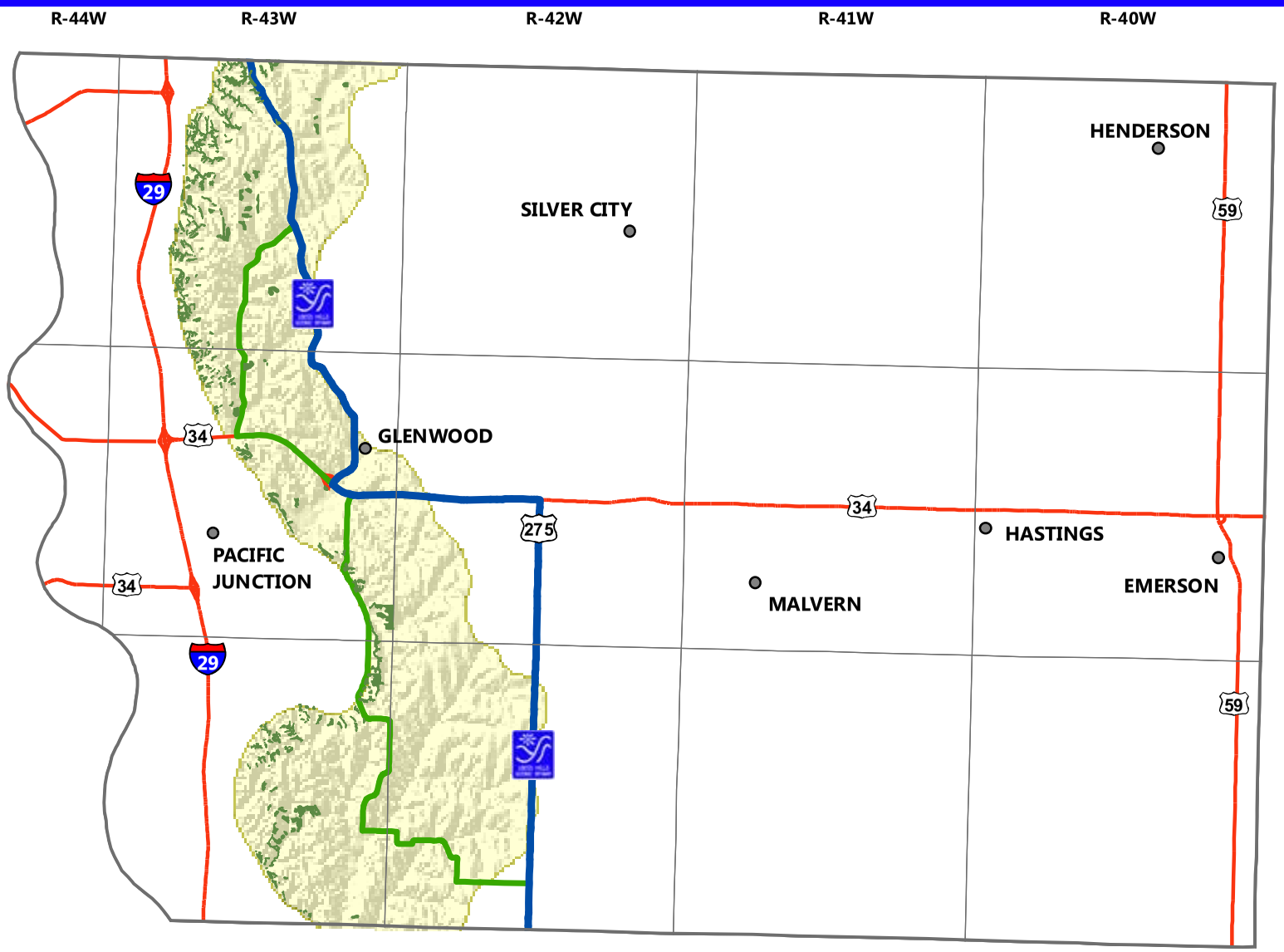
0 1.25 2.5 5 7.5 Miles

N W E S

# Prairie Areas
## Mills County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department




Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Highways
Prairie Areas
Township Line
Loess Hills Landform Region

0 1 2 4 6 Miles

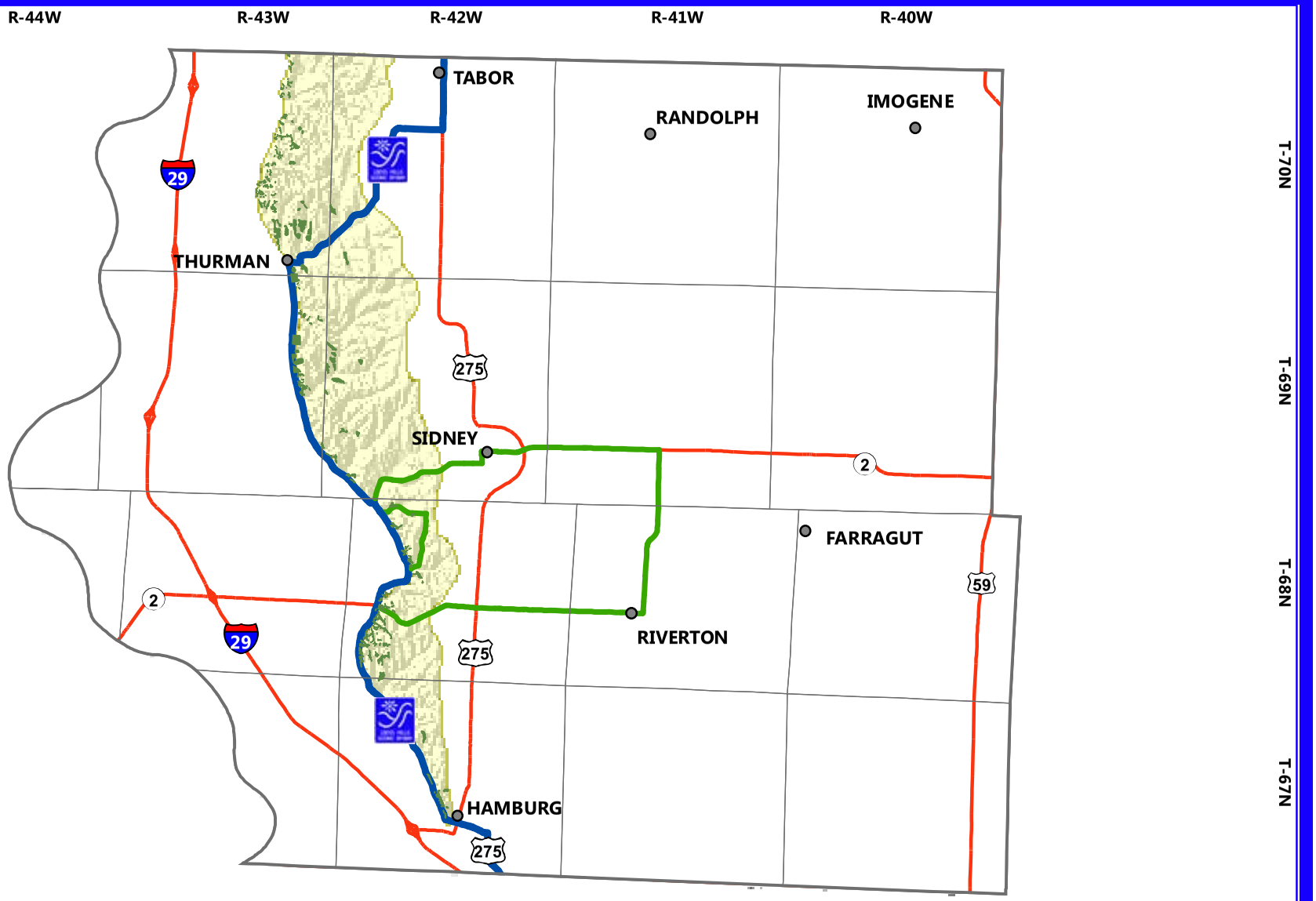
N W E S

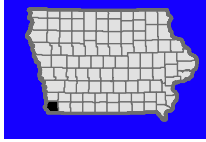
# Prairie Areas

## Fremont County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Highways
Prairie Areas
Township Line
Loess Hills Landform Region

0 1 2 4 6 Miles

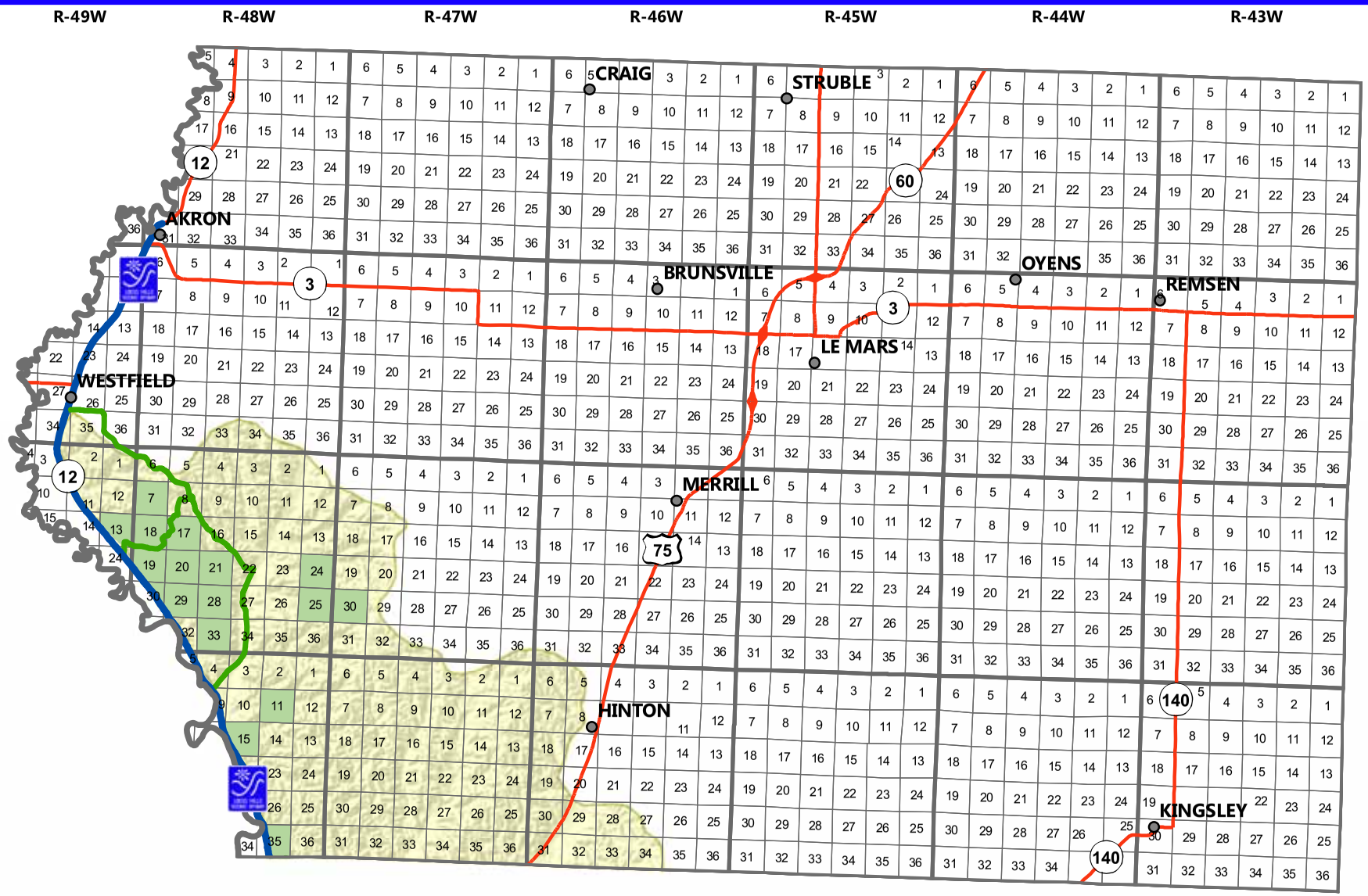
N W E S

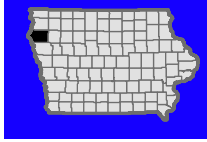
# Rare Flora and Fauna

## Plymouth County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Loess Hills Landform Region
Rare Flora & Fauna
Township Line
Section Line

0 1.25 2.5 5 7.5 Miles

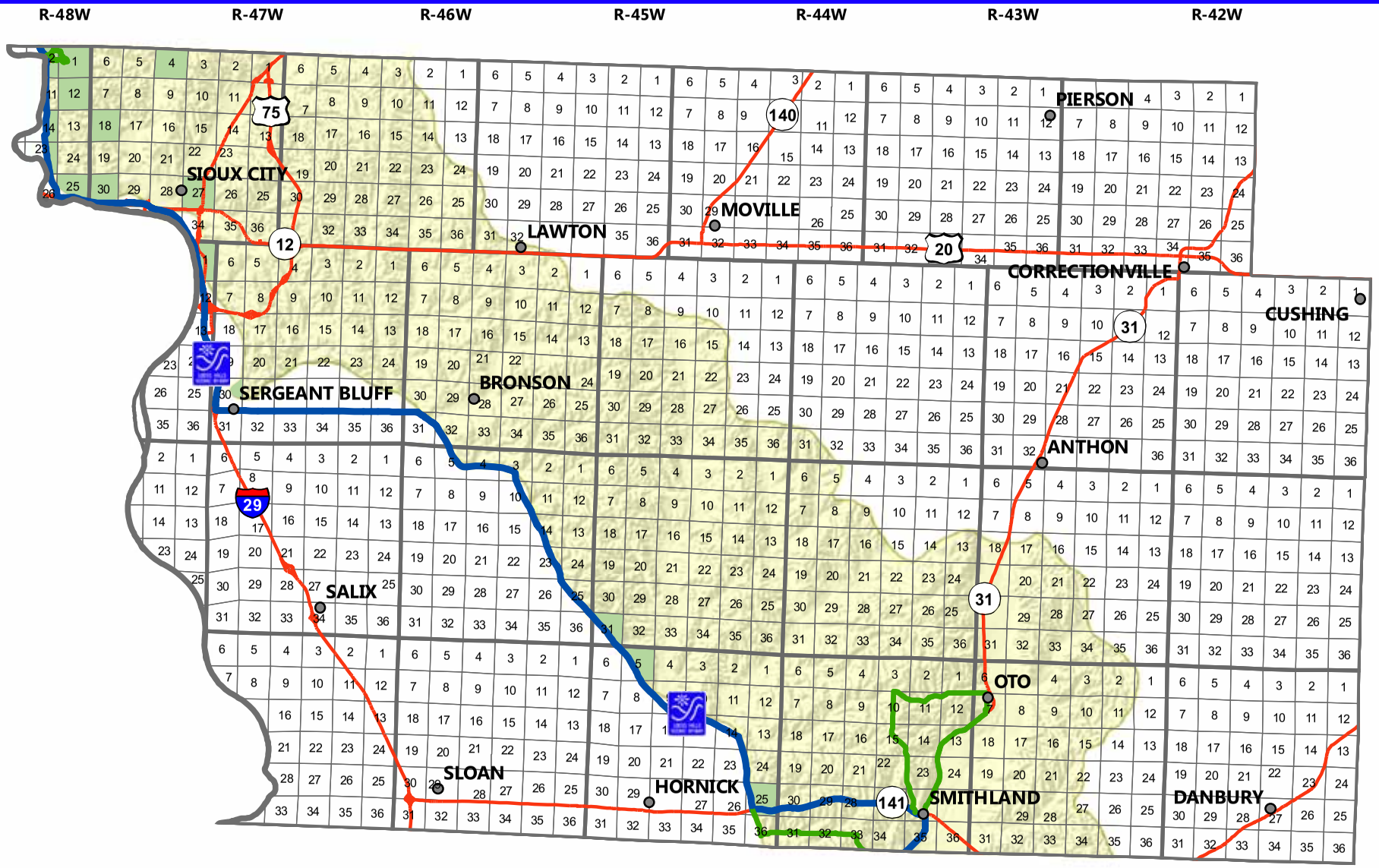
N W E S

# Rare Flora and Fauna

## Woodbury County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department




Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Loess Hills Landform Region
Rare Flora & Fauna
Township Line
Section Line

0 1.25 2.5 5 7.5 Miles

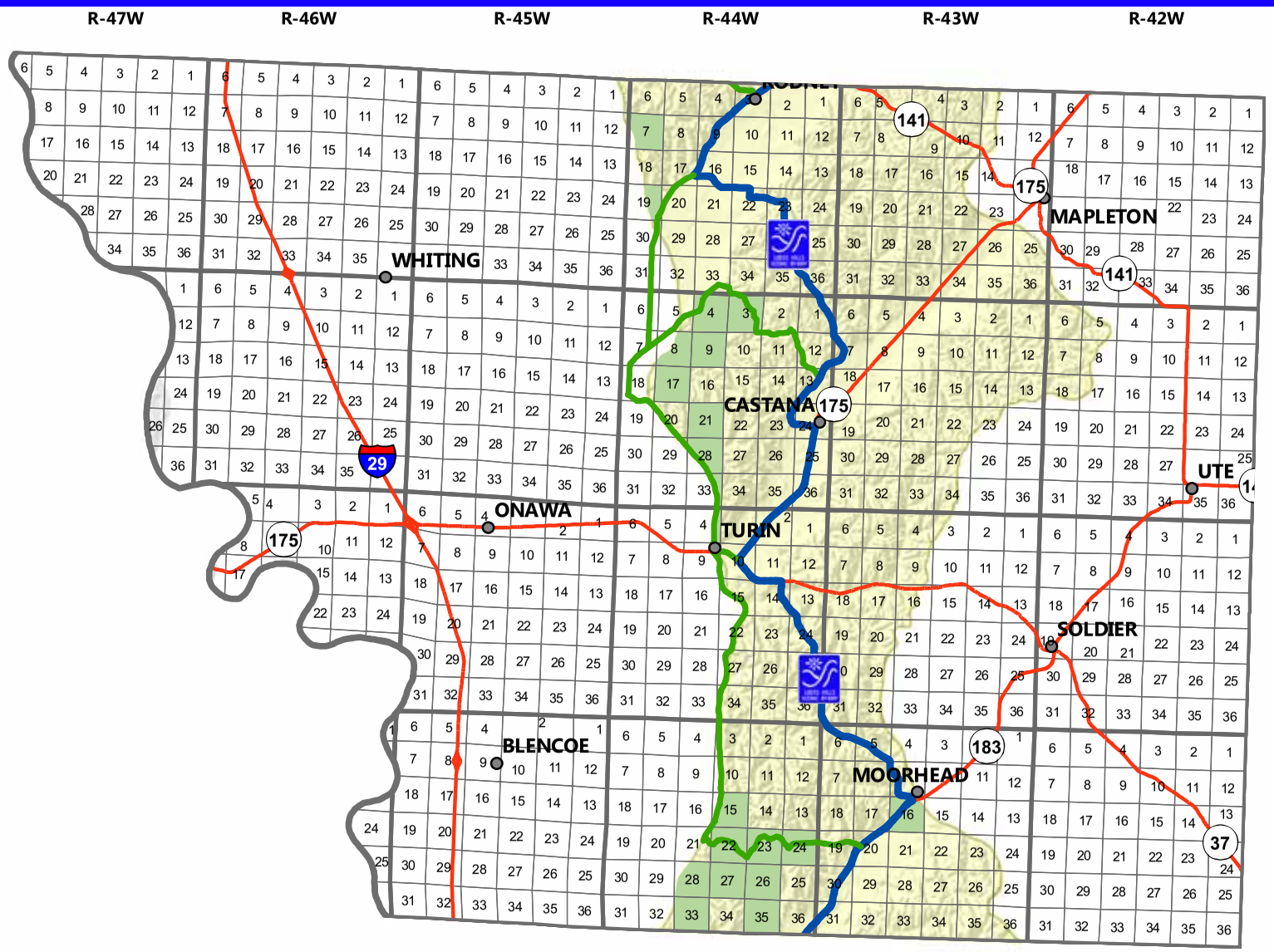
N W E S

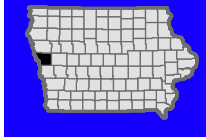
# Rare Flora and Fauna

## Monona County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Loess Hills Landform Region
Rare Flora & Fauna
Township Line
Section Line

0 1.25 2.5 5 7.5 Miles

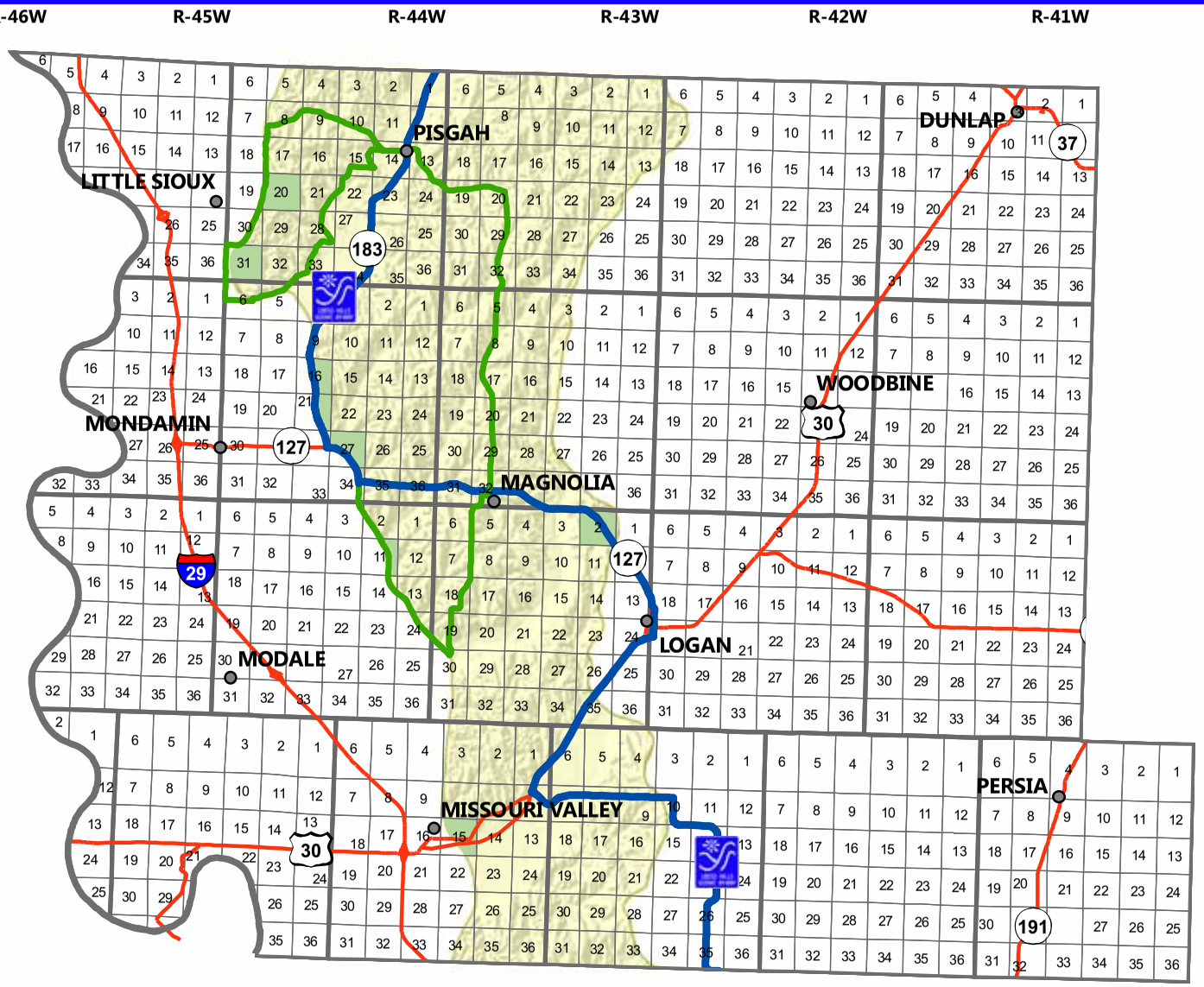
N W E S

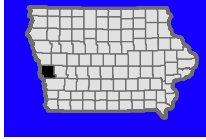
# Rare Flora and Fauna

## Harrison County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Loess Hills Landform Region
Rare Flora & Fauna
Township Line
Section Line

0 1.25 2.5 5 7.5 Miles

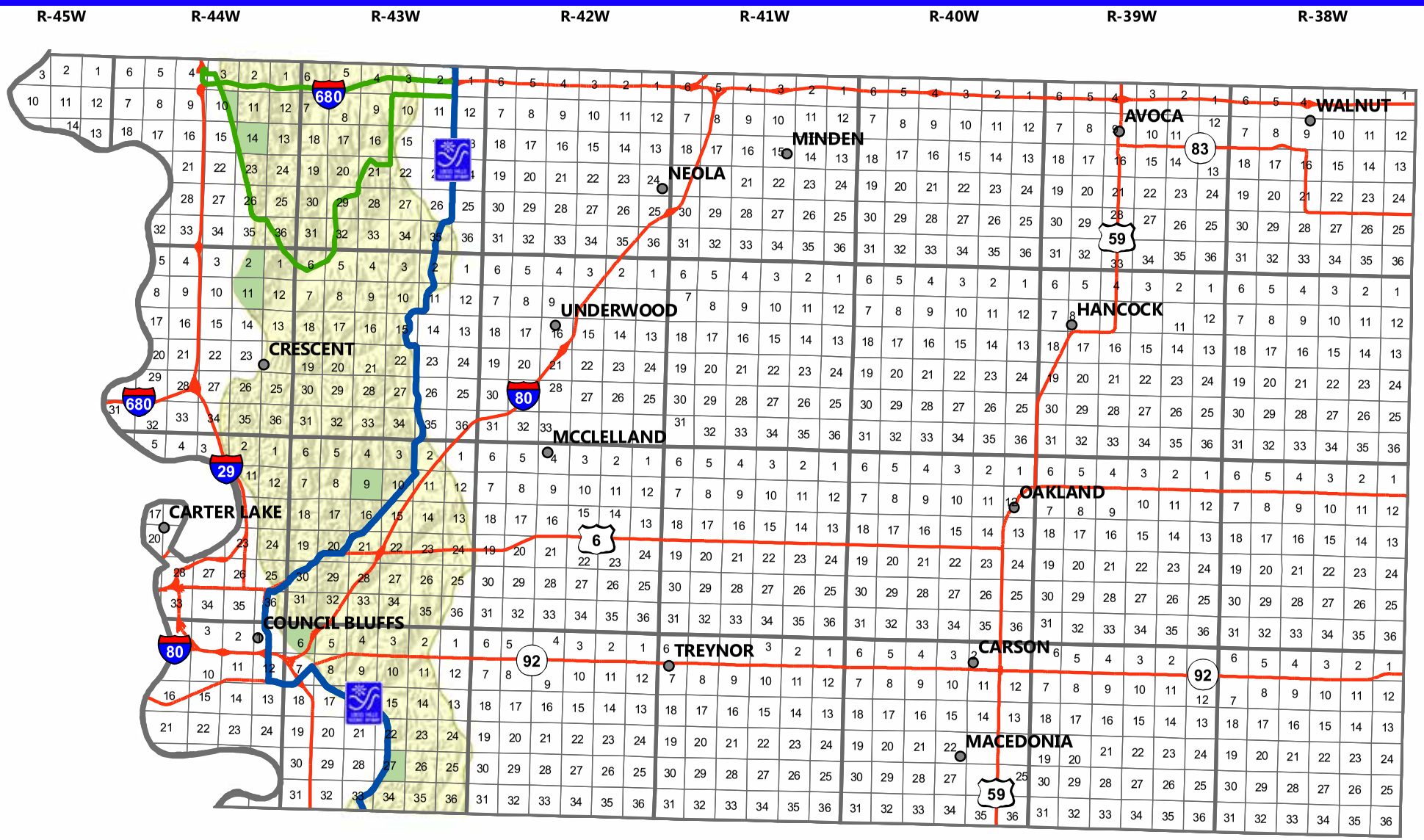
N W E S

# Rare Flora and Fauna

## Pottawattamie County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department




Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Loess Hills Landform Region
Rare Flora & Fauna
Township Line
Section Line

0 1.25 2.5 5 7.5 Miles

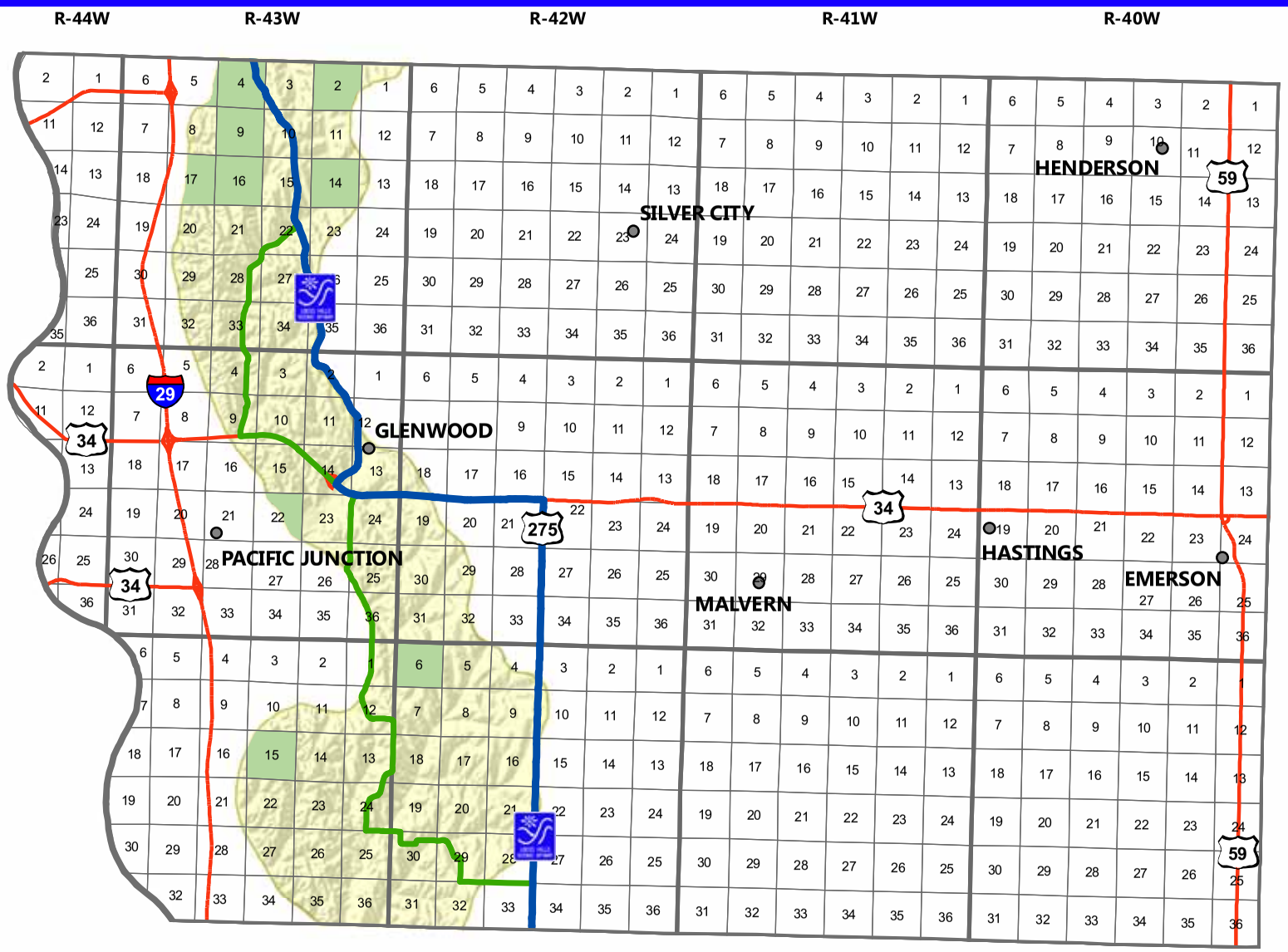
N W E S

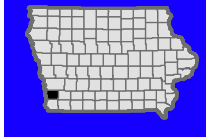
# Rare Flora and Fauna

## Mills County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Loess Hills Landform Region
Rare Flora & Fauna
Township Line
Section Line

0 1 2 4 6 Miles

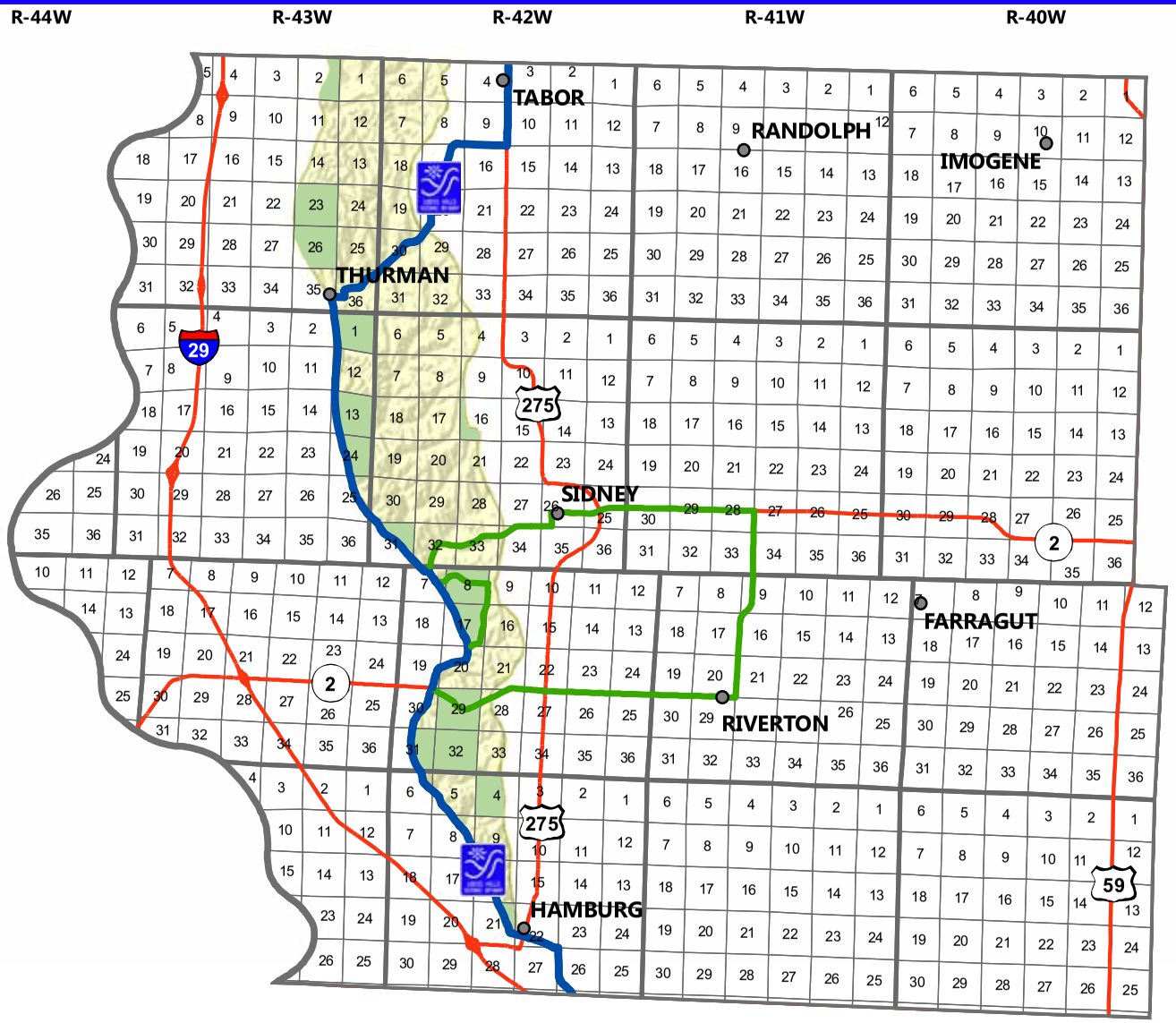
N W E S

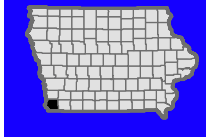
# Rare Flora and Fauna

## Fremont County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Loess Hills Landform Region
Rare Flora & Fauna
Township Line
Section Line

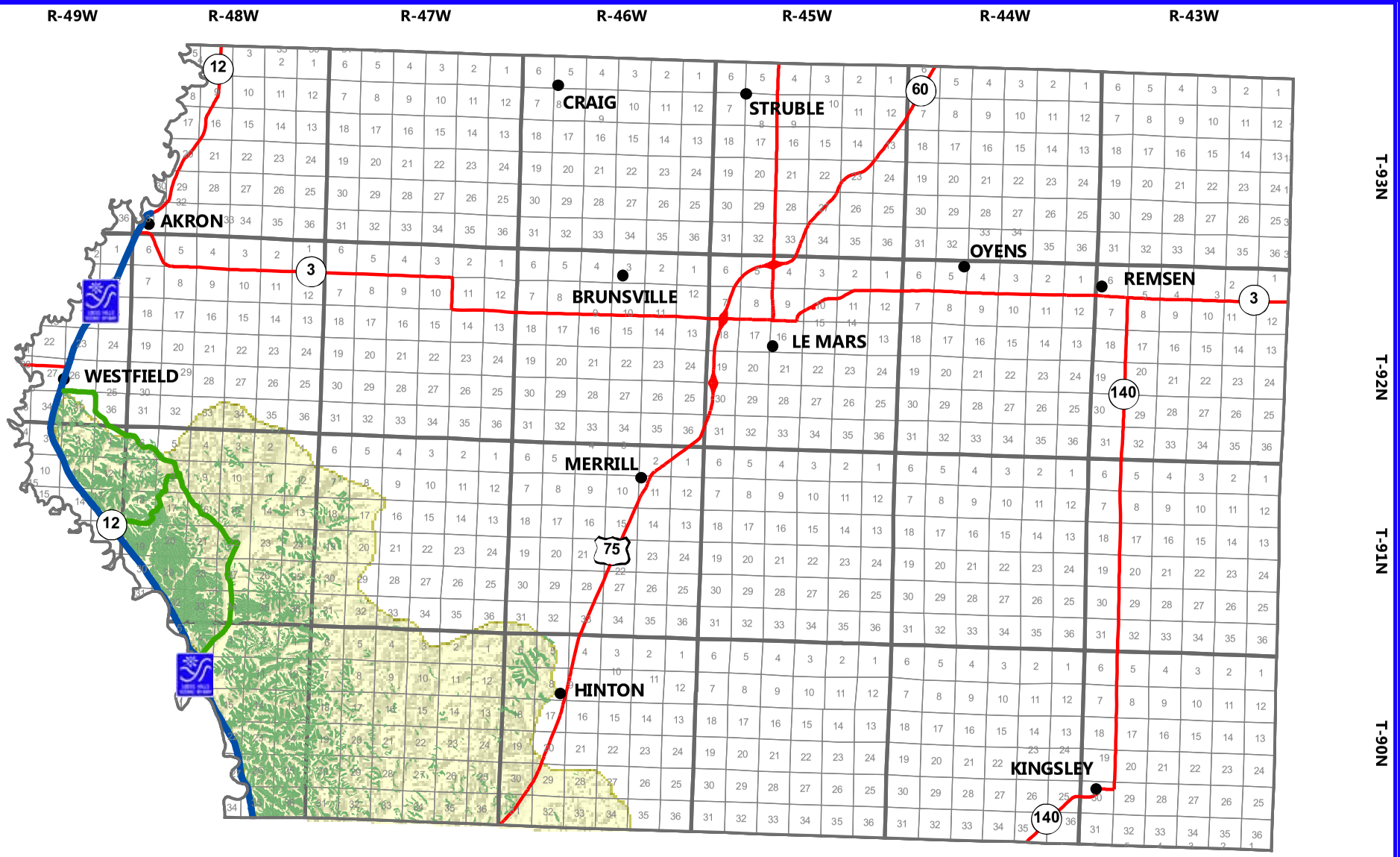
0 1.25 2.5 5 7.5 Miles

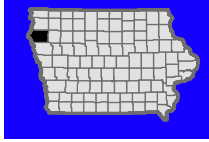
N W E S

# Steep Slope Areas
## Plymouth County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Slopes Greater or Equal to 20%
Township Line
Section Line
Loess Hills Landform Region

0 1.25 2.5 5 7.5 Miles

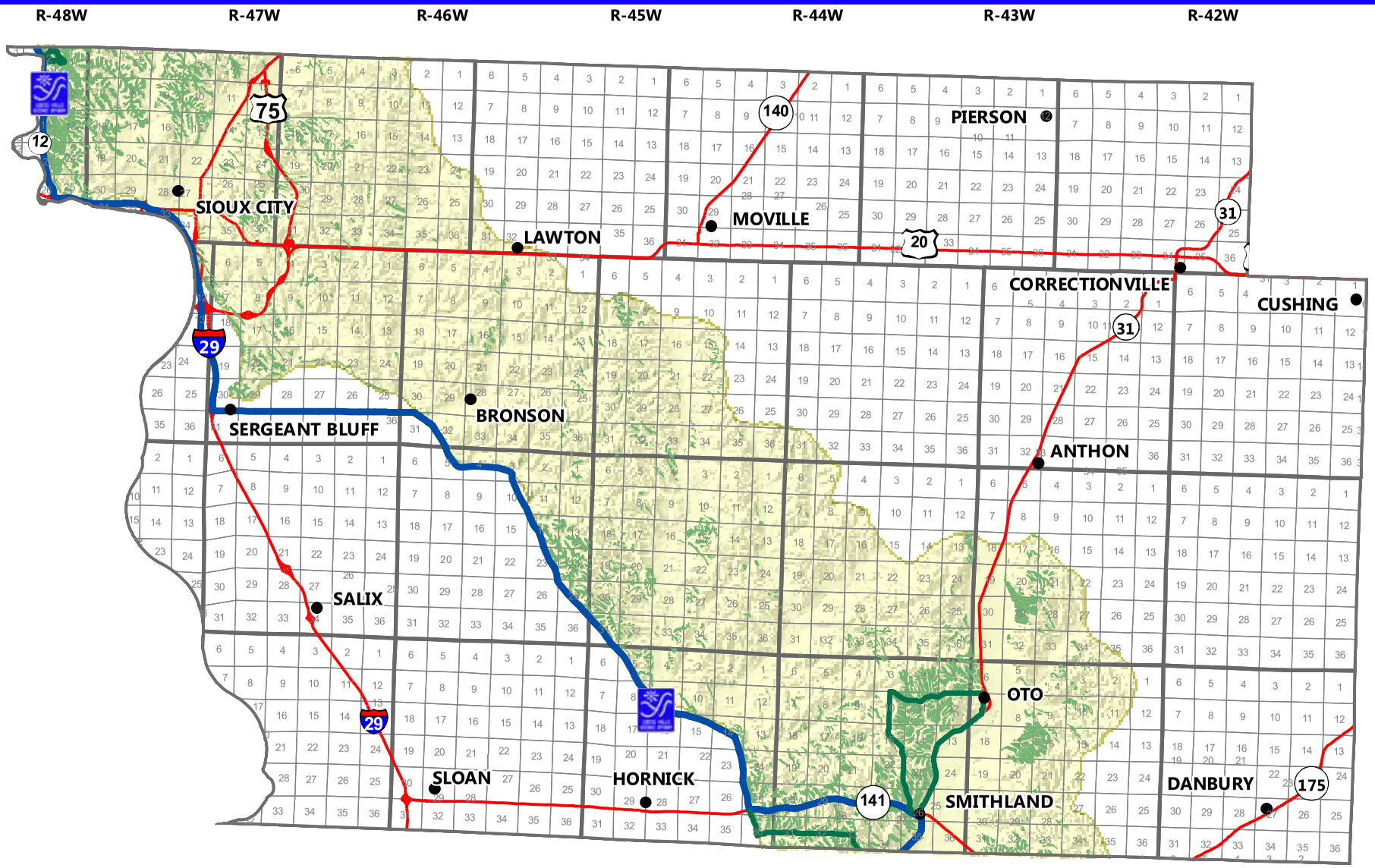
N W E S

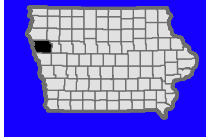
# Steep Slope Areas

## Woodbury County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Slopes Greater or Equal to 20%
Township Line
Section Line
Loess Hills Landform Region

0 1.25 2.5 5 7.5 Miles

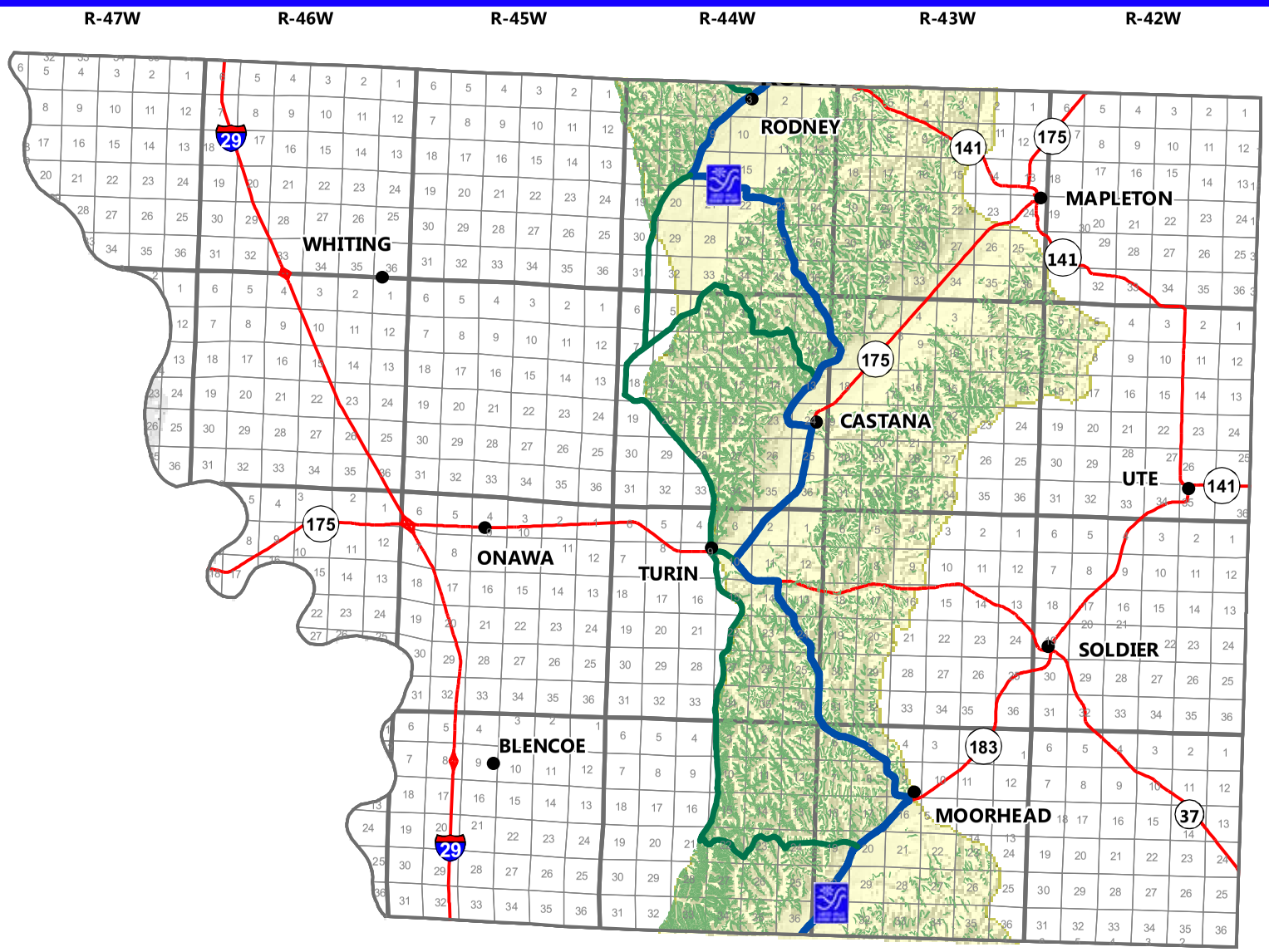
N W E S

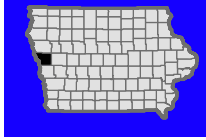
# Steep Slope Areas

## Monona County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Slopes Greater or Equal to 20%
Township Line
Section Line
Loess Hills Landform Region

0 1.25 2.5 5 7.5 Miles

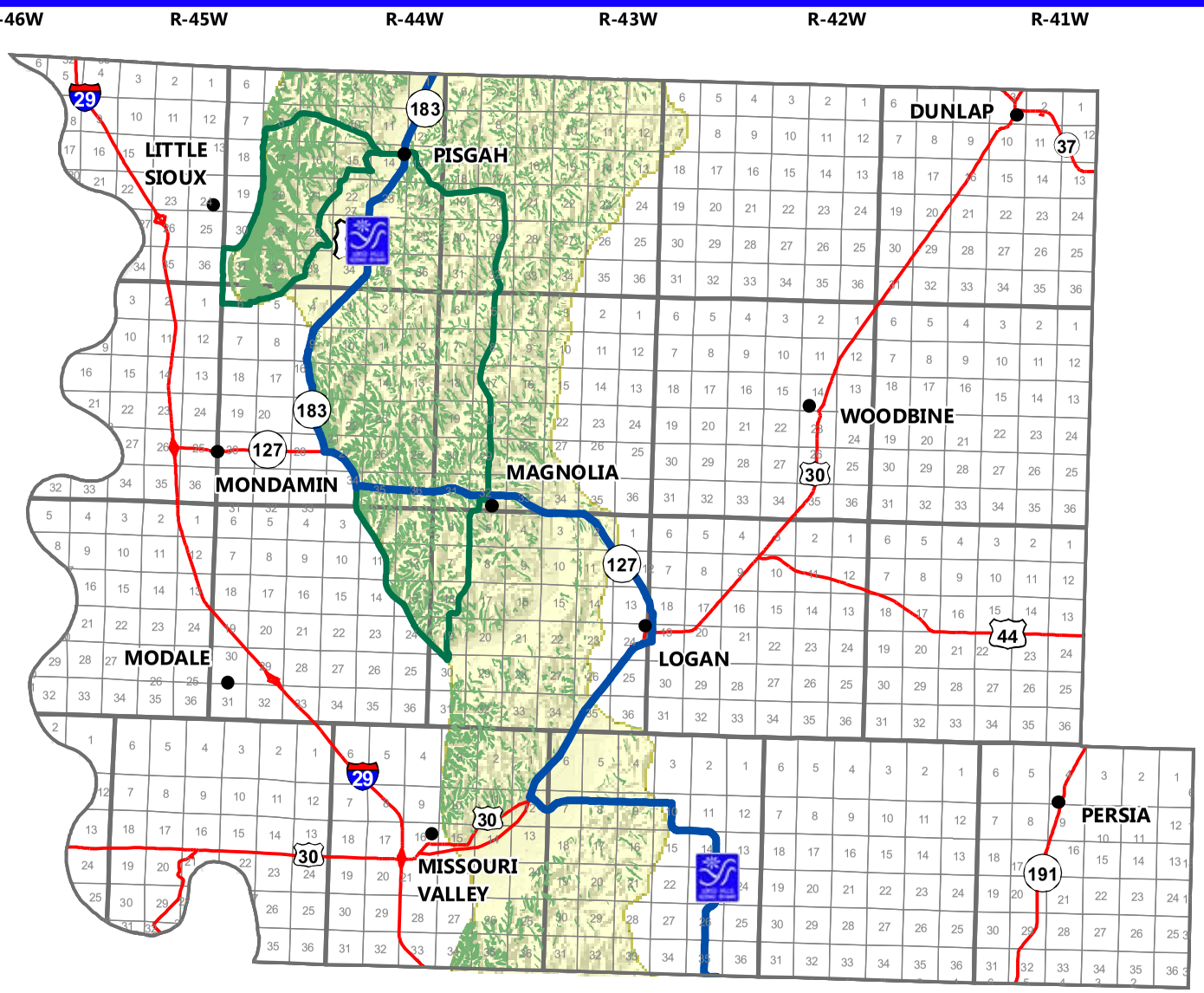
N W E S

# Steep Slope Areas

## Harrison County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department




Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Slopes Greater or Equal to 20%
Township Line
Section Line
Loess Hills Landform Region

0 1.25 2.5 5 7.5 Miles

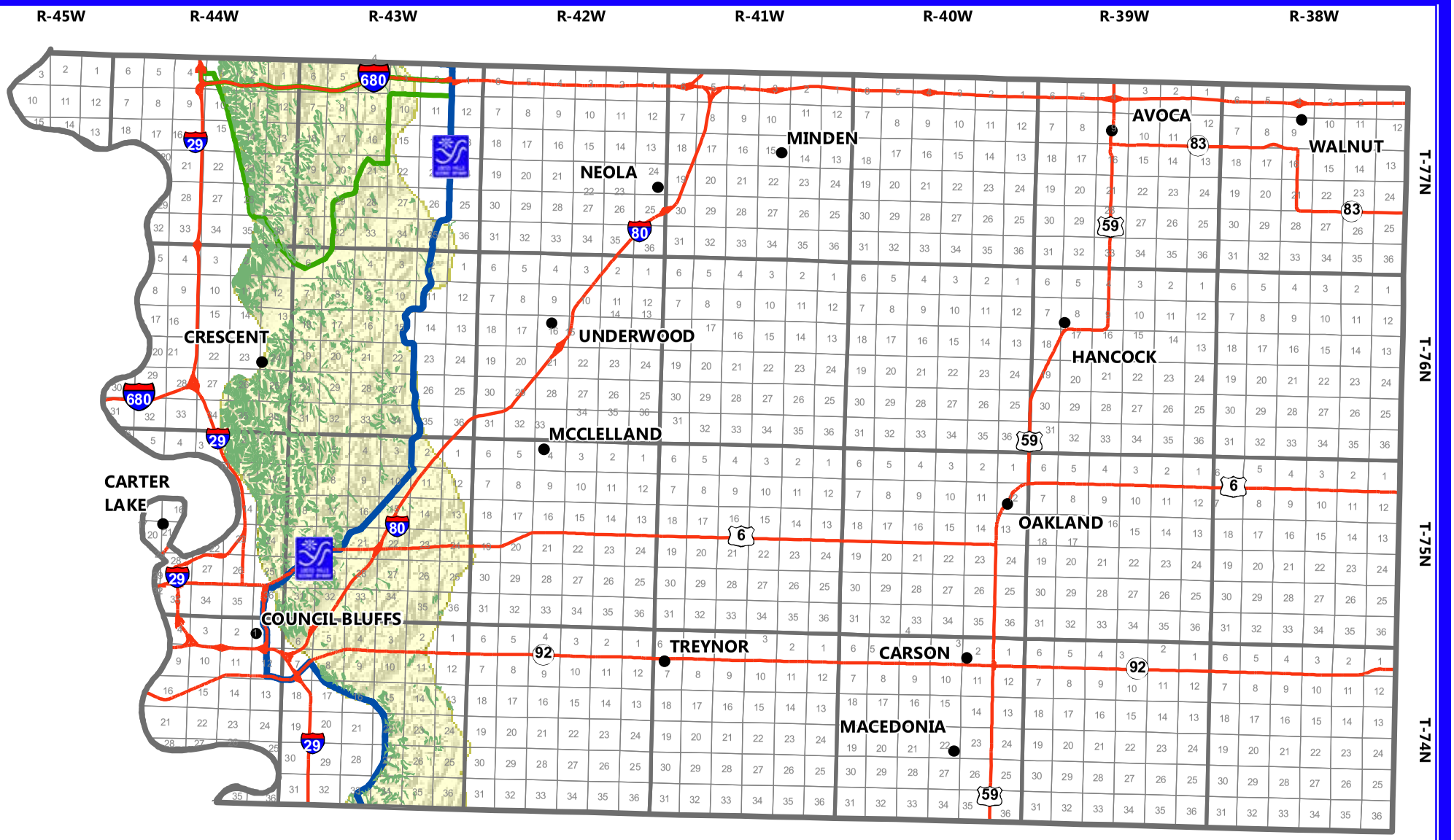
N W E S

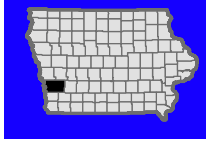
# Steep Slope Areas

## Pottawattamie County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Slopes Greater or Equal to 20%
Township Line
Section Line
Loess Hills Landform Region

0 1.25 2.5 5 7.5 Miles

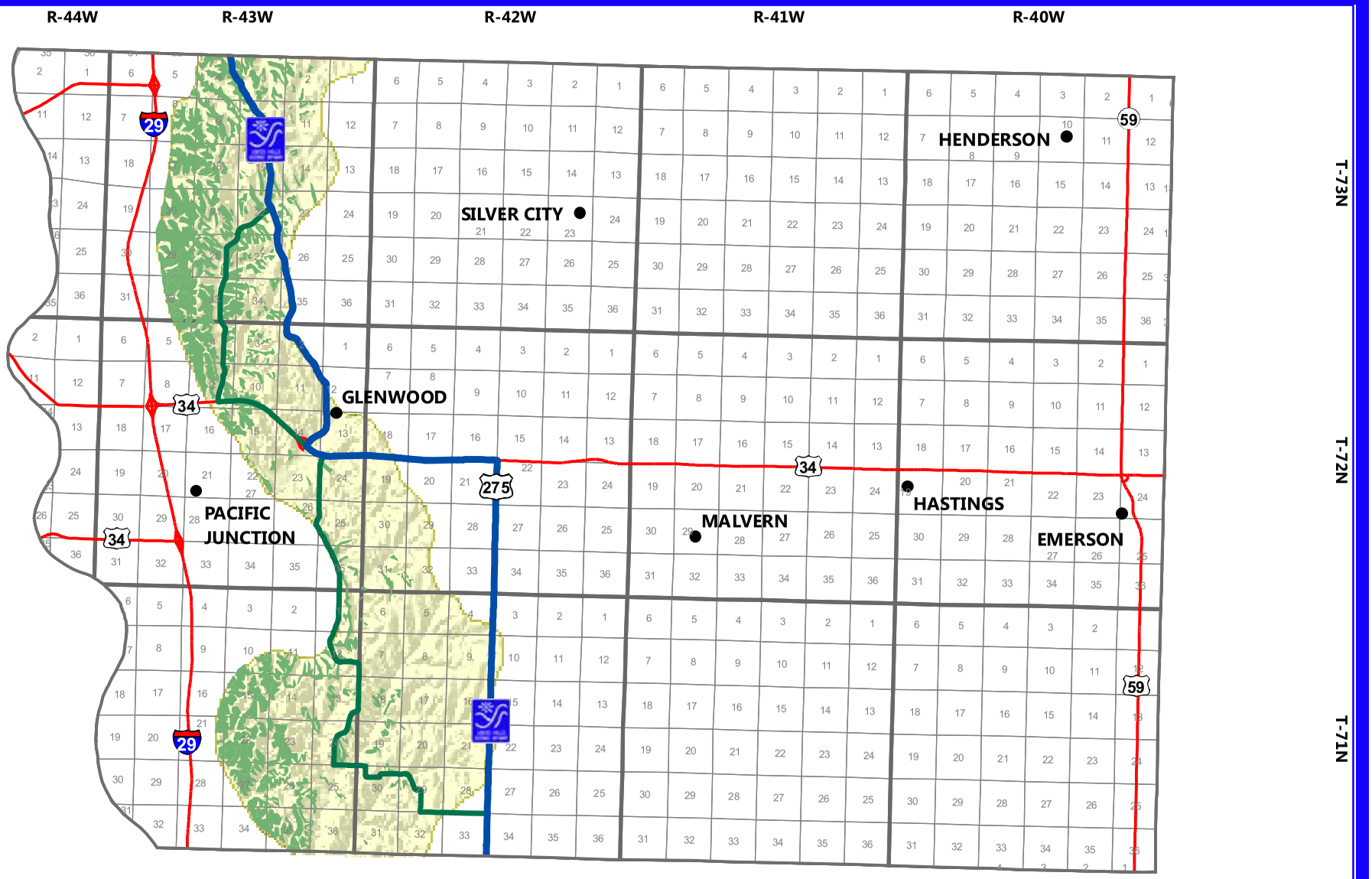
N W E S

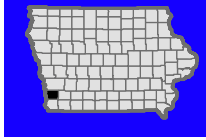
# Steep Slope Areas

## Mills County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Slopes Greater or Equal to 20%
Township Line
Section Line
Loess Hills Landform Region

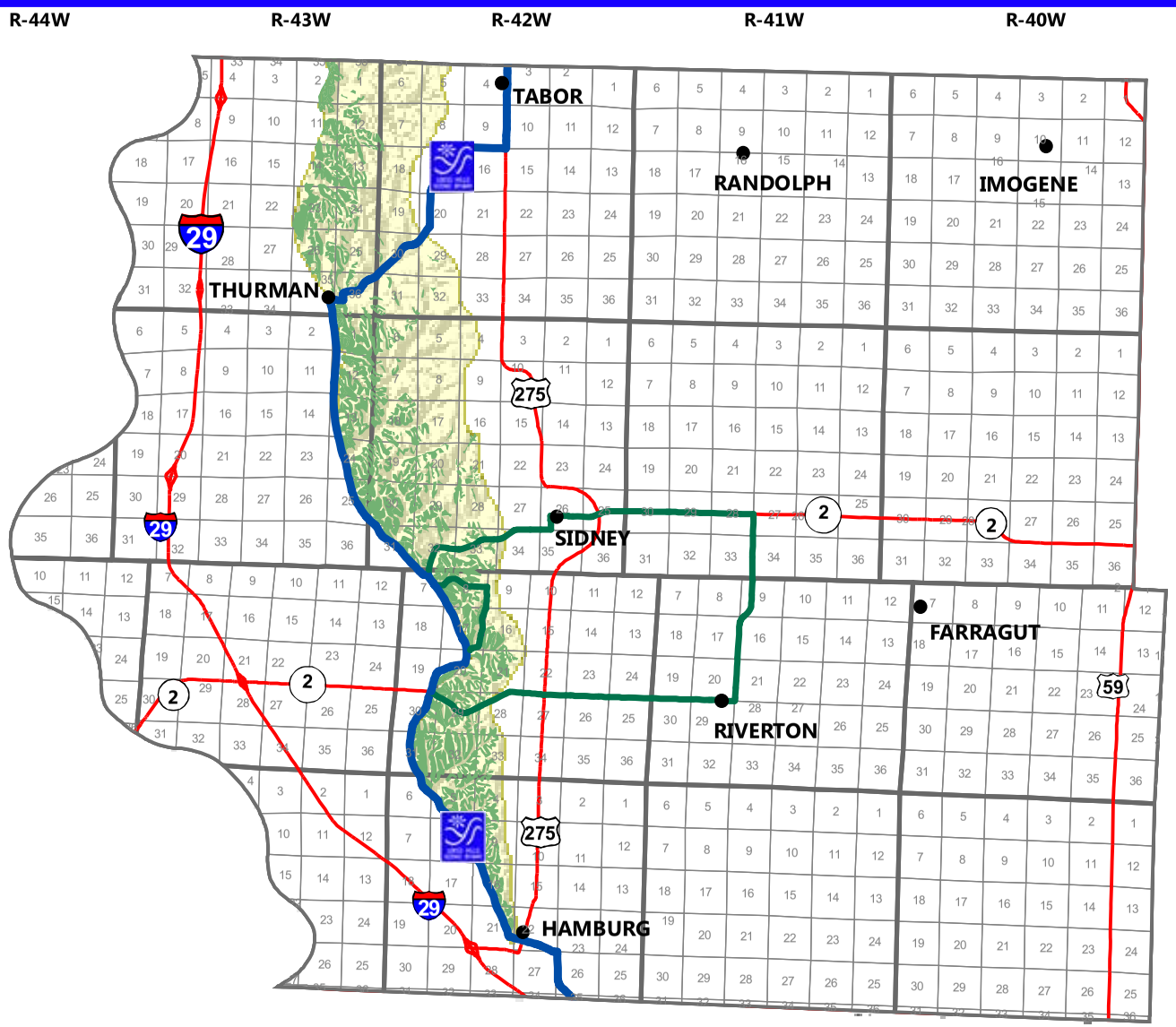
0 1 2 4 6 Miles

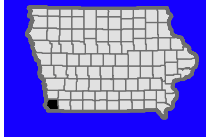
N W E S

# Steep Slope Areas
## Fremont County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Slopes Greater or Equal to 20%
Township Line
Section Line
Loess Hills Landform Region

0 1.25 2.5 5 7.5 Miles

N W E S

# Understanding the Archeological Quality

### *Definition of Archeological Quality*

Intrinsic archaeological quality involves those characteristics of the scenic byway's corridor that are physical evidence of historic or prehistoric human life or activity and are visible and capable of being inventoried and interpreted. The scenic byway corridor's archeological interest, as identified through ruins, artifacts, structural remains and other physical evidence have scientific significance that educate the viewer and stir an appreciation for the past. (United State Government Federal Register 26761, 1995).

### *What do we know?*

Archeological studies show that portions of the Loess Hills have been continuously occupied for 12,000 years (Tiffany, 1986, 158). The archeological record of the Loess Hills has been categorized into a series of cultures, namely Paleo-Indian (+12,000 to 8,000 years before present), Archaic (8,000 to 2,500 years before present), Woodland (2,500 to 1,200 years before present) and the Late Prehistoric (1,200 years before present to the time of Euro-American settlement in the early 1800s). Natural resources used to sustain populations, as well as the tools and methods of human organization required to utilize these resources are the basis for differentiating these cultures (Thompson et al 6, 1984).

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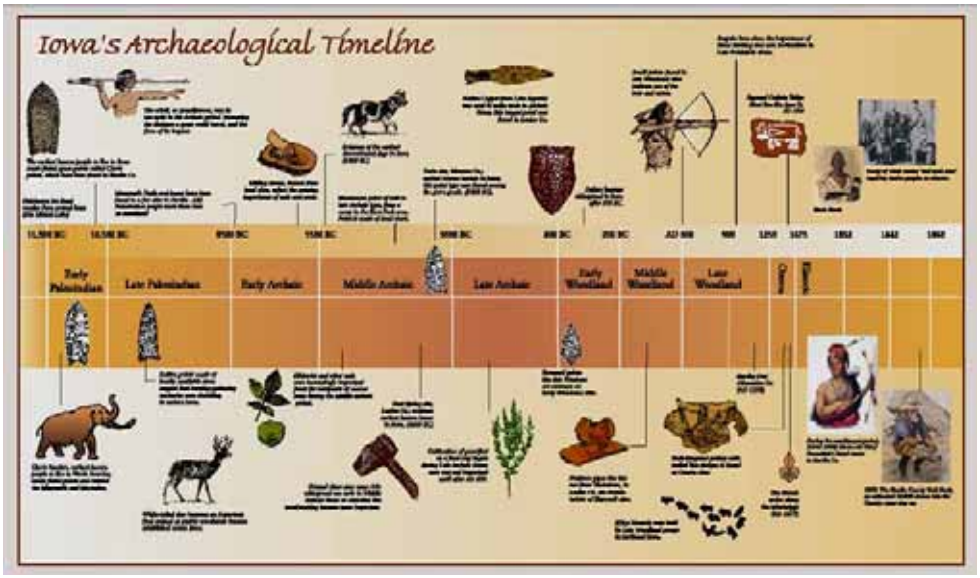

The Paleo-Indian, Archaic and Woodland cultures that inhabited the Loess Hills for more than 10,000 years were primarily nomadic hunters and gatherers. Evidence of their existence in the Loess Hills has been well established by artifacts and human remains found at a number of sites. Among the most well known and studied of these archeological sites are the Turin site in Monona County (Archaic Culture) and Rainbow site in Plymouth County (Woodland Culture).

Permanent human settlements first appeared in the Loess Hills less than 1,000 years ago. Three predominately farming cultures inhabited the region between about AD 900 and 1300. The Glenwood, Great Oasis and Mill Creek Cultures evolved

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independently with distinctive characteristics. All three, however, constructed partially buried permanent dwellings out of logs and dirt. In many cases, these earth lodges were clustered into village groups. Numerous archeological sites of the Great Oasis and Mill Creek Cultures are located in the northernmost portions of the Loess Hills. Glenwood Culture sites are concentrated along Pony Creek, Keg Creek and smaller tributaries of the Missouri River in Mills County (Mutel 42-53. 1989).

Virtual Rendering of Earthlodge in the Loess Hills Office of the State Archaeologist

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"Of the more than 1,500 archaeological sites currently inventoried across the seven Loess Hills counties over 300 are earthlodge dwellings; prehistoric residential sites antecedent to the nineteenth century Plains earthlodges. **What the cliff dwellings of the ancestral Pueblo peoples are to Southwestern archaeology, the earthlodges of the ancestral Plains Villagers are to Midwest and Plains archaeology** – the seminal moment for the emergency of the first farming-based sedentary societies across North America. Today, archaeologists estimate that as many as 1,000 earthlodge dwellings once covered the hills and valleys in the southern Glenwood locality, all within a ten-mile radius of the confluence of the Platte and Missouri rivers" (Archaeological Resources and National Significance of the Loess Hills National Scenic Byway 1, 2008).

The Loess Hills had few permanent or long-term residents from about 1300 to the arrival of Euro-Americans in the early 1800s. During this period a number of Indian tribes traveled the Loess Hills and used the region primarily as a hunting ground. These tribes included the Oneota, Ioway, Oto, Omaha, Missouri, Osage and Dakota Sioux (Mutel 53-56, 1989).

**Representative Archeological Resources in the Loess Hills Scenic Byway Corridor**

There are specific resources in the Loess Hills that are most representative of the intrinsic archeological quality of this region. Those resources that best depict the unique archeological quality of the Scenic Byway Corridor are:

- **Critical Resource Areas:** The Office of the State Archeologist of Iowa has recorded the location of archeological resources in 496 of the more than 1,200 square miles in the Loess Hills. These resources are representative of each of the cultures believed to have inhabited the Loess Hills and include artifacts, burial sites and habitations. The number and distribution of sites indicate the widespread presence of archeological resources in the Scenic Byway Corridor. Knowledge about the location and type of archeological resources in the Loess Hills can help ensure their protection and encourage a greater interest in their further study and interpretation. The Office of the State Archeologist of Iowa can provide more information regarding archeological resources in the Loess Hills.

- **Glenwood Culture Earth Lodge and Collections:** The Loess Hills surrounding the City of Glenwood have provided archeologists with a wealth of information about the Glenwood Culture, more correctly identified as a member of the Nebraska Culture of the Central Plains Tradition. Numerous earth lodge sites and artifacts of the Glenwood Culture have been located in this region of the Loess Hills. These sites and artifacts have been the subject of extensive study by archeologists. A reconstructed earth lodge and a collection of artifacts are exhibited at the Mills County Historical Museum in Glenwood.

Reconstructed Glenwood Culture earth lodge, Glenwood M. Whye

- **Turin Burial Site:** The Turin Burial Site contained four skeletal remains of humans believed to be of the Archaic Indian Culture. The site also contained a large number of artifacts. Discovered in 1955, the site was originally thought to contain the oldest known human remains in North America. Although further study proved this not to be the case, the human remains found at the Turin Burial site are the oldest known in Iowa. Archeologists consider the Turin Burial site to be of significance due to its contribution to a greater understanding of the Archaic Culture about which very little is known.

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Turin Burial Site D. Poggensee Earthlodge floor layout OSA

- **Blood Run National Historic Landmark:** Blood Run National Historic Landmark is located in Lyon County north of the Loess Hills. The Blood Run site appears to have been a ceremonial, social and trade center for the Oneonta Indian Culture and their successors from about AD 1200 to 1700. Over 100 burial mounds, effigy earthwork, house sites and numerous artifacts have been located on the more than 600-acre site. National Historic Landmark designation for Blood Run recognizes the site's unique contribution to a greater understanding of the relatively unknown Indian Cultures that once dominated the upper Midwest.

**Loess Hills Findings Set Stage for NAGPRA**

"Inadvertent discoveries of human remains in three locations in the Loess Hills in the early 1970s propelled Iowa into being the first state in the nation to pass laws that provide legal protection for all human remains regardless of age or origin found on public or private land, and for the reburial of native Indian remains. These three sites became focal points instrumental to the enacting of changes in the Iowa legal code and creating of precedent that led to similar legal changes in other states, ultimately presaging the 1990 passage of the federal Native American Graves Protection and Repatriation Act (NAGPRA).

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In the early 1970s, extensive archaeological investigations were undertaken as part of U.S. 34 highway work in the Glenwood area, crossing east-west through the Loess Hills. Several graves were encountered at one site; the graves of Euroamerican settlers were disinterred and immediately reinterred in a nearby cemetery, but the grave of an American Indian was boxed up and shipped to Iowa City for study, along with artifacts from the project. Outrage over this incident spurred Maria Pearson (Running Moccasins), Yankton Sioux, to become an active vocal advocate for Indian rights and burial protection for the next three decades, not just within Iowa, but also nationally and internationally. Support from the Iowa Governor and overwhelming public support led to a precedent that both Indian and archaeologists would eventually agree upon, that the remains of Native Americans should be treated in the same fashion as non-Indians. This concept would eventually become the heart of Iowa's burial laws" (Archaeological Resources and National Significance of the Loess Hills National Scenic Byway 13, 2008).

### *What needs to be done?*

The contribution that archeological resources make to the unique character of the Loess Hills Scenic Byway Corridor is significant. The presence of a wealth of archeological resources in the Loess Hills is well documented. At the same time, much remains to be done in order to encourage a greater appreciation for the archeological quality of the Scenic Byway Corridor. Specific actions included in the "Corridor Development Actions," section of the *Corridor Management Plan* will address the need to:

- Increase the public's enjoyment and understanding of the archeological quality of the Loess Hills Scenic Byway Corridor by promoting, improving access to and providing information about, archeological resources; and
- Continue to identify, research, interpret and obtain national recognition for resources that contribute to the archeological quality of the Scenic Byway Corridor.

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## *Maps and Tables*

Archaeological Resources - Map

Archaeological Resources - Table

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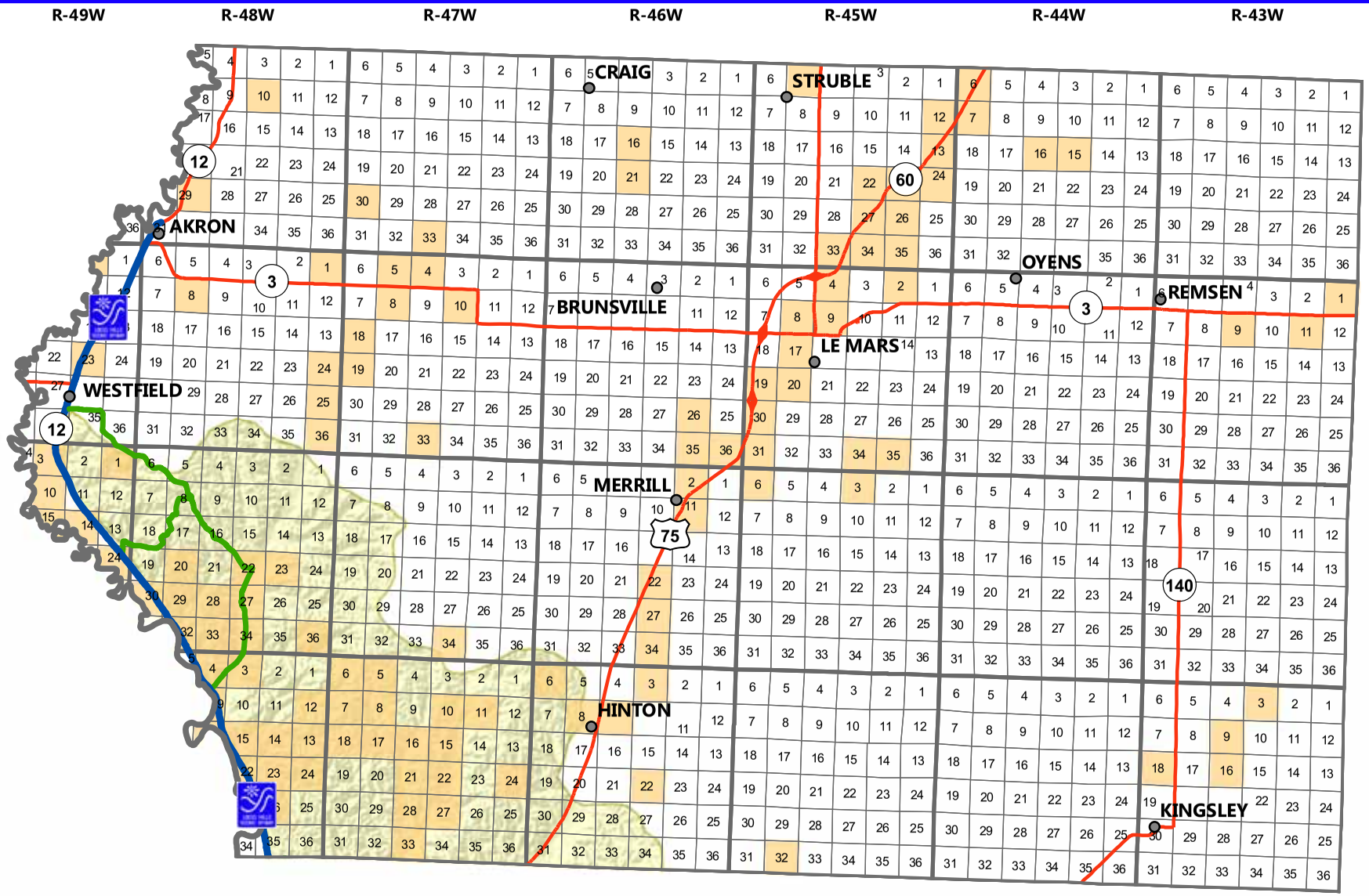
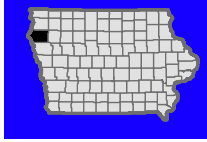
# Archaeological Resources

## Plymouth County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Loess Hills Landform Region
Archaeological Resource Present
Township Line
Section Line

0 1.25 2.5 5 7.5 Miles

N W E S

# Loess Hills Scenic Byway Archaeological Resources

## Plymouth County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

| County | Township | Range | Section |
|---|---|---|---|
| Plymouth | T90N | R43W | 3 |
| Plymouth | T90N | R43W | 9 |
| Plymouth | T90N | R43W | 16 |
| Plymouth | T90N | R43W | 18 |
| Plymouth | T90N | R45W | 32 |
| Plymouth | T90N | R46W | 3 |
| Plymouth | T90N | R46W | 6 |
| Plymouth | T90N | R46W | 8 |
| Plymouth | T90N | R46W | 9 |
| Plymouth | T90N | R46W | 22 |
| Plymouth | T90N | R47W | 5 |
| Plymouth | T90N | R47W | 6 |
| Plymouth | T90N | R47W | 7 |
| Plymouth | T90N | R47W | 8 |
| Plymouth | T90N | R47W | 10 |
| Plymouth | T90N | R47W | 11 |
| Plymouth | T90N | R47W | 15 |
| Plymouth | T90N | R47W | 16 |
| Plymouth | T90N | R47W | 17 |
| Plymouth | T90N | R47W | 18 |
| Plymouth | T90N | R47W | 21 |
| Plymouth | T90N | R47W | 22 |
| Plymouth | T90N | R47W | 24 |
| Plymouth | T90N | R47W | 27 |
| Plymouth | T90N | R47W | 28 |
| Plymouth | T90N | R47W | 33 |
| Plymouth | T90N | R48W | 3 |
| Plymouth | T90N | R48W | 4 |
| Plymouth | T90N | R48W | 9 |
| Plymouth | T90N | R48W | 12 |
| Plymouth | T90N | R48W | 13 |
| Plymouth | T90N | R48W | 14 |
| Plymouth | T90N | R48W | 15 |
| Plymouth | T90N | R48W | 16 |
| Plymouth | T90N | R48W | 22 |
| Plymouth | T90N | R48W | 23 |
| Plymouth | T90N | R48W | 24 |
| Plymouth | T90N | R48W | 26 |
| Plymouth | T91N | R45W | 3 |
| Plymouth | T91N | R45W | 6 |
| Plymouth | T91N | R46W | 2 |
| Plymouth | T91N | R46W | 11 |
| Plymouth | T91N | R46W | 22 |
| Plymouth | T91N | R46W | 27 |
| Plymouth | T91N | R46W | 34 |
| Plymouth | T91N | R47W | 34 |
| Plymouth | T91N | R48W | 20 |
| Plymouth | T91N | R48W | 22 |
| Plymouth | T91N | R48W | 23 |
| Plymouth | T91N | R48W | 27 |

# Loess Hills Scenic Byway Archaeological Resources

## Plymouth County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

| County | Township | Range | Section |
|---|---|---|---|
| Plymouth | T91N | R48W | 28 |
| Plymouth | T91N | R48W | 29 |
| Plymouth | T91N | R48W | 30 |
| Plymouth | T91N | R48W | 32 |
| Plymouth | T91N | R48W | 33 |
| Plymouth | T91N | R48W | 34 |
| Plymouth | T91N | R48W | 36 |
| Plymouth | T91N | R49W | 1 |
| Plymouth | T91N | R49W | 3 |
| Plymouth | T91N | R49W | 10 |
| Plymouth | T91N | R49W | 14 |
| Plymouth | T91N | R49W | 15 |
| Plymouth | T91N | R49W | 24 |
| Plymouth | T92N | R43W | 1 |
| Plymouth | T92N | R43W | 9 |
| Plymouth | T92N | R43W | 11 |
| Plymouth | T92N | R45W | 2 |
| Plymouth | T92N | R45W | 4 |
| Plymouth | T92N | R45W | 8 |
| Plymouth | T92N | R45W | 9 |
| Plymouth | T92N | R45W | 17 |
| Plymouth | T92N | R45W | 19 |
| Plymouth | T92N | R45W | 20 |
| Plymouth | T92N | R45W | 30 |
| Plymouth | T92N | R45W | 31 |
| Plymouth | T92N | R45W | 34 |
| Plymouth | T92N | R45W | 35 |
| Plymouth | T92N | R46W | 26 |
| Plymouth | T92N | R46W | 35 |
| Plymouth | T92N | R46W | 36 |
| Plymouth | T92N | R47W | 4 |
| Plymouth | T92N | R47W | 5 |
| Plymouth | T92N | R47W | 8 |
| Plymouth | T92N | R47W | 10 |
| Plymouth | T92N | R47W | 18 |
| Plymouth | T92N | R47W | 19 |
| Plymouth | T92N | R47W | 33 |
| Plymouth | T92N | R48W | 1 |
| Plymouth | T92N | R48W | 8 |
| Plymouth | T92N | R48W | 24 |
| Plymouth | T92N | R48W | 25 |
| Plymouth | T92N | R48W | 36 |
| Plymouth | T92N | R49W | 2 |
| Plymouth | T92N | R49W | 23 |
| Plymouth | T93N | R44W | 6 |
| Plymouth | T93N | R44W | 7 |
| Plymouth | T93N | R44W | 15 |
| Plymouth | T93N | R44W | 16 |
| Plymouth | T93N | R45W | 5 |
| Plymouth | T93N | R45W | 12 |

# Loess Hills Scenic Byway Archaeological Resources

## Plymouth County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

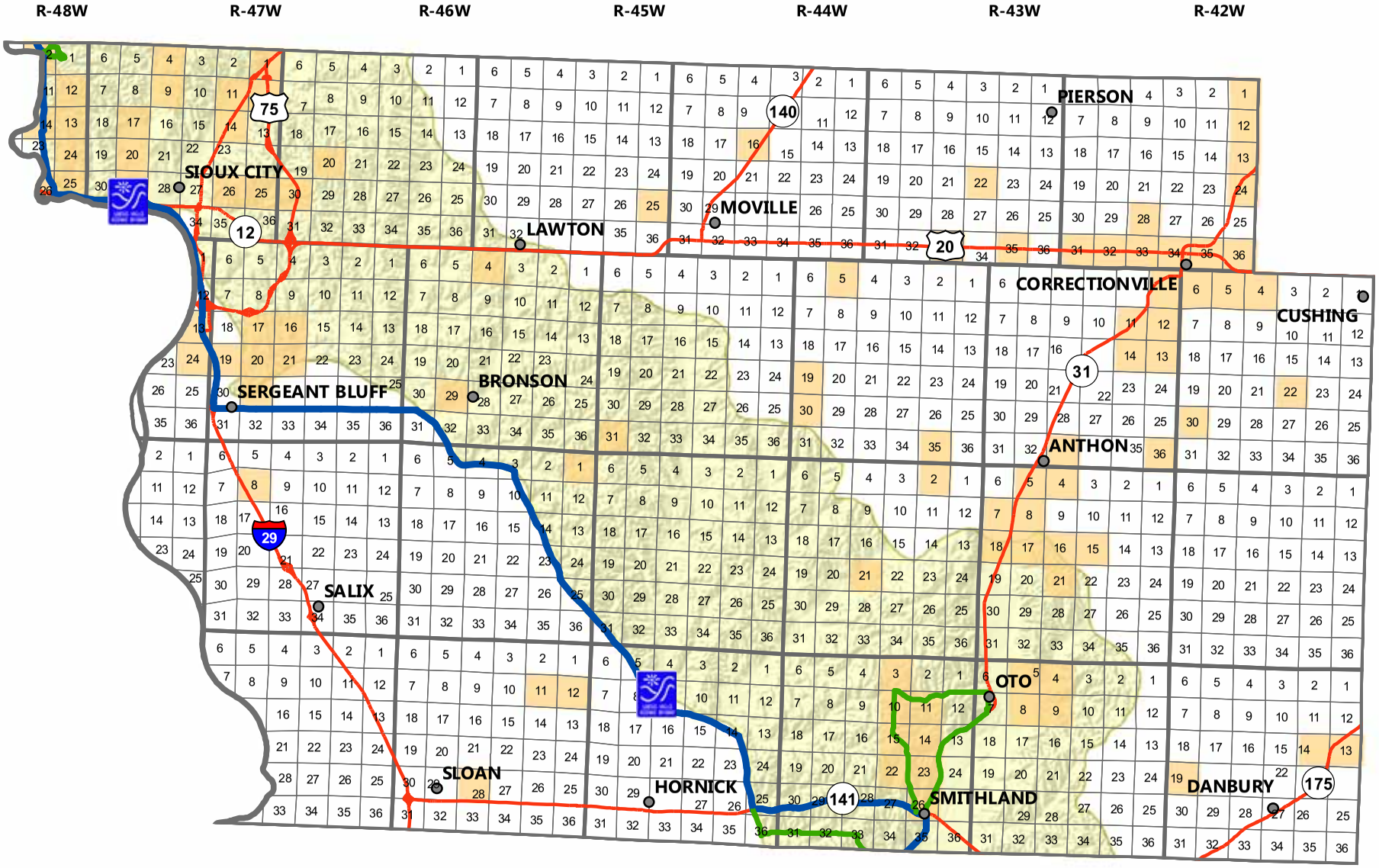
| County | Township | Range | Section |
|---|---|---|---|
| Plymouth | T93N | R45W | 13 |
| Plymouth | T93N | R45W | 22 |
| Plymouth | T93N | R45W | 23 |
| Plymouth | T93N | R45W | 24 |
| Plymouth | T93N | R45W | 26 |
| Plymouth | T93N | R45W | 27 |
| Plymouth | T93N | R45W | 33 |
| Plymouth | T93N | R45W | 34 |
| Plymouth | T93N | R45W | 35 |
| Plymouth | T93N | R46W | 16 |
| Plymouth | T93N | R46W | 21 |
| Plymouth | T93N | R47W | 30 |
| Plymouth | T93N | R47W | 33 |
| Plymouth | T93N | R48W | 10 |
| Plymouth | T93N | R48W | 29 |

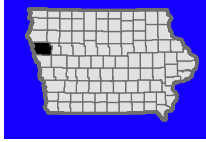
# Archaeological Resources

## Woodbury County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Loess Hills Landform Region
Archaeological Resource Present
Township Line
Section Line

0 1.25 2.5 5 7.5 Miles

N W E S

# Loess Hills Scenic Byway Archaeological Resources

## Woodbury County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

| County | Township | Range | Section |
|---|---|---|---|
| Woodbury | T86N | R42W | 13 |
| Woodbury | T86N | R42W | 14 |
| Woodbury | T86N | R42W | 19 |
| Woodbury | T86N | R43W | 4 |
| Woodbury | T86N | R43W | 5 |
| Woodbury | T86N | R43W | 8 |
| Woodbury | T86N | R43W | 9 |
| Woodbury | T86N | R44W | 3 |
| Woodbury | T86N | R44W | 10 |
| Woodbury | T86N | R44W | 11 |
| Woodbury | T86N | R44W | 14 |
| Woodbury | T86N | R44W | 15 |
| Woodbury | T86N | R44W | 22 |
| Woodbury | T86N | R44W | 23 |
| Woodbury | T86N | R44W | 26 |
| Woodbury | T86N | R46W | 11 |
| Woodbury | T86N | R46W | 12 |
| Woodbury | T86N | R46W | 28 |
| Woodbury | T87N | R43W | 4 |
| Woodbury | T87N | R43W | 5 |
| Woodbury | T87N | R43W | 7 |
| Woodbury | T87N | R43W | 8 |
| Woodbury | T87N | R43W | 15 |
| Woodbury | T87N | R43W | 16 |
| Woodbury | T87N | R43W | 17 |
| Woodbury | T87N | R43W | 18 |
| Woodbury | T87N | R43W | 21 |
| Woodbury | T87N | R44W | 2 |
| Woodbury | T87N | R44W | 21 |
| Woodbury | T87N | R46W | 1 |
| Woodbury | T87N | R47W | 8 |
| Woodbury | T88N | R42W | 4 |
| Woodbury | T88N | R42W | 5 |
| Woodbury | T88N | R42W | 6 |
| Woodbury | T88N | R42W | 22 |
| Woodbury | T88N | R42W | 30 |
| Woodbury | T88N | R43W | 1 |
| Woodbury | T88N | R43W | 11 |
| Woodbury | T88N | R43W | 12 |
| Woodbury | T88N | R43W | 13 |
| Woodbury | T88N | R43W | 14 |
| Woodbury | T88N | R43W | 33 |
| Woodbury | T88N | R43W | 36 |
| Woodbury | T88N | R44W | 5 |
| Woodbury | T88N | R44W | 19 |
| Woodbury | T88N | R44W | 30 |
| Woodbury | T88N | R44W | 35 |
| Woodbury | T88N | R45W | 31 |
| Woodbury | T88N | R46W | 4 |
| Woodbury | T88N | R46W | 29 |

# Loess Hills Scenic Byway Archaeological Resources

## Woodbury County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

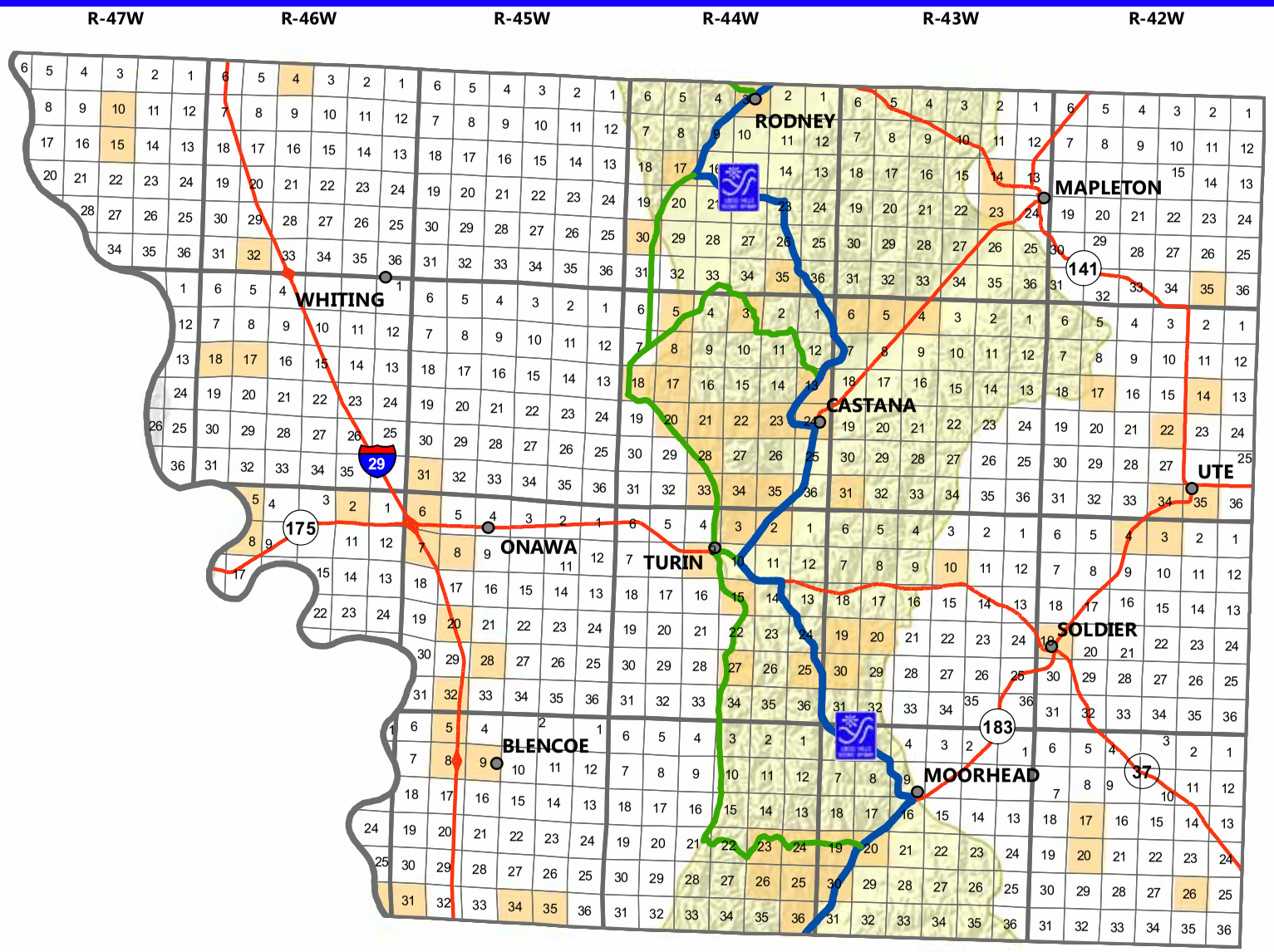
| County | Township | Range | Section |
|---|---|---|---|
| Woodbury | T88N | R47W | 16 |
| Woodbury | T88N | R47W | 17 |
| Woodbury | T88N | R47W | 19 |
| Woodbury | T88N | R47W | 20 |
| Woodbury | T88N | R47W | 21 |
| Woodbury | T88N | R47W | 29 |
| Woodbury | T88N | R48W | 13 |
| Woodbury | T88N | R48W | 24 |
| Woodbury | T89N | R42W | 1 |
| Woodbury | T89N | R42W | 12 |
| Woodbury | T89N | R42W | 13 |
| Woodbury | T89N | R42W | 24 |
| Woodbury | T89N | R42W | 28 |
| Woodbury | T89N | R42W | 31 |
| Woodbury | T89N | R42W | 32 |
| Woodbury | T89N | R42W | 33 |
| Woodbury | T89N | R42W | 34 |
| Woodbury | T89N | R42W | 35 |
| Woodbury | T89N | R42W | 36 |
| Woodbury | T89N | R43W | 22 |
| Woodbury | T89N | R43W | 33 |
| Woodbury | T89N | R43W | 35 |
| Woodbury | T89N | R44W | 16 |
| Woodbury | T89N | R45W | 25 |
| Woodbury | T89N | R46W | 20 |
| Woodbury | T89N | R46W | 30 |
| Woodbury | T89N | R47W | 1 |
| Woodbury | T89N | R47W | 4 |
| Woodbury | T89N | R47W | 9 |
| Woodbury | T89N | R47W | 11 |
| Woodbury | T89N | R47W | 12 |
| Woodbury | T89N | R47W | 14 |
| Woodbury | T89N | R47W | 17 |
| Woodbury | T89N | R47W | 20 |
| Woodbury | T89N | R47W | 25 |
| Woodbury | T89N | R47W | 26 |
| Woodbury | T89N | R47W | 29 |
| Woodbury | T89N | R47W | 33 |
| Woodbury | T89N | R48W | 2 |
| Woodbury | T89N | R48W | 12 |
| Woodbury | T89N | R48W | 13 |
| Woodbury | T89N | R48W | 14 |
| Woodbury | T89N | R48W | 24 |
| Woodbury | T89N | R48W | 25 |
| Woodbury | T89N | R48W | 26 |

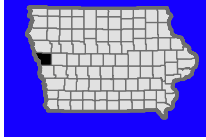
# Archaeological Resources

## Monona County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Loess Hills Landform Region
Archaeological Resource Present
Township Line
Section Line

0 1.25 2.5 5 7.5 Miles

N W E S

# Loess Hills Scenic Byway Archaeological Resources

## Monona County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

| County | Township | Range | Section |
|---|---|---|---|
| Monona | T82N | R42W | 17 |
| Monona | T82N | R42W | 20 |
| Monona | T82N | R42W | 26 |
| Monona | T82N | R43W | 19 |
| Monona | T82N | R43W | 20 |
| Monona | T82N | R43W | 30 |
| Monona | T82N | R44W | 23 |
| Monona | T82N | R44W | 24 |
| Monona | T82N | R44W | 25 |
| Monona | T82N | R44W | 26 |
| Monona | T82N | R44W | 36 |
| Monona | T82N | R45W | 5 |
| Monona | T82N | R45W | 8 |
| Monona | T82N | R45W | 9 |
| Monona | T82N | R45W | 31 |
| Monona | T82N | R45W | 34 |
| Monona | T82N | R45W | 35 |
| Monona | T82N | R46W | 36 |
| Monona | T83N | R42W | 3 |
| Monona | T83N | R42W | 4 |
| Monona | T83N | R42W | 19 |
| Monona | T83N | R43W | 10 |
| Monona | T83N | R43W | 19 |
| Monona | T83N | R43W | 20 |
| Monona | T83N | R43W | 30 |
| Monona | T83N | R44W | 2 |
| Monona | T83N | R44W | 3 |
| Monona | T83N | R44W | 9 |
| Monona | T83N | R44W | 15 |
| Monona | T83N | R44W | 25 |
| Monona | T83N | R44W | 27 |
| Monona | T83N | R45W | 6 |
| Monona | T83N | R45W | 7 |
| Monona | T83N | R45W | 8 |
| Monona | T83N | R45W | 20 |
| Monona | T83N | R45W | 28 |
| Monona | T83N | R45W | 32 |
| Monona | T83N | R46W | 2 |
| Monona | T83N | R46W | 5 |
| Monona | T83N | R46W | 8 |
| Monona | T84N | R42W | 14 |
| Monona | T84N | R42W | 17 |
| Monona | T84N | R42W | 22 |
| Monona | T84N | R42W | 34 |
| Monona | T84N | R42W | 35 |
| Monona | T84N | R43W | 4 |
| Monona | T84N | R43W | 5 |
| Monona | T84N | R43W | 6 |
| Monona | T84N | R43W | 31 |
| Monona | T84N | R44W | 3 |

# Loess Hills Scenic Byway Archaeological Resources

## Monona County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

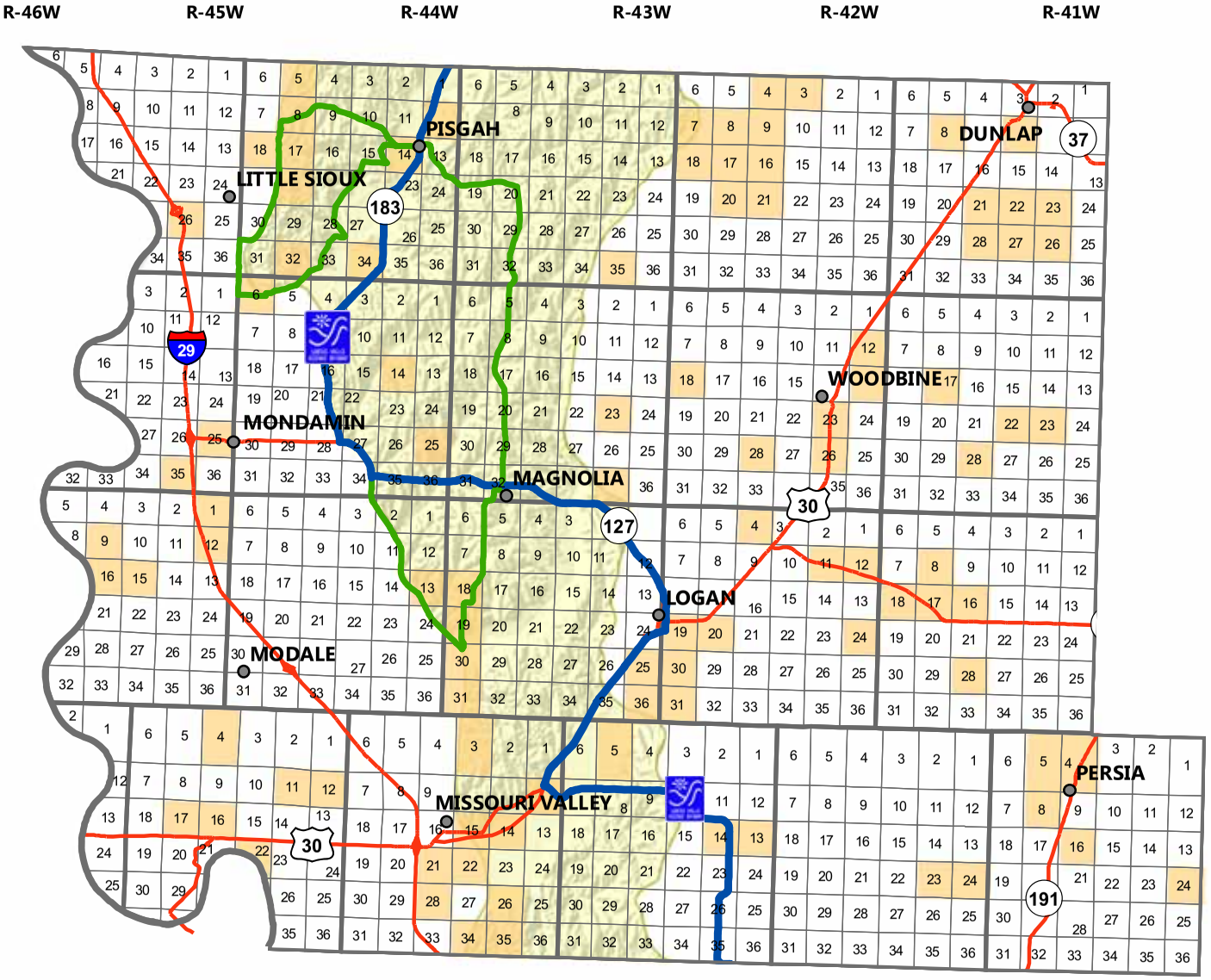
| County | Township | Range | Section |
|---|---|---|---|
| Monona | T84N | R44W | 5 |
| Monona | T84N | R44W | 8 |
| Monona | T84N | R44W | 13 |
| Monona | T84N | R44W | 17 |
| Monona | T84N | R44W | 18 |
| Monona | T84N | R44W | 20 |
| Monona | T84N | R44W | 21 |
| Monona | T84N | R44W | 22 |
| Monona | T84N | R44W | 23 |
| Monona | T84N | R44W | 24 |
| Monona | T84N | R44W | 28 |
| Monona | T84N | R44W | 33 |
| Monona | T84N | R44W | 34 |
| Monona | T84N | R44W | 35 |
| Monona | T84N | R45W | 31 |
| Monona | T84N | R46W | 17 |
| Monona | T84N | R46W | 18 |
| Monona | T85N | R42W | 35 |
| Monona | T85N | R43W | 14 |
| Monona | T85N | R43W | 23 |
| Monona | T85N | R44W | 3 |
| Monona | T85N | R44W | 17 |
| Monona | T85N | R44W | 30 |
| Monona | T85N | R44W | 35 |
| Monona | T85N | R46W | 4 |
| Monona | T85N | R46W | 32 |
| Monona | T85N | R47W | 10 |
| Monona | T85N | R47W | 15 |

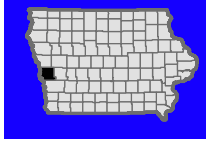
# Archaeological Resources

## Harrison County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Loess Hills Landform Region
Archaeological Resource Present
Township Line
Section Line

0 1.25 2.5 5 7.5 Miles

N W E S

# Loess Hills Scenic Byway Archaeological Resources

## Harrison County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

| County | Township | Range | Section |
|---|---|---|---|
| Harrison | T77N | R44W | 3 |
| Harrison | T78N | R41W | 4 |
| Harrison | T78N | R41W | 5 |
| Harrison | T78N | R41W | 8 |
| Harrison | T78N | R41W | 16 |
| Harrison | T78N | R41W | 24 |
| Harrison | T78N | R42W | 23 |
| Harrison | T78N | R42W | 24 |
| Harrison | T78N | R43W | 5 |
| Harrison | T78N | R43W | 13 |
| Harrison | T78N | R43W | 14 |
| Harrison | T78N | R44W | 3 |
| Harrison | T78N | R44W | 12 |
| Harrison | T78N | R44W | 14 |
| Harrison | T78N | R44W | 15 |
| Harrison | T78N | R44W | 21 |
| Harrison | T78N | R44W | 22 |
| Harrison | T78N | R44W | 26 |
| Harrison | T78N | R44W | 28 |
| Harrison | T78N | R44W | 34 |
| Harrison | T78N | R44W | 35 |
| Harrison | T78N | R45W | 4 |
| Harrison | T78N | R45W | 11 |
| Harrison | T78N | R45W | 12 |
| Harrison | T78N | R45W | 16 |
| Harrison | T78N | R45W | 17 |
| Harrison | T78N | R45W | 22 |
| Harrison | T78N | R44W | 34 |
| Harrison | T78N | R44W | 35 |
| Harrison | T79N | R40W | 32 |
| Harrison | T79N | R41W | 8 |
| Harrison | T79N | R41W | 16 |
| Harrison | T79N | R41W | 17 |
| Harrison | T79N | R41W | 18 |
| Harrison | T79N | R41W | 28 |
| Harrison | T79N | R42W | 4 |
| Harrison | T79N | R42W | 11 |
| Harrison | T79N | R42W | 12 |
| Harrison | T79N | R42W | 19 |
| Harrison | T79N | R42W | 20 |
| Harrison | T79N | R42W | 24 |
| Harrison | T79N | R42W | 30 |
| Harrison | T79N | R42W | 31 |
| Harrison | T79N | R43W | 18 |
| Harrison | T79N | R43W | 19 |
| Harrison | T79N | R43W | 25 |
| Harrison | T79N | R43W | 30 |
| Harrison | T79N | R43W | 31 |
| Harrison | T79N | R43W | 36 |
| Harrison | T79N | R44W | 13 |

# Loess Hills Scenic Byway Archaeological Resources

## Harrison County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

| County | Township | Range | Section |
|---|---|---|---|
| Harrison | T79N | R45W | 1 |
| Harrison | T79N | R45W | 9 |
| Harrison | T79N | R45W | 12 |
| Harrison | T79N | R45W | 15 |
| Harrison | T79N | R45W | 16 |
| Harrison | T80N | R41W | 17 |
| Harrison | T80N | R41W | 22 |
| Harrison | T80N | R41W | 23 |
| Harrison | T80N | R41W | 28 |
| Harrison | T80N | R42W | 12 |
| Harrison | T80N | R42W | 13 |
| Harrison | T80N | R42W | 18 |
| Harrison | T80N | R42W | 23 |
| Harrison | T80N | R42W | 26 |
| Harrison | T80N | R42W | 28 |
| Harrison | T80N | R43W | 23 |
| Harrison | T80N | R43W | 35 |
| Harrison | T80N | R44W | 6 |
| Harrison | T80N | R44W | 9 |
| Harrison | T80N | R44W | 14 |
| Harrison | T80N | R44W | 25 |
| Harrison | T80N | R45W | 25 |
| Harrison | T80N | R45W | 35 |
| Harrison | T81N | R40W | 18 |
| Harrison | T81N | R41W | 8 |
| Harrison | T81N | R41W | 10 |
| Harrison | T81N | R41W | 21 |
| Harrison | T81N | R41W | 22 |
| Harrison | T81N | R41W | 23 |
| Harrison | T81N | R41W | 26 |
| Harrison | T81N | R41W | 27 |
| Harrison | T81N | R41W | 28 |
| Harrison | T81N | R42W | 3 |
| Harrison | T81N | R42W | 4 |
| Harrison | T81N | R42W | 7 |
| Harrison | T81N | R42W | 8 |
| Harrison | T81N | R42W | 9 |
| Harrison | T81N | R42W | 16 |
| Harrison | T81N | R42W | 17 |
| Harrison | T81N | R42W | 18 |
| Harrison | T81N | R42W | 20 |
| Harrison | T81N | R42W | 21 |
| Harrison | T81N | R43W | 35 |
| Harrison | T81N | R44W | 5 |
| Harrison | T81N | R44W | 8 |
| Harrison | T81N | R44W | 12 |
| Harrison | T81N | R44W | 14 |
| Harrison | T81N | R44W | 17 |
| Harrison | T81N | R44W | 18 |
| Harrison | T81N | R44W | 20 |

# Loess Hills Scenic Byway Archaeological Resources

## Harrison County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

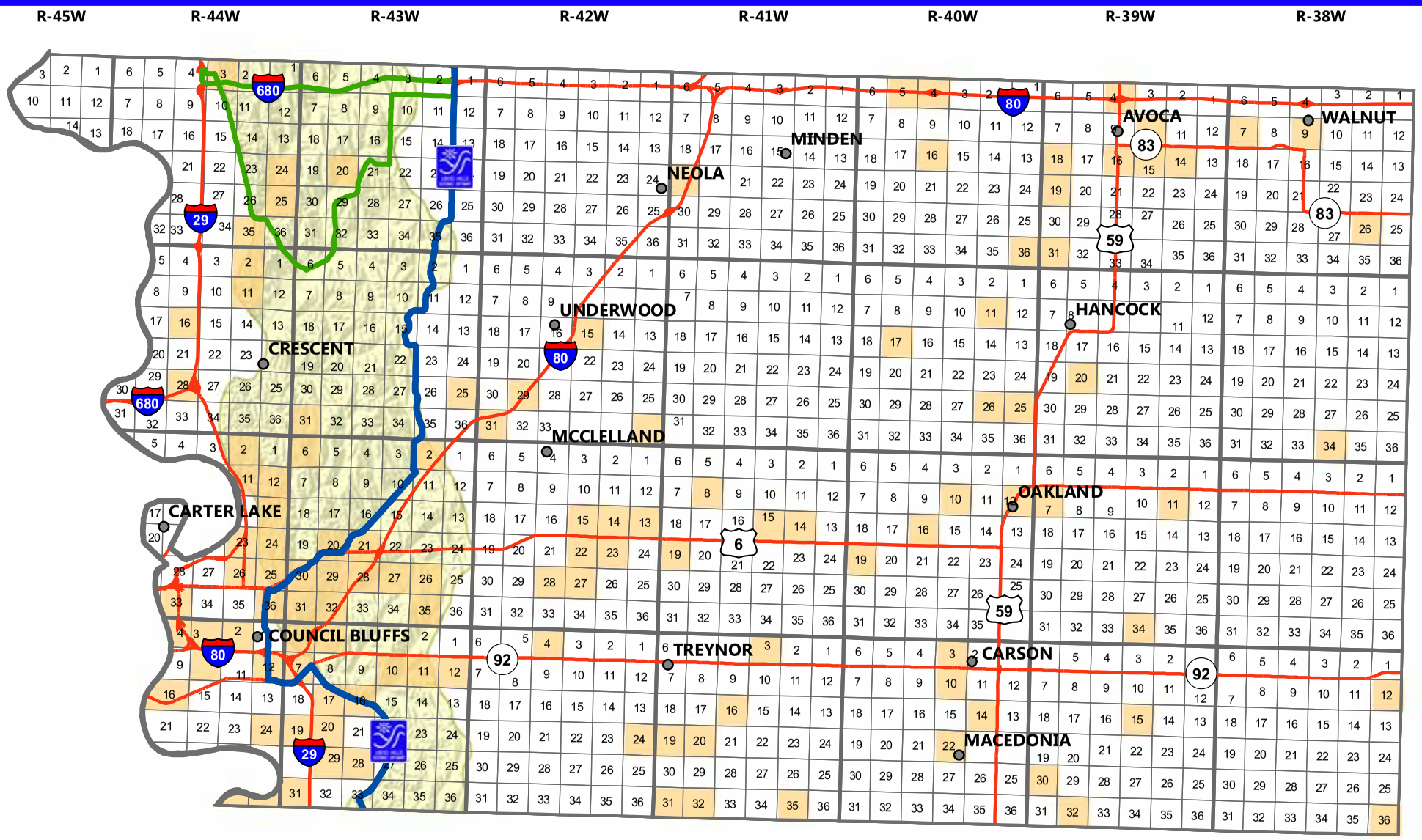
| County | Township | Range | Section |
|---|---|---|---|
| Harrison | T81N | R44W | 32 |
| Harrison | T81N | R44W | 34 |
| Harrison | T81N | R45W | 26 |

# Archaeological Resources

## Pottawattamie County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department




Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Loess Hills Landform Region
Archaeological Resource Present
Township Line
Section Line

0 1.25 2.5 5 7.5 Miles

N W E S

# Loess Hills Scenic Byway Archaeological Resources

## Pottawattamie County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

| County | Township | Range | Section |
|---|---|---|---|
| Pottawattamie | T74N | R43W | 31 |
| Pottawattamie | T74N | R44W | 35 |
| Pottawattamie | T74N | R44W | 36 |
| Pottawattamie | T74N | R38W | 12 |
| Pottawattamie | T74N | R38W | 36 |
| Pottawattamie | T74N | R39W | 15 |
| Pottawattamie | T74N | R39W | 30 |
| Pottawattamie | T74N | R39W | 32 |
| Pottawattamie | T74N | R40W | 3 |
| Pottawattamie | T74N | R40W | 10 |
| Pottawattamie | T74N | R40W | 14 |
| Pottawattamie | T74N | R40W | 22 |
| Pottawattamie | T74N | R41W | 3 |
| Pottawattamie | T74N | R41W | 16 |
| Pottawattamie | T74N | R41W | 19 |
| Pottawattamie | T74N | R41W | 20 |
| Pottawattamie | T74N | R41W | 31 |
| Pottawattamie | T74N | R41W | 32 |
| Pottawattamie | T74N | R41W | 35 |
| Pottawattamie | T74N | R42W | 4 |
| Pottawattamie | T74N | R42W | 24 |
| Pottawattamie | T74N | R43W | 5 |
| Pottawattamie | T74N | R43W | 6 |
| Pottawattamie | T74N | R43W | 7 |
| Pottawattamie | T74N | R43W | 10 |
| Pottawattamie | T74N | R43W | 11 |
| Pottawattamie | T74N | R43W | 12 |
| Pottawattamie | T74N | R43W | 16 |
| Pottawattamie | T74N | R43W | 17 |
| Pottawattamie | T74N | R43W | 19 |
| Pottawattamie | T74N | R43W | 20 |
| Pottawattamie | T74N | R43W | 28 |
| Pottawattamie | T74N | R43W | 29 |
| Pottawattamie | T74N | R43W | 31 |
| Pottawattamie | T74N | R44W | 2 |
| Pottawattamie | T74N | R44W | 3 |
| Pottawattamie | T74N | R44W | 4 |
| Pottawattamie | T74N | R44W | 10 |
| Pottawattamie | T74N | R44W | 12 |
| Pottawattamie | T74N | R44W | 16 |
| Pottawattamie | T74N | R44W | 24 |
| Pottawattamie | T74N | R44W | 35 |
| Pottawattamie | T74N | R44W | 36 |
| Pottawattamie | T75N | R39W | 7 |
| Pottawattamie | T75N | R39W | 11 |
| Pottawattamie | T75N | R39W | 34 |
| Pottawattamie | T75N | R40W | 10 |
| Pottawattamie | T75N | R40W | 12 |
| Pottawattamie | T75N | R40W | 16 |
| Pottawattamie | T75N | R40W | 19 |

# Loess Hills Scenic Byway Archaeological Resources

## Pottawattamie County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

| County | Township | Range | Section |
|---|---|---|---|
| Pottawattamie | T75N | R41W | 8 |
| Pottawattamie | T75N | R41W | 14 |
| Pottawattamie | T75N | R41W | 15 |
| Pottawattamie | T75N | R41W | 19 |
| Pottawattamie | T75N | R42W | 13 |
| Pottawattamie | T75N | R42W | 14 |
| Pottawattamie | T75N | R42W | 15 |
| Pottawattamie | T75N | R42W | 22 |
| Pottawattamie | T75N | R42W | 23 |
| Pottawattamie | T75N | R42W | 27 |
| Pottawattamie | T75N | R42W | 28 |
| Pottawattamie | T75N | R43W | 2 |
| Pottawattamie | T75N | R43W | 6 |
| Pottawattamie | T75N | R43W | 20 |
| Pottawattamie | T75N | R43W | 21 |
| Pottawattamie | T75N | R43W | 26 |
| Pottawattamie | T75N | R43W | 27 |
| Pottawattamie | T75N | R43W | 28 |
| Pottawattamie | T75N | R43W | 29 |
| Pottawattamie | T75N | R43W | 30 |
| Pottawattamie | T75N | R43W | 31 |
| Pottawattamie | T75N | R43W | 32 |
| Pottawattamie | T75N | R43W | 35 |
| Pottawattamie | T75N | R44W | 2 |
| Pottawattamie | T75N | R44W | 11 |
| Pottawattamie | T75N | R44W | 12 |
| Pottawattamie | T75N | R44W | 13 |
| Pottawattamie | T75N | R44W | 23 |
| Pottawattamie | T75N | R44W | 24 |
| Pottawattamie | T75N | R44W | 25 |
| Pottawattamie | T75N | R44W | 26 |
| Pottawattamie | T75N | R44W | 33 |
| Pottawattamie | T75N | R44W | 36 |
| Pottawattamie | T76N | R38W | 34 |
| Pottawattamie | T76N | R39W | 20 |
| Pottawattamie | T76N | R40W | 11 |
| Pottawattamie | T76N | R40W | 17 |
| Pottawattamie | T76N | R40W | 25 |
| Pottawattamie | T76N | R40W | 26 |
| Pottawattamie | T76N | R42W | 15 |
| Pottawattamie | T76N | R42W | 29 |
| Pottawattamie | T76N | R42W | 31 |
| Pottawattamie | T76N | R42W | 36 |
| Pottawattamie | T76N | R43W | 25 |
| Pottawattamie | T76N | R43W | 31 |
| Pottawattamie | T76N | R44W | 2 |
| Pottawattamie | T76N | R44W | 11 |
| Pottawattamie | T76N | R44W | 16 |
| Pottawattamie | T76N | R44W | 28 |
| Pottawattamie | T77N | R38W | 7 |

# Loess Hills Scenic Byway Archaeological Resources

## Pottawattamie County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

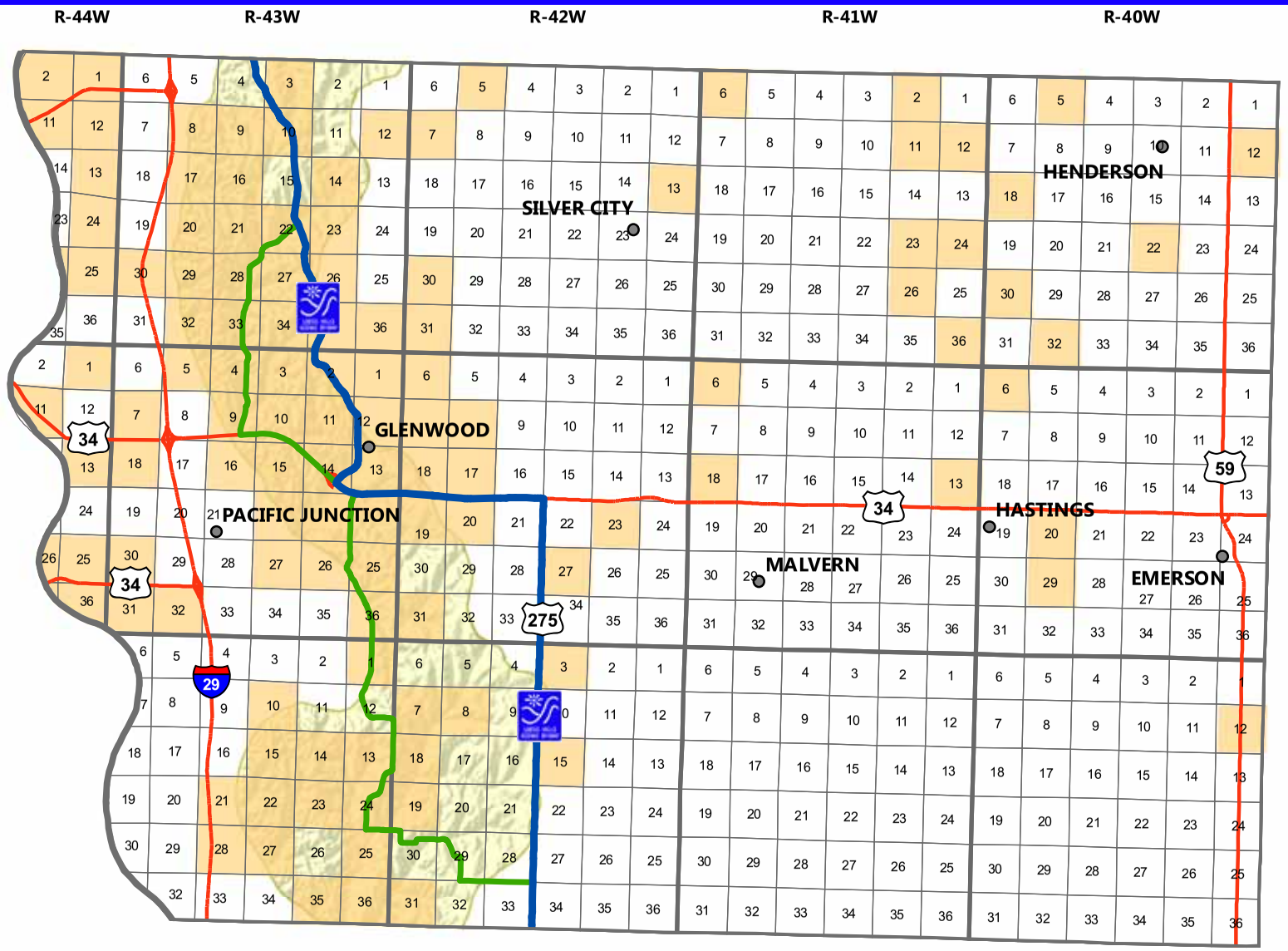
| County | Township | Range | Section |
|---|---|---|---|
| Pottawattamie | T77N | R38W | 9 |
| Pottawattamie | T77N | R38W | 26 |
| Pottawattamie | T77N | R39W | 4 |
| Pottawattamie | T77N | R39W | 10 |
| Pottawattamie | T77N | R39W | 14 |
| Pottawattamie | T77N | R39W | 15 |
| Pottawattamie | T77N | R39W | 16 |
| Pottawattamie | T77N | R39W | 18 |
| Pottawattamie | T77N | R39W | 19 |
| Pottawattamie | T77N | R39W | 31 |
| Pottawattamie | T77N | R40W | 4 |
| Pottawattamie | T77N | R40W | 5 |
| Pottawattamie | T77N | R40W | 16 |
| Pottawattamie | T77N | R40W | 36 |
| Pottawattamie | T77N | R41W | 19 |
| Pottawattamie | T77N | R43W | 20 |
| Pottawattamie | T77N | R44W | 24 |
| Pottawattamie | T77N | R44W | 25 |
| Pottawattamie | T77N | R44W | 35 |

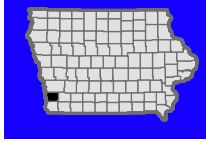
# Archaeological Resources

## Mills County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Loess Hills Landform Region
Archaeological Resource Present
Township Line
Section Line

0 1 2 4 6 Miles

N W E S

# Loess Hills Scenic Byway Archaeological Resources

## Mills County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

| County | Township | Range | Section |
|---|---|---|---|
| Mills | T71N | R40W | 12 |
| Mills | T71N | R42W | 3 |
| Mills | T71N | R42W | 7 |
| Mills | T71N | R42W | 8 |
| Mills | T71N | R42W | 15 |
| Mills | T71N | R42W | 18 |
| Mills | T71N | R42W | 19 |
| Mills | T71N | R42W | 31 |
| Mills | T71N | R43W | 1 |
| Mills | T71N | R43W | 10 |
| Mills | T71N | R43W | 13 |
| Mills | T71N | R43W | 14 |
| Mills | T71N | R43W | 15 |
| Mills | T71N | R43W | 21 |
| Mills | T71N | R43W | 22 |
| Mills | T71N | R43W | 23 |
| Mills | T71N | R43W | 24 |
| Mills | T71N | R43W | 25 |
| Mills | T71N | R43W | 27 |
| Mills | T71N | R43W | 28 |
| Mills | T71N | R43W | 35 |
| Mills | T71N | R43W | 36 |
| Mills | T72N | R40W | 6 |
| Mills | T72N | R40W | 20 |
| Mills | T72N | R40W | 29 |
| Mills | T72N | R41W | 6 |
| Mills | T72N | R41W | 13 |
| Mills | T72N | R41W | 18 |
| Mills | T72N | R42W | 6 |
| Mills | T72N | R42W | 7 |
| Mills | T72N | R42W | 8 |
| Mills | T72N | R42W | 17 |
| Mills | T72N | R42W | 18 |
| Mills | T72N | R42W | 19 |
| Mills | T72N | R42W | 20 |
| Mills | T72N | R42W | 23 |
| Mills | T72N | R42W | 27 |
| Mills | T72N | R42W | 31 |
| Mills | T72N | R43W | 1 |
| Mills | T72N | R43W | 2 |
| Mills | T72N | R43W | 3 |
| Mills | T72N | R43W | 4 |
| Mills | T72N | R43W | 5 |
| Mills | T72N | R43W | 7 |
| Mills | T72N | R43W | 9 |
| Mills | T72N | R43W | 10 |
| Mills | T72N | R43W | 11 |
| Mills | T72N | R43W | 12 |
| Mills | T72N | R43W | 13 |
| Mills | T72N | R43W | 14 |

# Loess Hills Scenic Byway Archaeological Resources

## Mills County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

| County | Township | Range | Section |
|---|---|---|---|
| Mills | T72N | R43W | 15 |
| Mills | T72N | R43W | 16 |
| Mills | T72N | R43W | 18 |
| Mills | T72N | R43W | 22 |
| Mills | T72N | R43W | 23 |
| Mills | T72N | R43W | 24 |
| Mills | T72N | R43W | 25 |
| Mills | T72N | R43W | 26 |
| Mills | T72N | R43W | 27 |
| Mills | T72N | R43W | 30 |
| Mills | T72N | R43W | 31 |
| Mills | T72N | R43W | 32 |
| Mills | T72N | R43W | 36 |
| Mills | T72N | R44W | 11 |
| Mills | T72N | R44W | 13 |
| Mills | T72N | R44W | 25 |
| Mills | T72N | R44W | 26 |
| Mills | T72N | R44W | 35 |
| Mills | T72N | R44W | 36 |
| Mills | T72N | R44W | 1 |
| Mills | T73N | R40W | 5 |
| Mills | T73N | R40W | 12 |
| Mills | T73N | R40W | 18 |
| Mills | T73N | R40W | 22 |
| Mills | T73N | R40W | 30 |
| Mills | T73N | R40W | 32 |
| Mills | T73N | R41W | 2 |
| Mills | T73N | R41W | 6 |
| Mills | T73N | R41W | 11 |
| Mills | T73N | R41W | 12 |
| Mills | T73N | R41W | 23 |
| Mills | T73N | R41W | 24 |
| Mills | T73N | R41W | 26 |
| Mills | T73N | R41W | 36 |
| Mills | T73N | R42W | 5 |
| Mills | T73N | R42W | 7 |
| Mills | T73N | R42W | 13 |
| Mills | T73N | R42W | 30 |
| Mills | T73N | R42W | 31 |
| Mills | T73N | R43W | 3 |
| Mills | T73N | R43W | 8 |
| Mills | T73N | R43W | 9 |
| Mills | T73N | R43W | 10 |
| Mills | T73N | R43W | 12 |
| Mills | T73N | R43W | 14 |
| Mills | T73N | R43W | 16 |
| Mills | T73N | R43W | 17 |
| Mills | T73N | R43W | 20 |
| Mills | T73N | R43W | 21 |
| Mills | T73N | R43W | 22 |

# Loess Hills Scenic Byway Archaeological Resources

## Mills County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

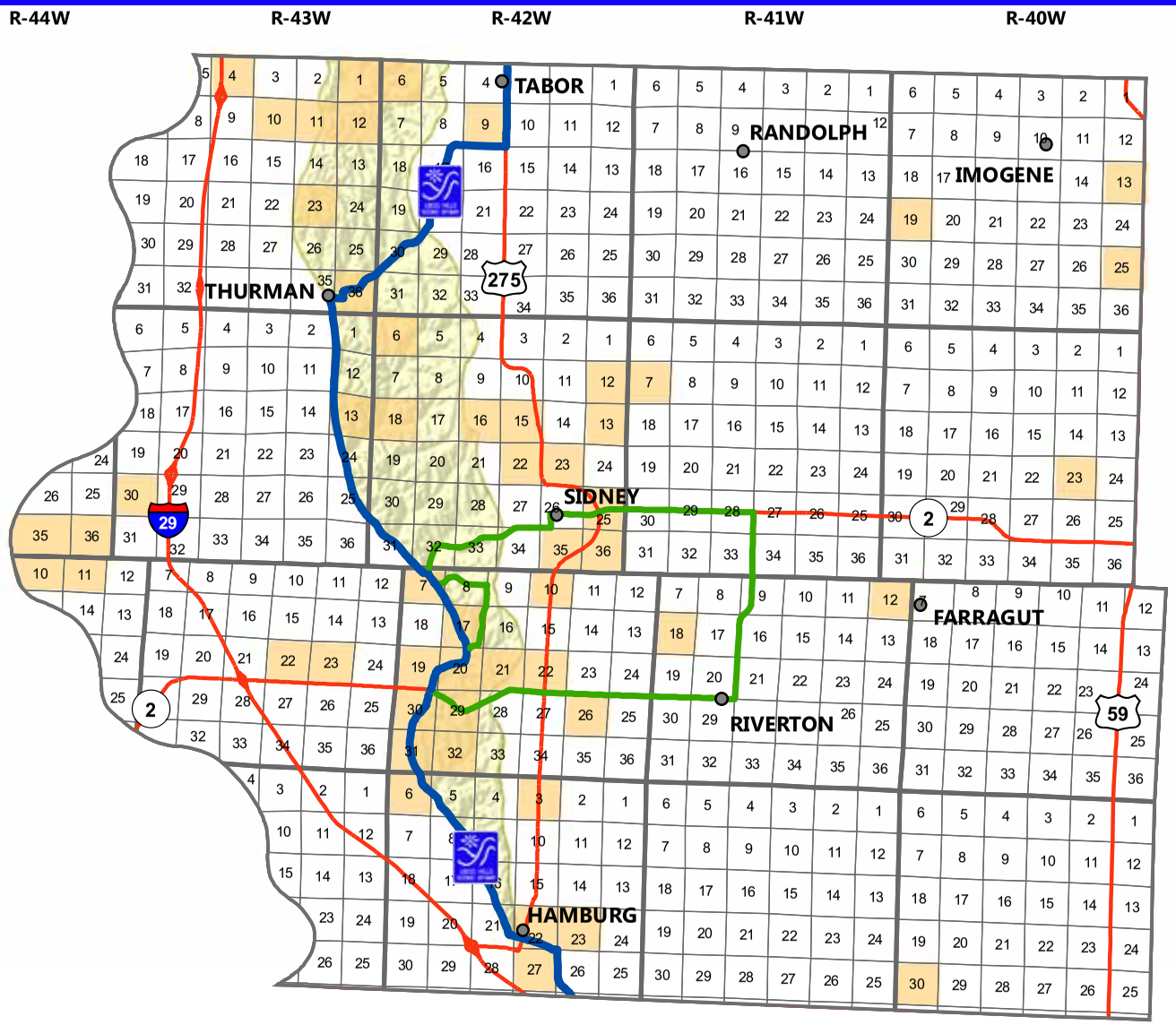
| County | Township | Range | Section |
|---|---|---|---|
| Mills | T73N | R43W | 23 |
| Mills | T73N | R43W | 26 |
| Mills | T73N | R43W | 27 |
| Mills | T73N | R43W | 28 |
| Mills | T73N | R43W | 29 |
| Mills | T73N | R43W | 30 |
| Mills | T73N | R43W | 32 |
| Mills | T73N | R43W | 33 |
| Mills | T73N | R43W | 34 |
| Mills | T73N | R43W | 35 |
| Mills | T73N | R43W | 36 |
| Mills | T73N | R44W | 1 |
| Mills | T73N | R44W | 2 |
| Mills | T73N | R44W | 11 |
| Mills | T73N | R44W | 12 |
| Mills | T73N | R44W | 13 |
| Mills | T73N | R44W | 24 |
| Mills | T73N | R44W | 25 |
| Mills | T73N | R44W | 26 |
| Mills | T73N | R40W | 5 |
| Mills | T73N | R41W | 2 |
| Mills | T73N | R41W | 6 |
| Mills | T73N | R42W | 5 |

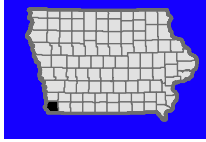
# Archaeological Resources

## Fremont County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



- Loess Hills Scenic Byway Spine
- Loess Hills Scenic Byway Loop
- Loess Hills Landform Region
- Archaeological Resource Present
- Township Line
- Section Line

0 1.25 2.5 5 7.5 Miles

N W E S

# Loess Hills Scenic Byway Archaeological Resources

## Fremont County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

| County | Township | Range | Section |
|---|---|---|---|
| Fremont | T67N | R40W | 30 |
| Fremont | T67N | R42W | 3 |
| Fremont | T67N | R42W | 6 |
| Fremont | T67N | R42W | 22 |
| Fremont | T67N | R42W | 23 |
| Fremont | T67N | R42W | 27 |
| Fremont | T68N | R41W | 12 |
| Fremont | T68N | R41W | 18 |
| Fremont | T68N | R42W | 7 |
| Fremont | T68N | R42W | 10 |
| Fremont | T68N | R42W | 17 |
| Fremont | T68N | R42W | 19 |
| Fremont | T68N | R42W | 20 |
| Fremont | T68N | R42W | 21 |
| Fremont | T68N | R42W | 22 |
| Fremont | T68N | R42W | 26 |
| Fremont | T68N | R42W | 29 |
| Fremont | T68N | R42W | 30 |
| Fremont | T68N | R42W | 31 |
| Fremont | T68N | R42W | 32 |
| Fremont | T68N | R43W | 22 |
| Fremont | T68N | R43W | 23 |
| Fremont | T68N | R44W | 10 |
| Fremont | T68N | R44W | 11 |
| Fremont | T69N | R40W | 23 |
| Fremont | T69N | R41W | 7 |
| Fremont | T69N | R42W | 6 |
| Fremont | T69N | R42W | 12 |
| Fremont | T69N | R42W | 13 |
| Fremont | T69N | R42W | 15 |
| Fremont | T69N | R42W | 16 |
| Fremont | T69N | R42W | 18 |
| Fremont | T69N | R42W | 22 |
| Fremont | T69N | R42W | 23 |
| Fremont | T69N | R42W | 25 |
| Fremont | T69N | R42W | 35 |
| Fremont | T69N | R42W | 36 |
| Fremont | T69N | R43W | 13 |
| Fremont | T69N | R43W | 30 |
| Fremont | T69N | R44W | 35 |
| Fremont | T69N | R44W | 36 |
| Fremont | T70N | R40W | 13 |
| Fremont | T70N | R40W | 19 |
| Fremont | T70N | R40W | 25 |
| Fremont | T70N | R42W | 6 |
| Fremont | T70N | R42W | 9 |
| Fremont | T70N | R43W | 1 |
| Fremont | T70N | R43W | 4 |
| Fremont | T70N | R43W | 10 |
| Fremont | T70N | R43W | 11 |

# Loess Hills Scenic Byway Archaeological Resources

## Fremont County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

| County | Township | Range | Section |
|---|---|---|---|
| Fremont | T70N | R43W | 12 |
| Fremont | T70N | R43W | 23 |
| Fremont | T70N | R43W | 36 |

# Understanding the Scenic Quality

### *Definition of Scenic Quality*

The intrinsic quality of scenery is defined as the heightened visual experience derived from the view of natural and human made elements of the visual environment of the scenic byway corridor. Scenic quality refers to the characteristics of the landscape that are strikingly distinct and offer a pleasing and most memorable visual impression. All elements of the landscape including landform, water, vegetation and human-made development—contribute to the intrinsic quality of the corridor's visual environment (U.S. Government Federal Register 26761, 1995).

### *What do we know?*

The scenic qualities of the Loess Hills are widely recognized as one of the Scenic Byway Corridor's most distinguishing features. Traveling along the western edge of the Loess Hills, one enjoys spectacular views of this unusual landform as the bluffs rise up out of the river valley's easterly edge. Equally breathtaking are views from within the landform that extend out over the vast Missouri River flood plain and across the ridge tops of rolling loess topography. Viewing the fall colors of native prairie and hardwood forests in the Loess Hills is among the most popular attractions for travelers.

**THE LOESS HILLS OF IOWA**
*An American Treasure Unique in the World*

In addition to remarkable natural features, human activities are important components of scenic quality in the Loess Hills. Farmsteads are nestled in valleys; historic churches, one-room schoolhouses and pioneer cemeteries dot the countryside; fields of cultivated crops form intricate patterns on the land; and narrow, winding roadways connect small, rural communities. This mixture of human-made resources contribute to a scenic quality which is unique to the Loess Hills.

Ingemann Danish Lutheran Church, Monona County D. Poggensee

A comprehensive assessment of scenic resources in the Loess Hills was an important exercise in selecting roadways to be part of the Scenic Byway. A more complete understanding of specific landscape elements that contribute to scenic quality in the Byway Corridor provides guidance for the location and management of public amenities and the application of land use strategies. Knowledge of scenic quality has been developed through public preference testing, visual perception studies and viewshed mapping.

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*An American Treasure Unique in the World*

## Public Preference Testing

A comprehensive analysis of visual resources was performed to help select the roadways that are part of the Loess Hills Scenic Byway. Public preference testing of scenic values was used to develop general criteria about scenic quality in the Loess Hills' landscape. The following statements summarize those values:

- Landscape scenes were preferred with an average or high amount of variety in the land cover and surface elements;
- Landscape scenes were preferred with an average or long sight distance, particularly overviews or vistas; and
- Landscape scenes were preferred with an average or high sense of belonging together.

The selection of Loess Hills Scenic Byway routes was based on connecting the areas in the Corridor where these preferred view types were most dominant in the landscape.

**Visual Perception Studies**
Visual perception studies performed during development of the *Corridor Management Plan* provided a detailed assessment of scenic quality in the Byway Corridor. The visual perception studies identified specific scenic resources, or landscape elements, that travelers in the Loess Hills found "most", and "least", appealing.

As with the public preference tests conducted during establishment of the Scenic Byway, visual perception studies utilized photographs of scenes in the Loess Hills and asked residents and visitors about their likes and dislikes. Additionally, travelers were given cameras to take photographs of views in the Loess Hills that they found particularly pleasing, as well as scenes that detracted from their visual experience.

The visual perception studies determined that people generally preferred seeing the following features in the Loess Hills landscape:

- Native prairie vegetation in the foreground or right-of-way;
- Water present as a stream, lake, or wetland;
- A combination of two or three of the following land covers: forest, prairie, and grassland;
- Juxtaposition in the landform of extreme western edge (steepest topography) to inner landform (moderately rolling topography);
- Overview or mid-level view of the landscape;
- Ridgeline, if present, is undeveloped and unobstructed;
- Proximity to critical resource areas or public recreation areas;
- Landscape views with minimal or no development;
- Sense of enclosure either from vegetation or the landform;
- Roadways, if present, with a curving alignment and narrow pavement width; and
- Exposed vertical cuts of loess deposits in the landscape.

**THE LOESS HILLS OF IOWA**
*An American Treasure Unique in the World*

Features in the Loess Hills landscape preferred by travelers D. Poggensee

Results of the visual perception studies provides guidance for the location and management of new and existing visitor amenities. Knowledge of the specific landscape elements that contribute to scenic quality in the Byway Corridor is also important information for the development and application of land use strategies.

**THE LOESS HILLS OF IOWA**
*An American Treasure Unique in the World*

### Viewshed Mapping

Viewshed mapping for the Loess Hills Scenic Byway Corridor was performed during development of the *Corridor Management Plan*. A viewshed is a quantitative measure of distance seen from a given point on the Scenic Byway.

Viewshed maps, together with qualitative assessments of scenic resources such as the results of visual perception studies, provides additional guidance for the location and management of developed site facilities, or amenities. Similarly, viewshed maps will assist with the development and implementation of land use strategies designed to preserve and enhance the scenic quality of the Corridor.

### *What needs to be done?*

Scenic quality in the Byway Corridor is comprised of the unique combination of natural, historic, cultural, archeological and recreational resources in the Loess Hills. As such, understanding and enjoying this scenic quality will contribute to a greater awareness of, and appreciation for, the Corridor's other special qualities. Implementation of specific actions included in "Corridor Development Actions" section of the *Corridor Management Plan*, will:

- Increase and improve opportunities for the public to view and appreciate those resources that contribute to the Loess Hills Scenic Byway Corridor's scenic quality; and
- Protect and enhance areas that possess resources representative of the Scenic Byway Corridor's scenic quality.

**THE LOESS HILLS OF IOWA**
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## *Maps*

Byway Viewshed and Scenic Overlook Inventory

**THE LOESS HILLS OF IOWA**
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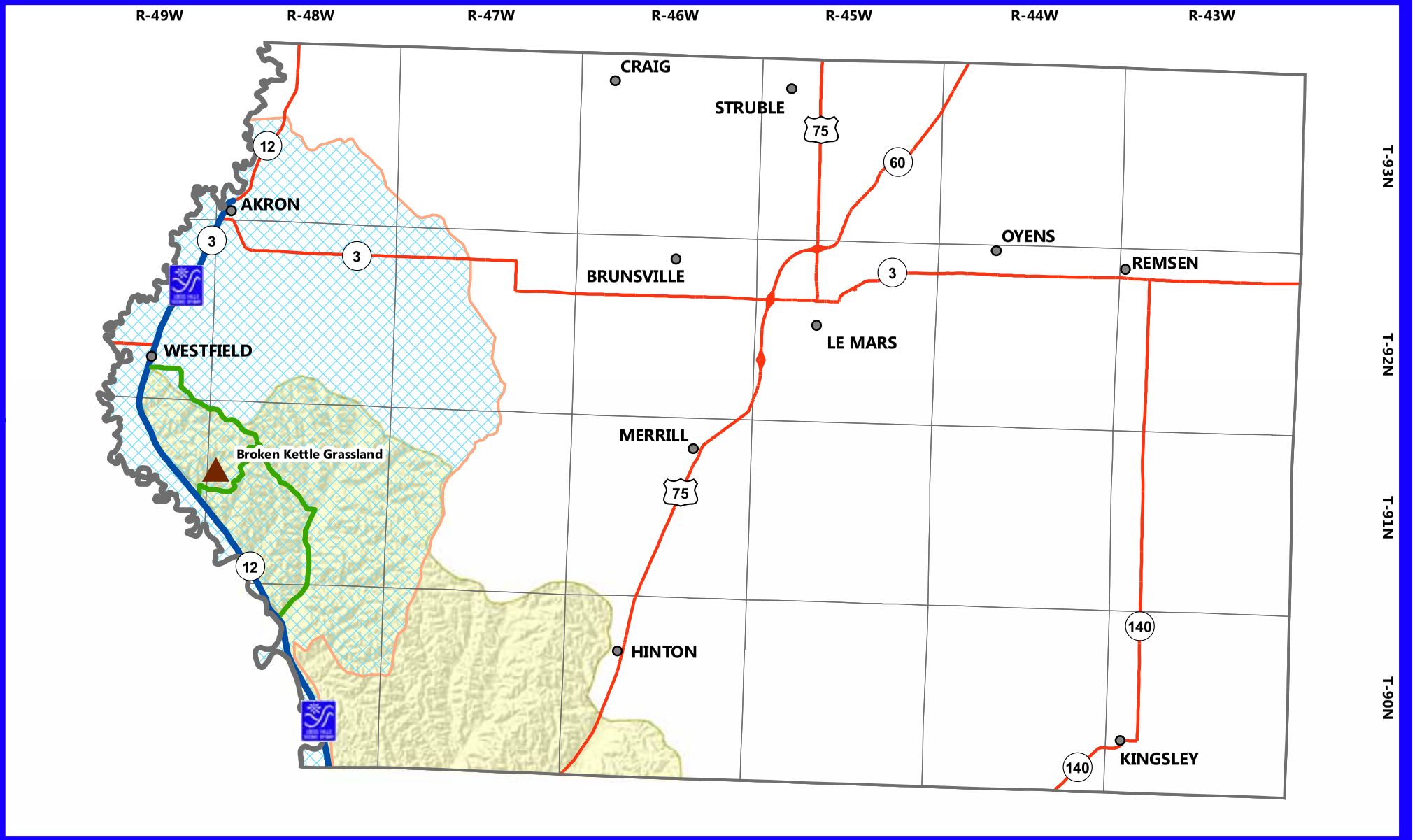
# Byway Viewshed and Scenic Overlook Inventory

## Plymouth County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department

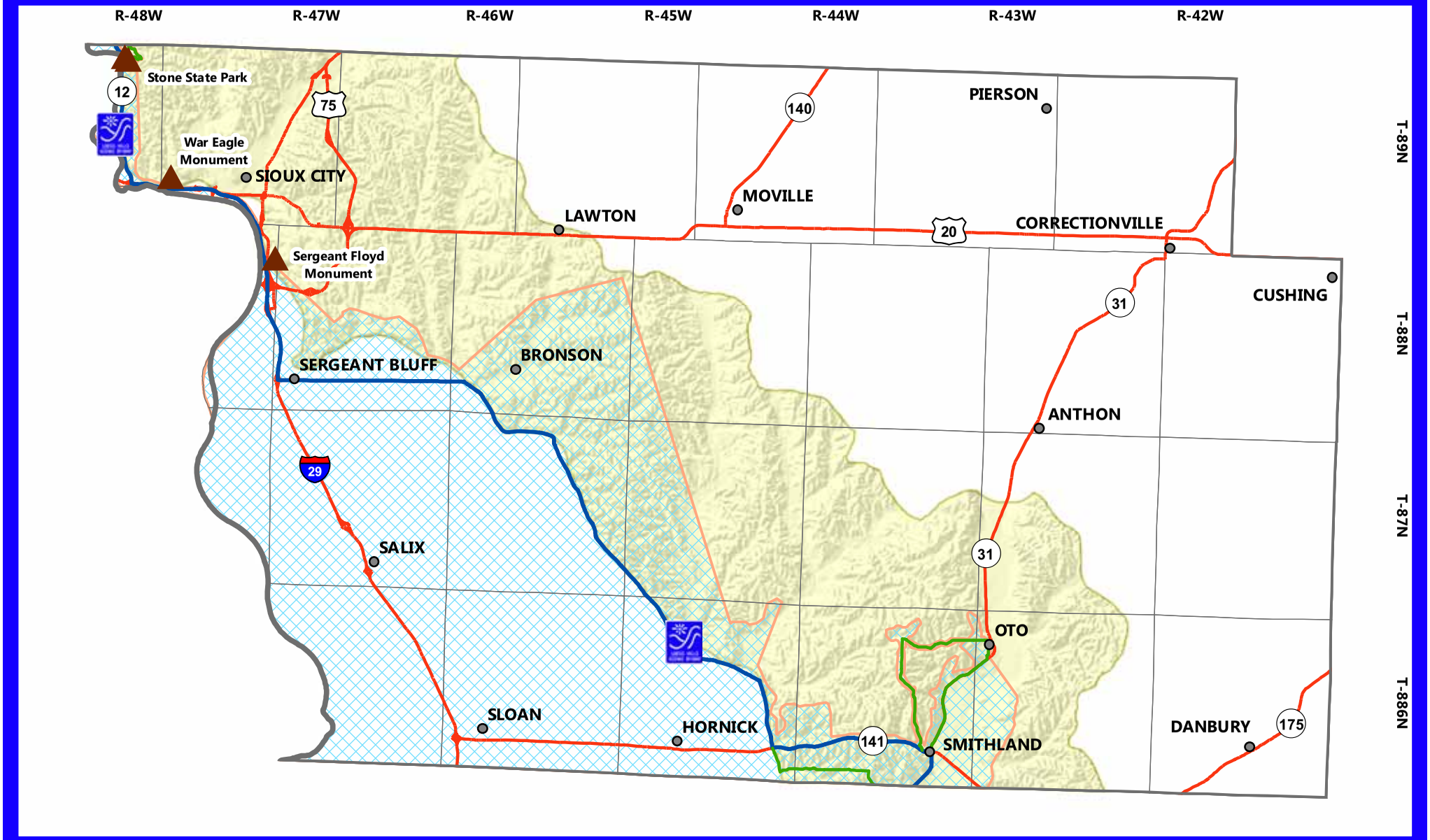


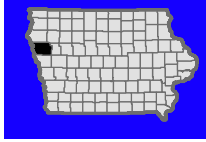
# Byway Viewshed and Scenic Overlook Inventory

## Woodbury County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Highways
Township Line
Viewshed Area
Loess Hills Landform Region
Scenic Overlook

0 1.25 2.5 5 7.5 Miles

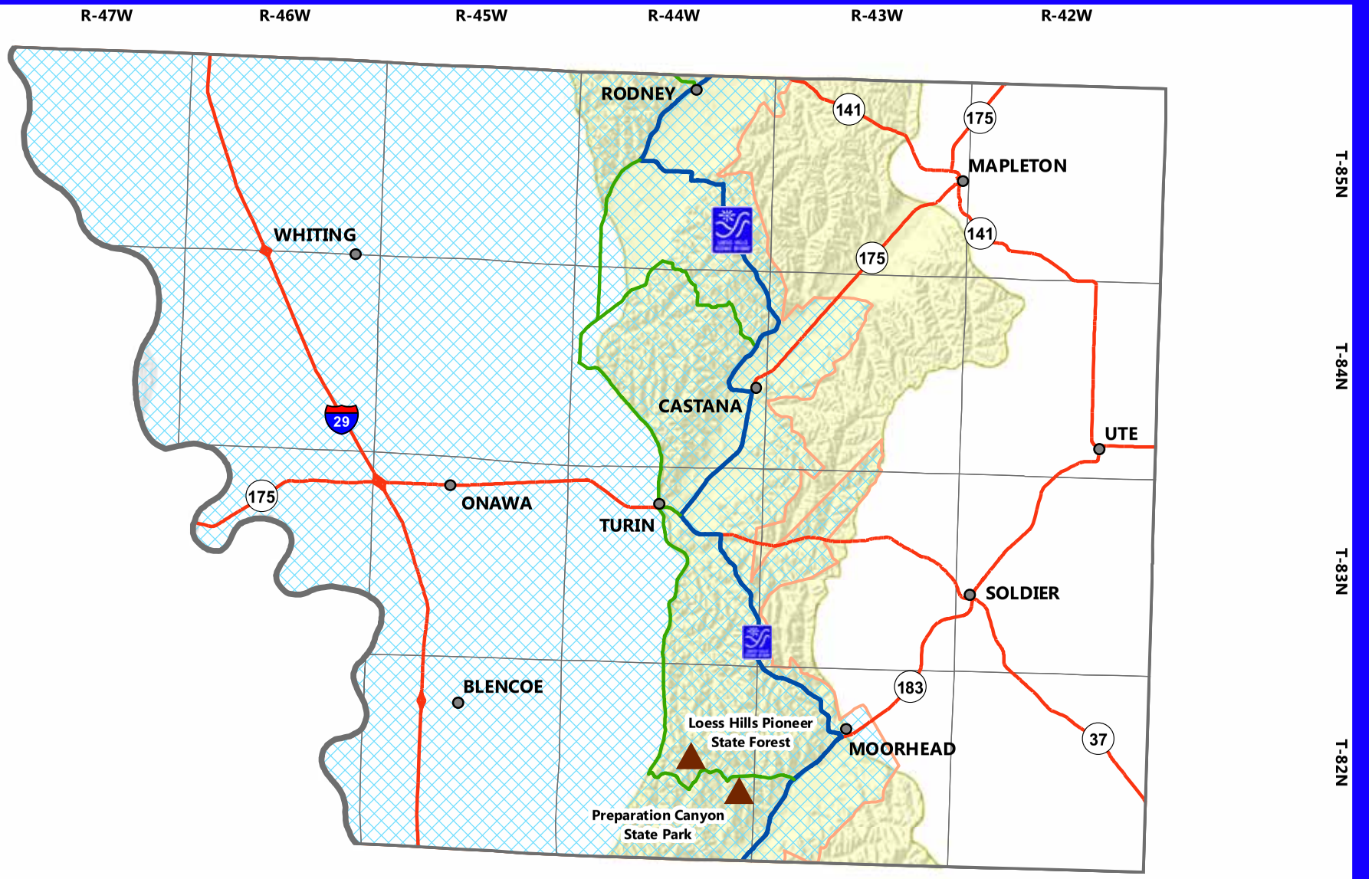
N W E S

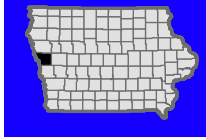
# Byway Viewshed and Scenic Overlook Inventory

## Monona County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Highways
Township Line
Viewshed Area
Loess Hills Landform Region
Scenic Overlook

0 1.25 2.5 5 7.5 Miles

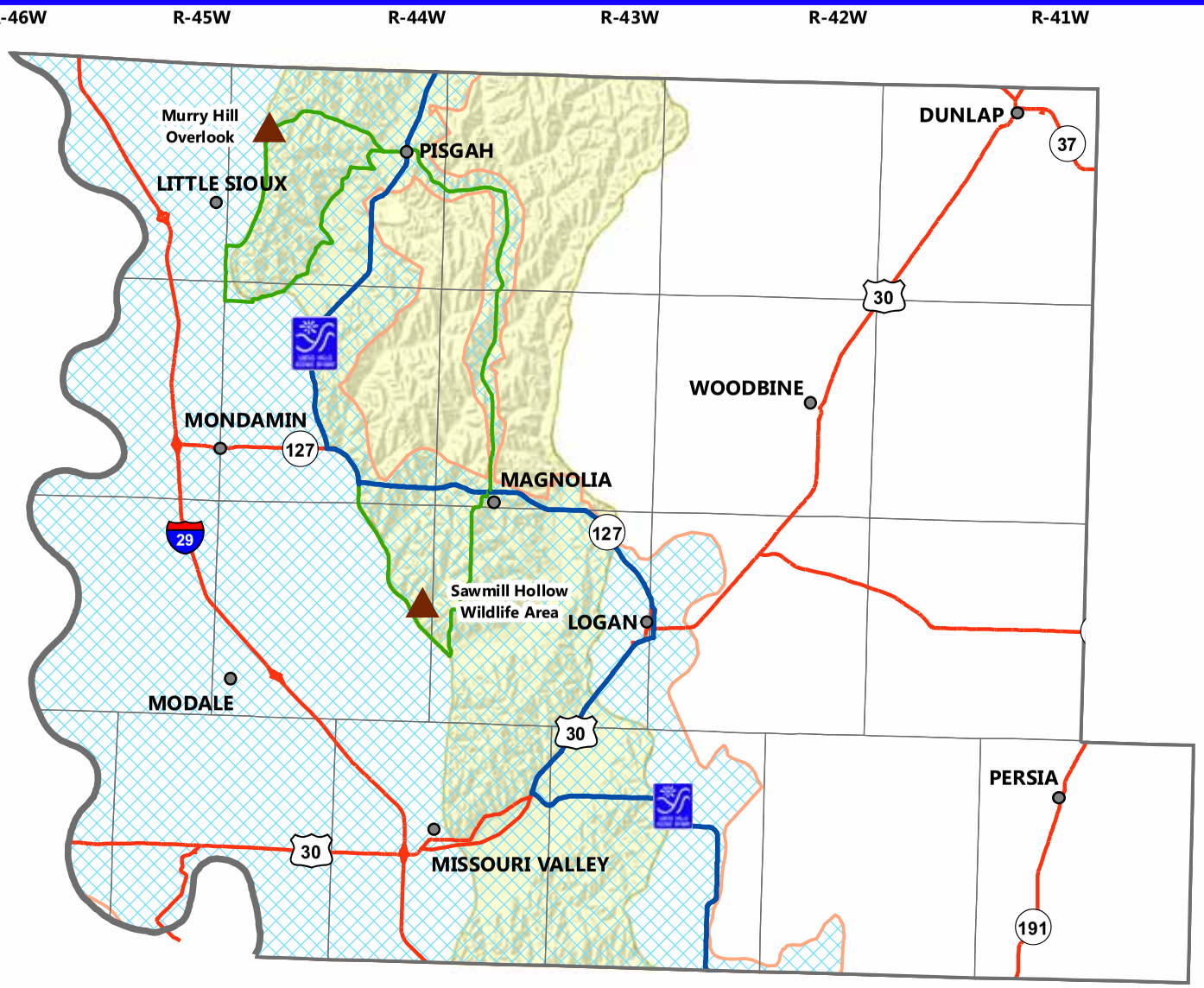
N W E S

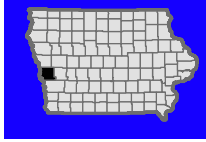
# Byway Viewshed and Scenic Overlook Inventory

## Harrison County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Highways
Township Line
Viewshed Area
Loess Hills Landform Region
Scenic Overlook

0 1.25 2.5 5 7.5 Miles

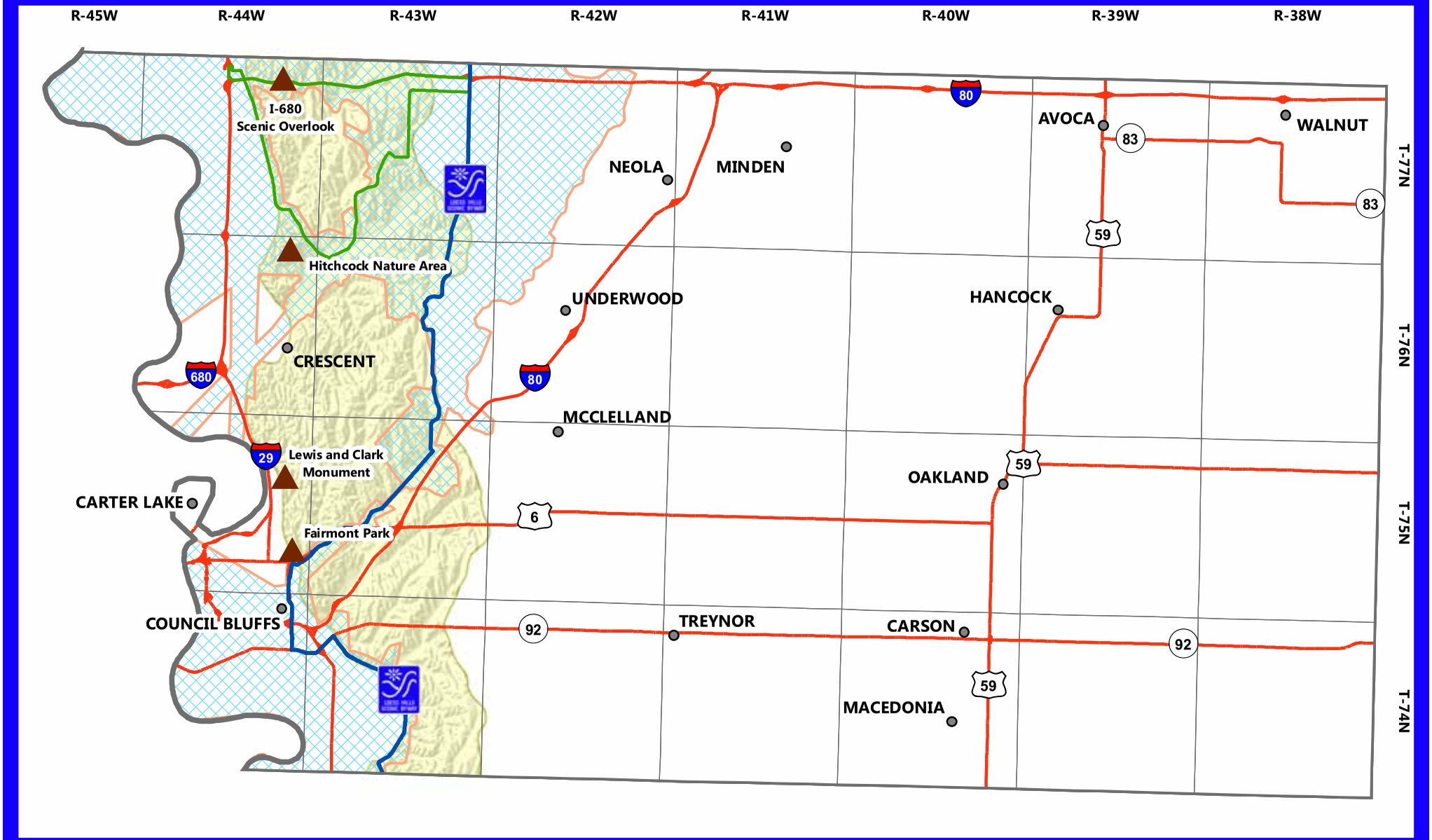
N W E S

# Byway Viewshed and Scenic Overlook Inventory

## Pottawattamie County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department




Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Highways
Township Line
Viewshed Area
Loess Hills Landform Region
Scenic Overlook

0 1.25 2.5 5 7.5 Miles

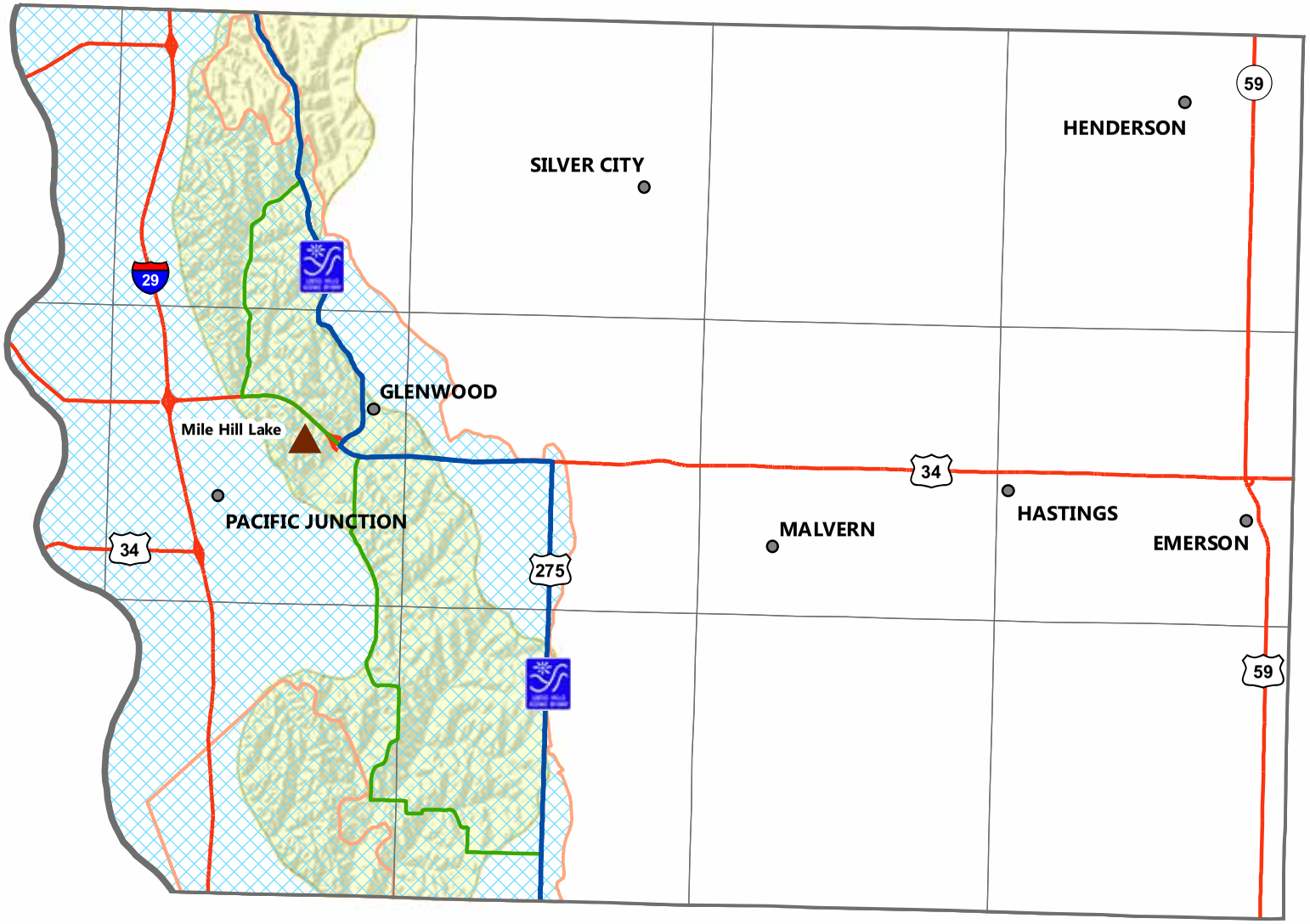
N W E S

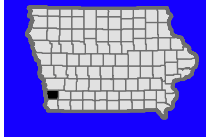
# Byway Viewshed and Scenic Overlook Inventory

## Mills County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Highways
Township Line
Viewshed Area
Loess Hills Landform Region
Scenic Overlook

0 1 2 4 6 Miles

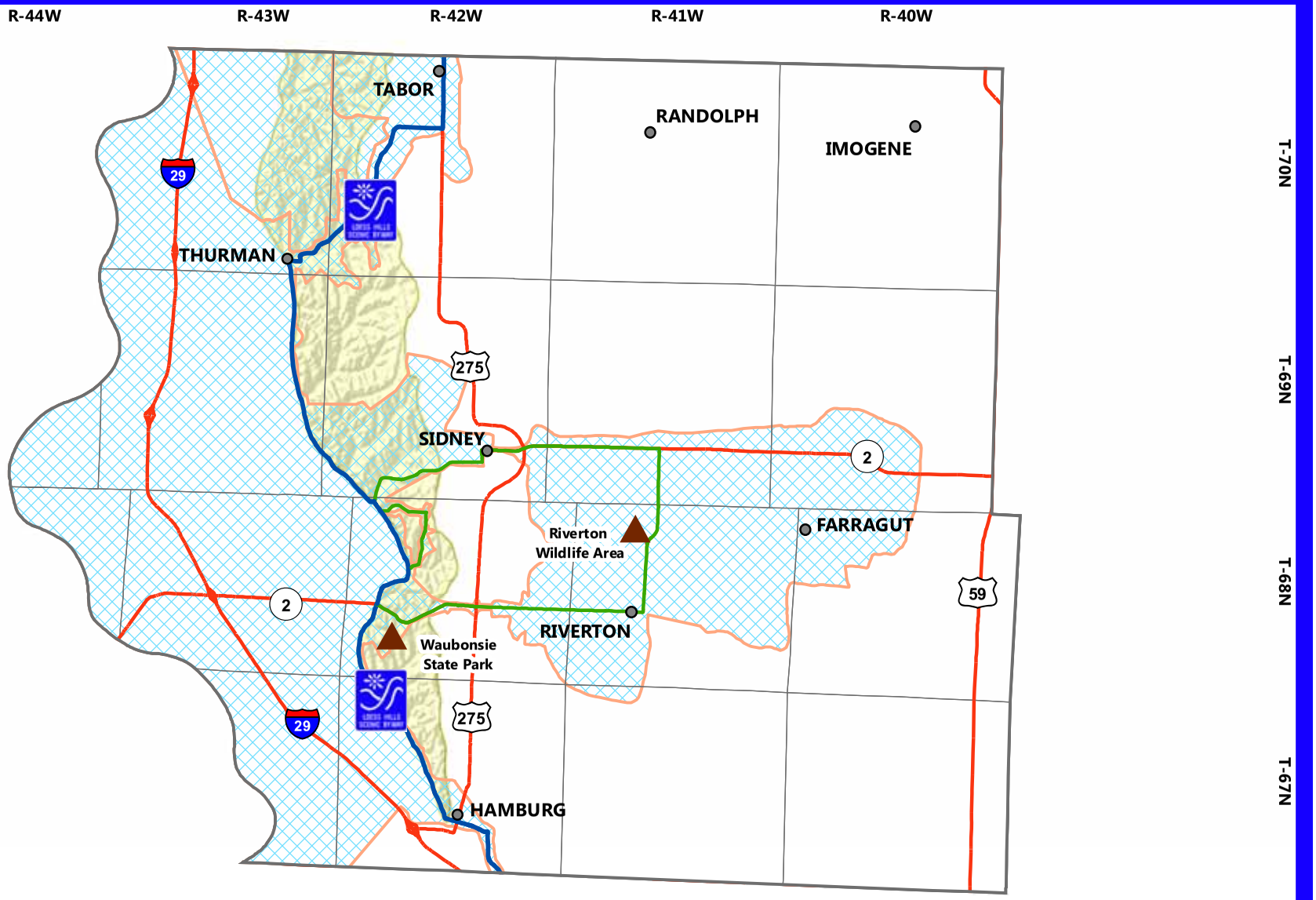
N W E S

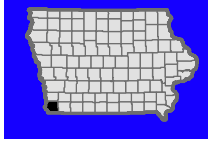
# Byway Viewshed and Scenic Overlook Inventory

## Fremont County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Highways
Township Line
Viewshed Area
Loess Hills Landform Region
Scenic Overlook

0 1.25 2.5 5 7.5 Miles

N W E S

# Understanding the Historic Quality

### *Definition of Historic Quality*

Historic quality encompasses legacies of the past that are distinctly associated with physical elements of the landscape, whether natural or human made, that are of such historic significance that they educate the viewer and stir an appreciation for the past. The historic elements reflect the actions of people and may include buildings, settlement patterns and other examples of human activity. Historic features can be inventoried, mapped and interpreted. They posses integrity of location, design, setting, material, workmanship, feeling and association. (United States Government Federal Register 26761, 1995).

### *What do we know?*

Humans arrived in the Loess Hills region just as major loess deposition was ending, about 12,000 years ago (Mutel 32, 1986). Prior to Euro-American presence in the region, the Loess Hills was a hunting ground and home for several Native American, or Indian, cultures (Bonney 86, 1986). The region's earliest inhabitants were members of these prehistoric and early historic cultures including the Paleo, Archaic and Woodland Indians; Great Oasis, Mill Creek and Glenwood people; and Oneota, Ioway, Omaha, Sioux and Potawatomi tribes.

**THE LOESS HILLS OF IOWA**
*An American Treasure Unique in the World*

The first written records for the region surrounding the Loess Hills predate the Lewis and Clark expedition journals by about a century and were recorded by French traders and explorers in the early 1700s. (Mutel 54, 1989). During their famous expedition, Lewis and Clark recorded in their journals descriptions and reactions to the remarkable loess bluffs and hills. Artists, such as George Catlin and Karl Bodmer, visually recorded the high bluffs and strangely eroded banks along the winding Missouri River in their drawings and paintings (Mutel xvi, 1994).

Euro-American settlement of the region that followed took place slowly until 1846 when the Mormons started their migration toward the Great Salt Lake Valley. After that, permanent settlement of the Loess Hills region occurred rapidly as towns developed to serve the needs of a growing farm population (Mutel 54, 60, 1989).

Dramatic changes to the Loess Hills landscape resulted from the agricultural activities, urban development and construction of transportation routes that accompanied the region's settlement. The distribution and abundance of many plant and animal species native to the Loess Hills were greatly reduced. Physical impacts to the Loess Hills region took place as the erosion of farmland occurred; limestone, shale and gravel mines were excavated; fill dirt for construction was removed; and streams were straightened to reduce flooding in river valleys.

**Representative Historic Resources of the Loess Hills Scenic Byway Corridor**

There are specific resources in the Loess Hills that are most representative of the intrinsic historic quality of this region. Those resources that best depict the historic quality of the Scenic Byway Corridor are:

- **National Historic Landmarks:** The National Park Service has designated four historic resources in the Scenic Byway Corridor as National Historic Landmarks. National Historic Landmarks are recognized as the Nation's most important historic and cultural resources. They are buildings, historic districts, structures, sites and objects that possess exceptional value or quality in illustrating or interpreting the heritage of the United States. The four National Historic Landmarks located in the Loess Hills Scenic Byway Corridor are: the **General Dodge House** in Council Bluffs and the **Sergeant Floyd Monument**, **Sergeant Floyd Riverboat**, and **Woodbury County Courthouse**, all three in Sioux City. The **Todd House Museum** in Tabor, currently listed on the National Register for Historic Places as a stop along the Underground Railroad, is in the process of applying to become a National Historic Landmark.

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Sergeant Floyd Riverboat, Sioux City M. Whye

**THE LOESS HILLS OF IOWA**
*An American Treasure Unique in the World*

- **National Register of Historic Places Sites:** There are 65 resources in the Scenic Byway Corridor listed on the National Register of Historic Places. Placement on the Register recognizes these resources for their significance in American history, architecture, archaeology, engineering and culture. These resources contribute to an understanding of the historical and cultural foundations of the nation in general and the Loess hills region in particular. Resources in the Corridor on the register include the **Todd House Museum** in Tabor, a restored underground railroad station; **Carstens' Memorial Farmstead**, an 1800s restored farm; the **Haymarket Commercial District** in Council Bluffs; and **county courthouses** in Fremont, Harrison, Monona, Woodbury and Plymouth Counties. The number and variety of sites on the National Register illustrates the richness of historic resources in the Scenic Byway Corridor.

- **National Historic Trails and the National Western Historic Trails Center:** Four National Park Service designated National Historic Trails travel through portions of the Loess Hills Scenic Byway Corridor. National Historic Trails recognize the historical significance of the people and events associated with them from a national perspective. Location of the **Mormon Pioneer, Lewis and Clark**, **Oregon** and **California National Historic Trails** in the Corridor is evidence of the extraordinarily important role that western Iowa and the Loess Hills region have played in the nation's history. The **National Western Historical Trails Center** in Council Bluffs is the only facility of its type in the United States dedicated to interpreting America's westward migration and, specifically, these National Historic Trails.

Sergeant Floyd Monument M. Whye

**THE LOESS HILLS OF IOWA**
*An American Treasure Unique in the World*

- **Bertrand Steamboat Museum, DeSoto National Wildlife Refuge:** Features and events that illustrate the important role of the Missouri River in the nation's history are an integral part of the historic quality of the Loess Hills Scenic Byway Corridor. The Bertrand Steamboat Museum interprets the historic

significance of the Missouri River steamboat era in the settlement and development of the United States west of the Mississippi River. The thousands of artifacts recovered from the sunken 1860-era sternwheeler Bertrand exhibited at the museum provide a detailed picture of Midwestern life in the mid-19th century. The site of the Bertrand's discovery and excavation is also located on the Refuge.

### *What needs to be done?*

National recognition for many of the resources in the Scenic Byway Corridor confirms the exceptional quality of historic features and events in the Loess Hills. As much as the natural and scenic qualities it possesses, the rich intrinsic historic quality of the Corridor contributes to the region's unique character and attractiveness to the traveling public. Specific actions included in the "Corridor Development Actions" section of the *Corridor Management Plan* will address the need to:

- Increase the public's enjoyment and understanding of, and improve their access to, resources that comprise the historic quality of the Loess Hills Scenic Byway Corridor;
- Continue to identify, research, interpret, promote and obtain national recognition for features and events that contribute to the historic quality of the Scenic Byway Corridor; and
- Utilize diverse types of communication media to tell the history of the Scenic Byway Corridor.

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***Maps and Tables***

National Historic Landmarks - Map

Historical Resources - Map

Historical Sites - Table

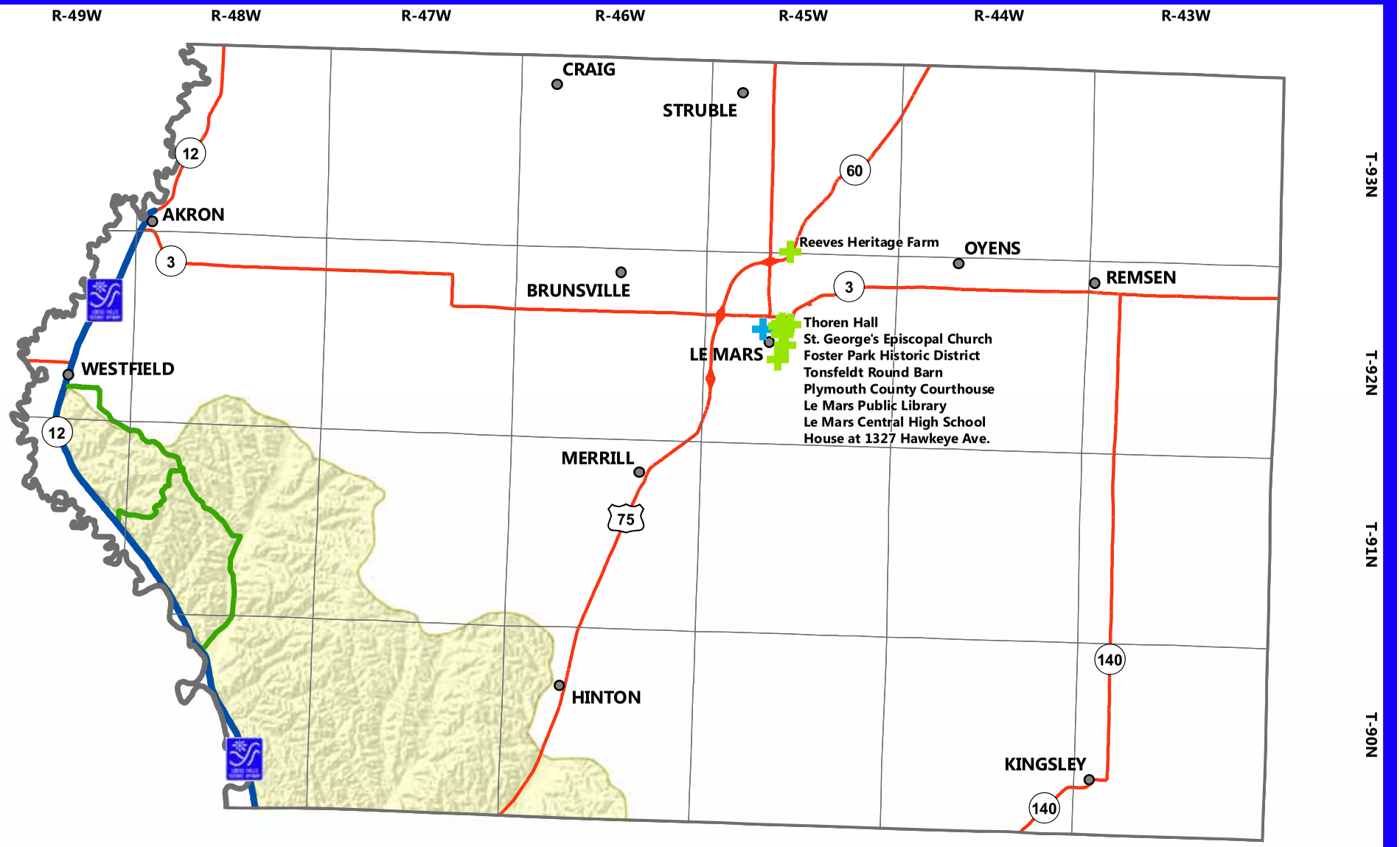
**THE LOESS HILLS OF IOWA**
*An American Treasure Unique in the World*

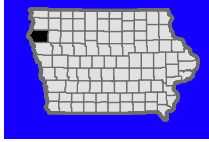
# Historical Resources

## Plymouth County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Township Line
Loess Hills Landform Region
National Register of Historic Places Site
Other Significant Historic Place Site

0 1.5 3 6 9 Miles

N W E S

# Loess Hills Scenic Byway Historical Resources

## Plymouth County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

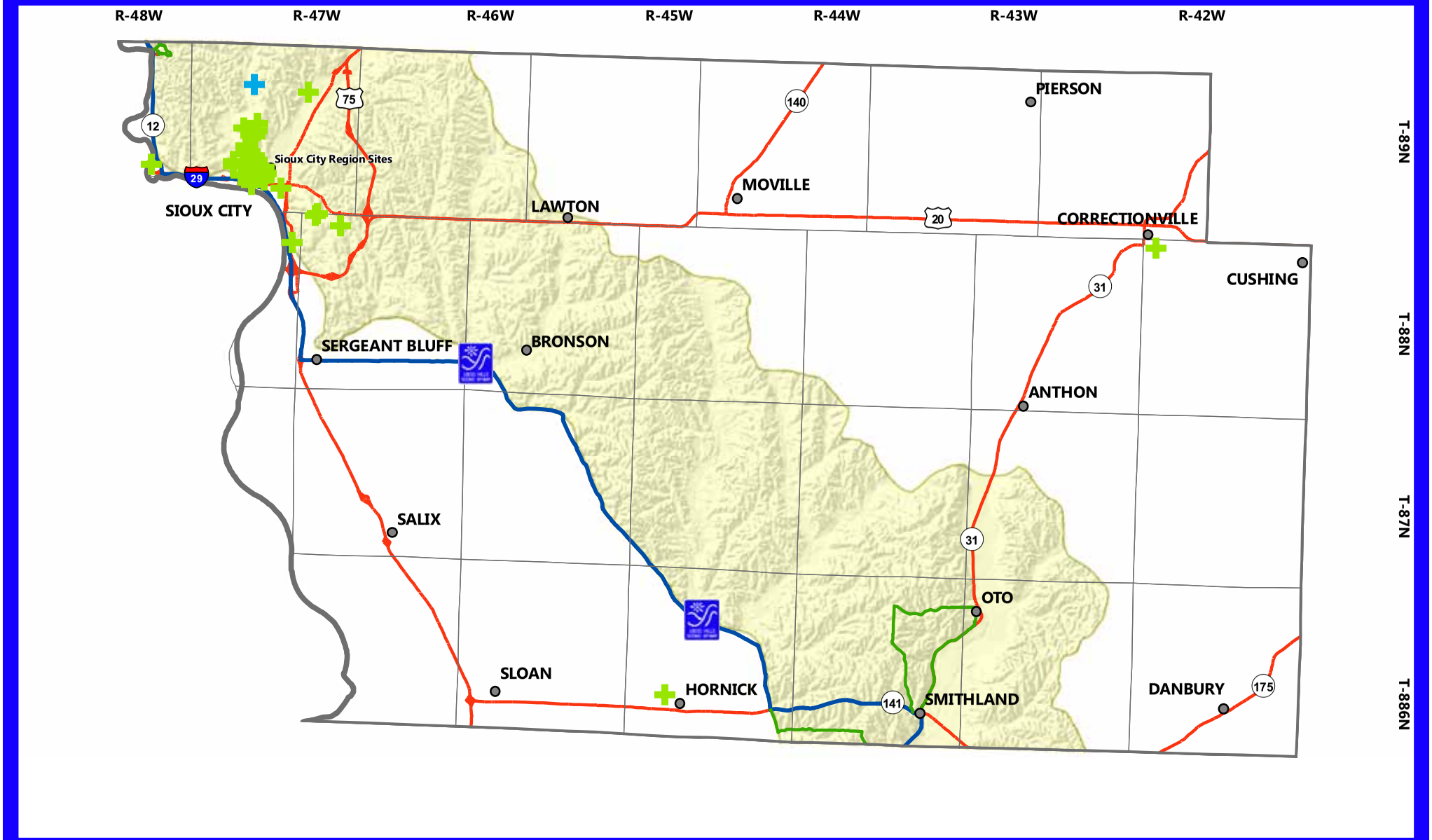
| Property Name | Address | City | In National Register |
|---|---|---|---|
| Foster Park Historic District | | Le Mars | YES |
| House at 1327 Hawkeye Ave. | 1327 Hawkeye Ave. | Le Mars | NO |
| Le Mars Central High School | | Le Mars | YES |
| Le Mars Public Library | 200 Central | Le Mars | YES |
| Plymouth County Courthouse | E. 3rd Ave. | Le Mars | YES |
| Reeves Heritage Farm | | Le Mars | YES |
| St. George's Episcopal Church | 400 1st Ave., SE | Le Mars | YES |
| Thoren Hall | 10th St SE | Le Mars | YES |
| Tonsfeldt Round Barn | Plymouth Co. Fairgrounds | Le Mars | YES |

# Historical Resources

## Woodbury County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



# Loess Hills Scenic Byway Historical Resources

## Woodbury County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

| Property Name | Address | City | In National Register |
|---|---|---|---|
| Alhambra Apartments | 801 8th St | Sioux City | YES |
| Ashby, Atchison A., House | | Sioux City | YES |
| Badgerow Building | 622 W 4th St | Sioux City | YES |
| Bay State Block | 1105 4th St | Sioux City | YES |
| Boston Block | 1005 4th St | Sioux City | YES |
| Bruguier, Theophile, Cabin | | Sioux City | YES |
| Burkam, Elzy G., House | | Sioux City | YES |
| Charles City College Hall | | Sioux City | YES |
| Chic, Milwk, St. Pl & Pacf Depot | Main St South of Railway St. | Hornick | YES |
| Commercial Building | 1124 4th St | Sioux City | YES |
| Commercial Building | 1008 4th St | Sioux City | YES |
| Davidson Building | 505 6th St | Sioux City | YES |
| Ego Hotel/EGRALHARVE Building | 1119 4th St | Sioux City | YES |
| Evans Block | 1126 4th St | Sioux City | YES |
| Everist, H. H., House | | Sioux City | YES |
| Fourth Street Historic District | 4th St | Sioux City | YES |
| Franz, Margaretta, House | | Sioux City | YES |
| Knapp-Spencer Warehouse | 3rd St | Sioux City | YES |
| Knott, Dr. Van Buren, House | | Sioux City | YES |
| Krummann Block | 1101 4th St | Sioux City | YES |
| Lee Block | 1016 4th St | Sioux City | YES |
| Leeds Junior High School | | Sioux City | YES |
| Levich/Nelson Building | 1002 4th St | Sioux City | YES |
| Main Hall | | Sioux City | YES |
| Major Block | 1010 4th St | Sioux City | YES |
| Martin Hotel | | Sioux City | YES |
| Martin, T. S., and Company | 515 4th St | Sioux City | YES |
| Mary Elizabeth Day Nursery | 814 Court St | Sioux City | YES |
| McCornak, Fletcher A., House | | Sioux City | YES |
| Midland Packing Company | | Sioux City | YES |
| Motor Mart Building | | Sioux City | YES |
| Mount Sinai Temple | | Sioux City | YES |
| Mulhall, James P., House | | Sioux City | YES |
| Municipal Auditorium | | Sioux City | YES |
| Mylius-Eaton House | | Sioux City | YES |
| New Orpheum Theatre | 520-28 Pierce St. | Sioux City | YES |
| Oversen, Julius and Anine, House | | Sioux City | YES |
| Peirce, John, House | | Sioux City | YES |
| Perasso Building | 1127 4th St | Sioux City | YES |
| Plymouth Building | 1100 4th St | Sioux City | YES |
| Purcell, Ulysses G., House | | Sioux City | YES |
| Rose Hill Historic District | | Sioux City | YES |
| Schulein, Ben and Harriet, House | | Sioux City | YES |
| Sergeant Floyd Monument | Glenn Ave. and Lewis Rd. | Sioux City | YES |
| Sioux City Baptist Church | | Sioux City | YES |
| Sioux City Central High School | | Sioux City | YES |
| Sioux City Fire Station Number 3 | 1211 5th St | Sioux City | YES |
| Sioux City Free Public Library | 705 6th St | Sioux City | YES |
| Sioux City Linseed Oil Works | 210 Court St | Sioux City | YES |
| Sioux City Masonic Temple | | Sioux City | YES |

# Loess Hills Scenic Byway Historical Resources

## Woodbury County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

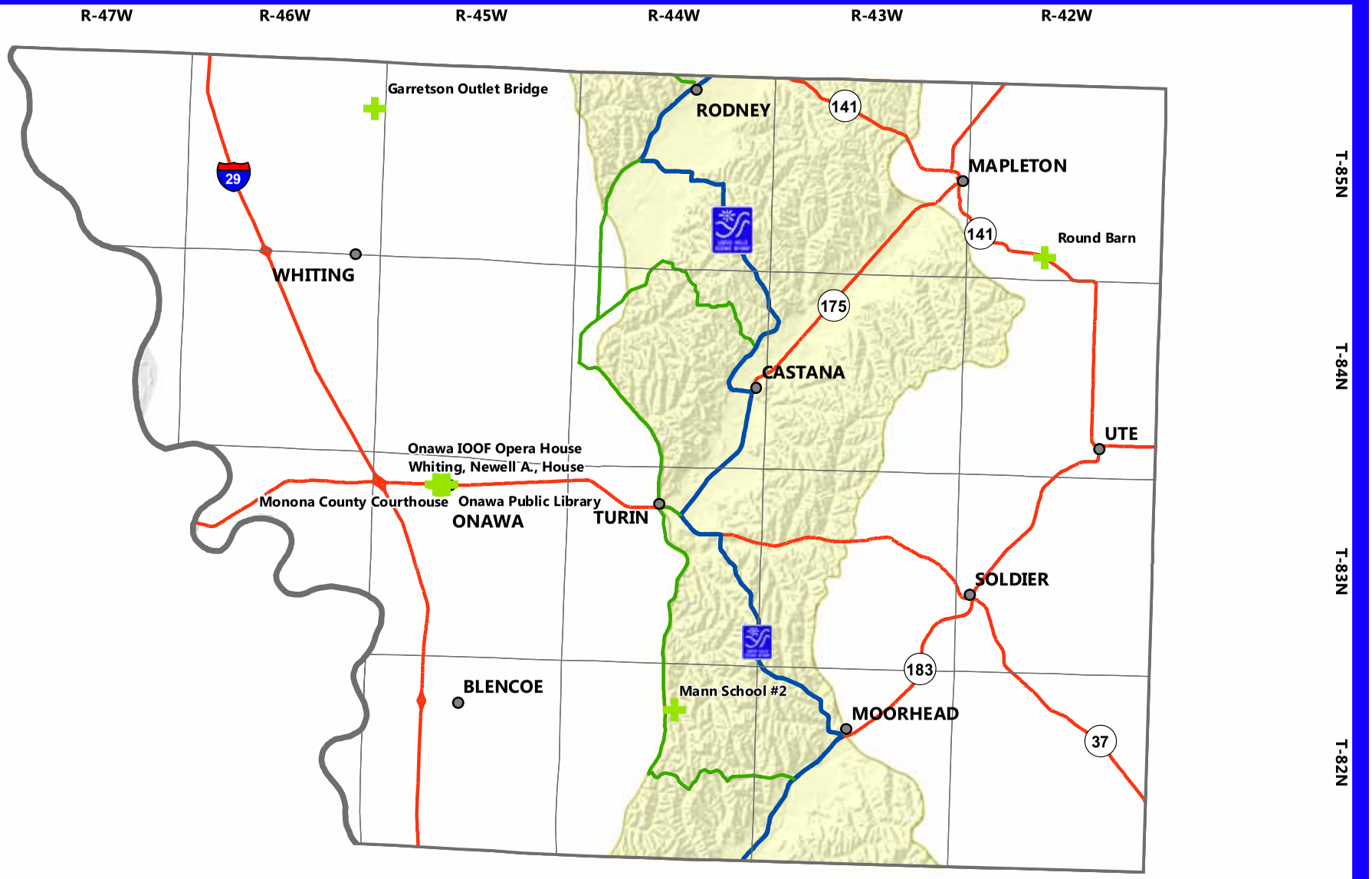
| Property Name | Address | City | In National Register |
|---|---|---|---|
| Sioux City Public Museum | 2901 Jackson St. | Sioux City | NO |
| Sloan, Martin L., House | | Sioux City | YES |
| St. Boniface Historic District | 703 W 5th St | Sioux City | YES |
| St. Thomas Episcopal Church | | Sioux City | YES |
| Stevenson, John, Saloon | 1019 4th St | Sioux City | YES |
| Tinkel House | | Correctionville | YES |
| Warrior Hotel | 519 6th St | Sioux City | YES |
| White Palace System | 1116 4th St | Sioux City | YES |
| Williges Building | | Sioux City | YES |
| Woodbury County Courthouse | | Sioux City | YES |

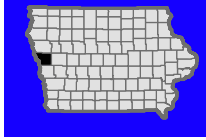
# Historical Resources

## Monona County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Township Line
Loess Hills Landform Region
National Register of Historic Places Site
Other Significant Historic Place Site

0 1.25 2.5 5 7.5 Miles

N W E S

# Loess Hills Scenic Byway Historical Resources

## Monona County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

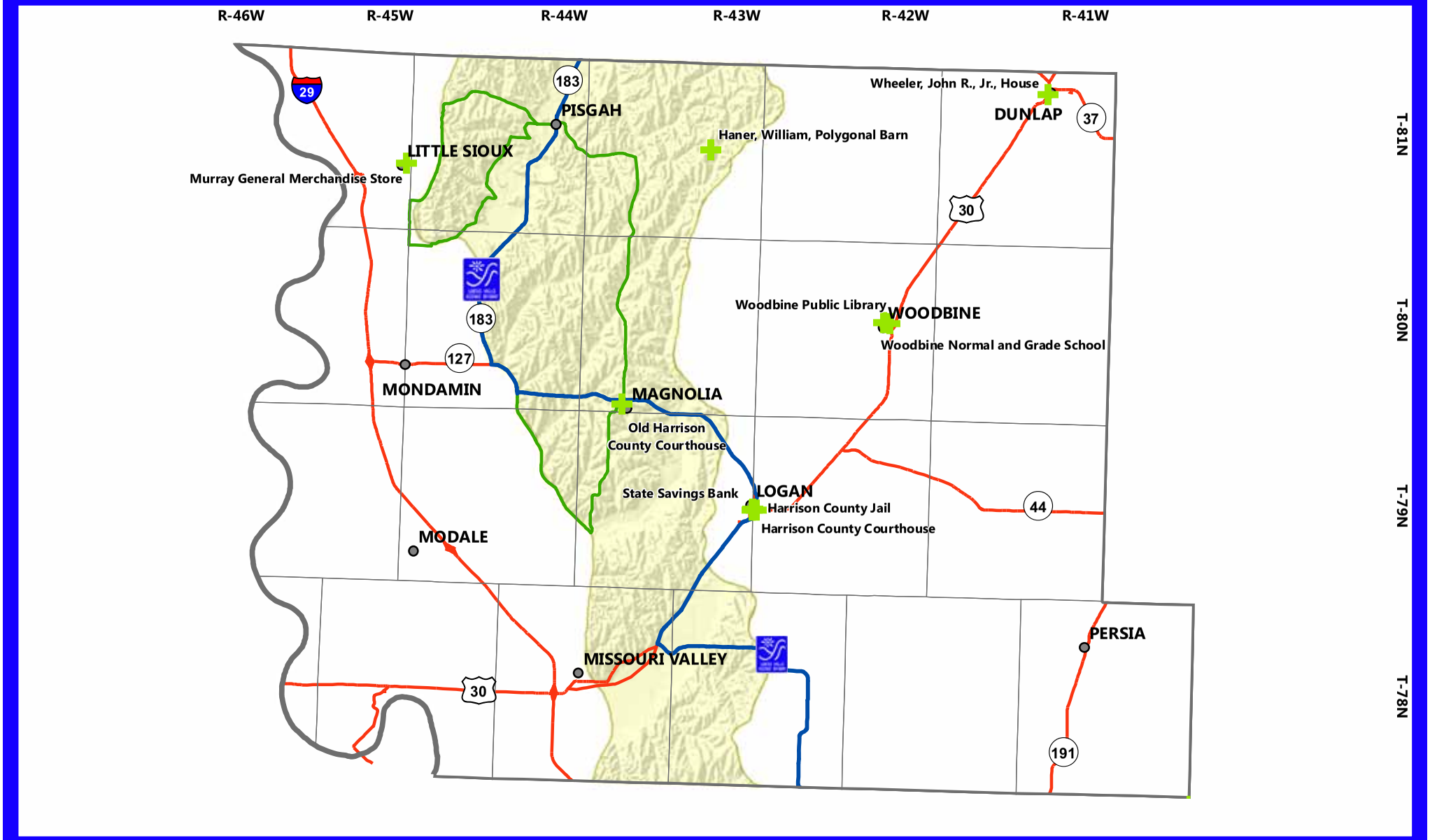
Prepared By: Pottawattamie County GIS Department

| Property Name | Address | City | In National Register |
|---|---|---|---|
| Garretson Outlet Bridge | | Whiting | YES |
| Mann School #2 | | Moorhead | YES |
| Monona County Courthouse | Iowa Ave | Onawa | YES |
| Onawa IOOF Opera House | 1023 10th Av | Onawa | YES |
| Onawa Public Library | 707 Iowa Ave | Onawa | YES |
| Round Barn | | Mapleton | YES |
| Whiting, Newell A., House | 1106 Iowa Av | Onawa | YES |

# Historical Resources
## Harrison County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



# Loess Hills Scenic Byway Historical Resources

## Harrison County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

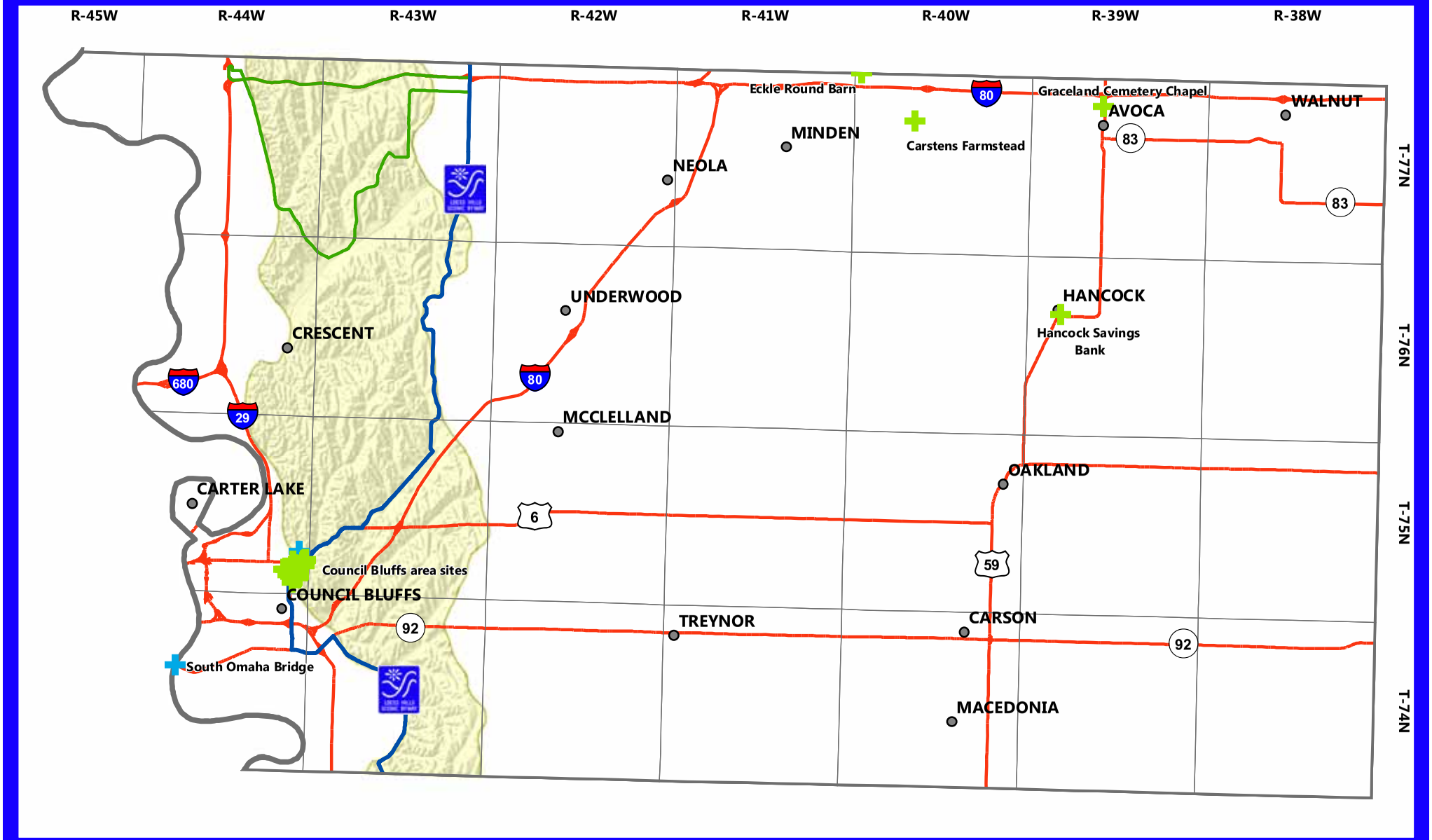
| Property Name | Address | City | In National Register |
|---|---|---|---|
| Haner, William, Polygonal Barn | | Pisgah | YES |
| Harrison County Courthouse | 7th St | Logan | YES |
| Harrison County Jail | 105 S 1st Ave | Logan | YES |
| Murray General Merchandise Store | 2nd St | Little Sio | YES |
| Old Harrison County Courthouse | 401 Locust S | Magnolia | YES |
| State Savings Bank | 312 E 7th St | Logan | YES |
| Wheeler, John R., Jr., House | 407 S 3rd St | Dunlap | YES |
| Woodbine Normal and Grade School | 5th St | Woodbine | YES |
| Woodbine Public Library | 58 5th St | Woodbine | YES |

# Historical Resources

## Pottawattamie County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department




Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Township Line
Loess Hills Landform Region
National Register of Historic Places Site
Other Significant Historic Place Site

0 1.25 2.5 5 7.5 Miles

N W E S

# Loess Hills Scenic Byway Historical Resources

## Pottawattamie County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

| Property Name | Address | City | In National Register |
|---|---|---|---|
| Andersen Company Building | 619 S Main St | Council Bluffs | YES |
| Bennett Building | | Council Bluffs | YES |
| Beresheim, August, House | 621 3rd St | Council Bluffs | YES |
| Brown-Kelley Building | 519 S Main St | Council Bluffs | YES |
| Building | 531 S Main St | Council Bluffs | YES |
| Calvin, Thomas E., House | 150 Park Ave | Council Bluffs | YES |
| Carstens Farmstead | | Avoca | YES |
| Chevra B'nai Yesroel Synagogue | | Council Bluffs | YES |
| City Bakery | | Council Bluffs | YES |
| Clinton, Samuel, House | 133 Bluff St | Council Bluffs | YES |
| Commercial Building | 607 S Main St | Council Bluffs | YES |
| Creston House | 215 S Main St | Council Bluffs | YES |
| Culver Building | 504 S Main St | Council Bluffs | YES |
| Davidson Building | 513 S Main St | Council Bluffs | YES |
| Dodge, Grenville M., House | 605 S 3rd St | Council Bluffs | YES |
| Dodge, Ruth Anne, Memorial | Fairview Cemetery | Council Bluffs | NO |
| Eckle Round Barn | | Avoca | YES |
| Fairmont Pharmacy | | Council Bluffs | YES |
| Franksen Building | | Council Bluffs | YES |
| Gallagher Grocery | | Council Bluffs | YES |
| Graceland Cemetery Chapel | Highway 59 | Avoca | YES |
| Grahl-Peterson Building | 223 S Main St | Council Bluffs | YES |
| Hancock Savings Bank | 311 Main St | Hancock | YES |
| Harkett and Monfort Restaurant | | Council Bluffs | YES |
| Holst Paint Shop | | Council Bluffs | YES |
| Hughes, Martin, House | 903 3rd St | Council Bluffs | YES |
| Jarvis Building | 225 S Main St | Council Bluffs | YES |
| Jefferis, Thomas, House | 523 6th Ave | Council Bluffs | YES |
| Kerney Block | 231 S Main St | Council Bluffs | YES |
| Key Real Estate Company | 229 S Main St | Council Bluffs | YES |
| Kiel Hotel | 501 S Main St | Council Bluffs | YES |
| Mohn, Max, Building | 219 S Main St | Council Bluffs | YES |
| Mynster Building/Union Hall | | Council Bluffs | YES |
| Napravnik Boots and Shoes Store | | Council Bluffs | YES |
| Ogden House | | Council Bluffs | YES |
| Olsen Saloon | | Council Bluffs | YES |
| Parking Lot | 517 S Main St | Council Bluffs | YES |
| Peter-Plummer Building | 525 S Main St | Council Bluffs | YES |
| Phoenix Block | | Council Bluffs | YES |
| Pioneer Implement Company | | Council Bluffs | YES |
| Pottawattamie County Jail | 226 Pearl St | Council Bluffs | YES |
| Ritter Building | 213 S Main St | Council Bluffs | YES |
| Saint Peter's Church and Rectory | 1 Bluff St | Council Bluffs | YES |
| Scanlan Meat Market | | Council Bluffs | YES |
| Schott Building | 529 S Main St | Council Bluffs | YES |
| Shea, John J. and Agnes, House | 309 S 8th St | Council Bluffs | YES |
| South Omaha Bridge | US 275/NE 92 over the Missouri R. | Council Bluffs | NO |
| Spetman Building | 509 S Main St | Council Bluffs | YES |
| St. Joseph House | 621 S Main St | Council Bluffs | YES |
| St. Peter's Church and Rectory | 1 Bluff St. | Council Bluffs | NO |

# Loess Hills Scenic Byway Historical Resources

## Pottawattamie County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

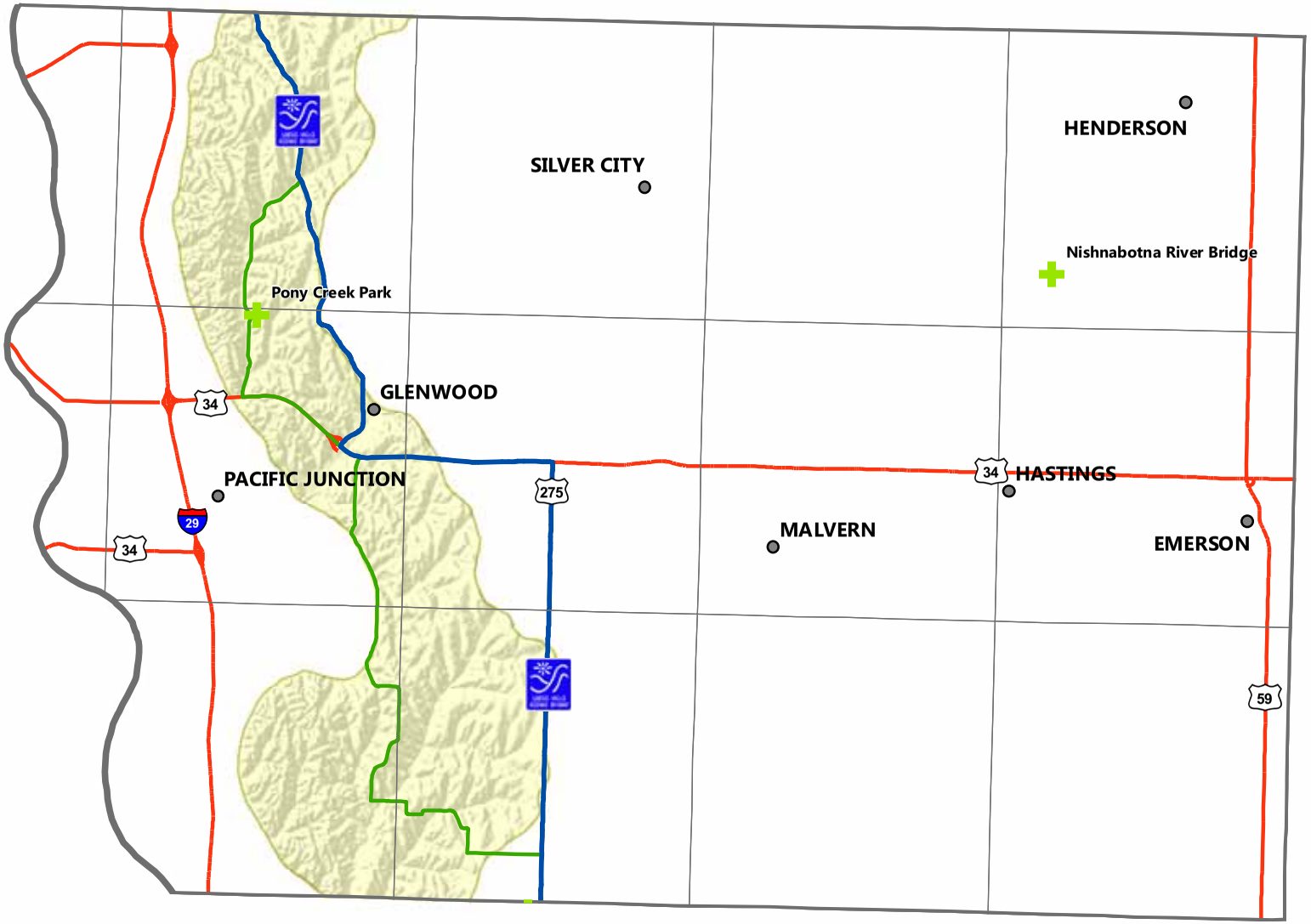
| Property Name | Address | City | In National Register |
|---|---|---|---|
| State Savings Bank | | Council Bluffs | YES |
| Straub Building | 221 S Main St | Council Bluffs | YES |
| Title Guaranty Building | 500 S Main St | Council Bluffs | YES |
| Tulleys, Lysander, House | 151 Park Ave | Council Bluffs | YES |
| Vavra Dry Goods | | Council Bluffs | YES |
| Walters Harness Shop | | Council Bluffs | YES |
| Warner and Company | | Council Bluffs | YES |
| White Bakery | 227 S Main St | Council Bluffs | YES |
| Wickham Building | 512 S Main St | Council Bluffs | YES |
| Wickham, O. P., House | 616 S 7th St | Council Bluffs | YES |
| Wickham-DeVol House | | Council Bluffs | YES |
| YMCA Building | 628 1st Ave | Council Bluffs | YES |

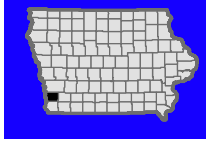
# Historical Resources

## Mills County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Township Line
Loess Hills Landform Region
National Register of Historic Places Site
Other Significant Historic Place Site

0 1 2 4 6 Miles

N W E S

# Loess Hills Scenic Byway Historical Resources

## Mills County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

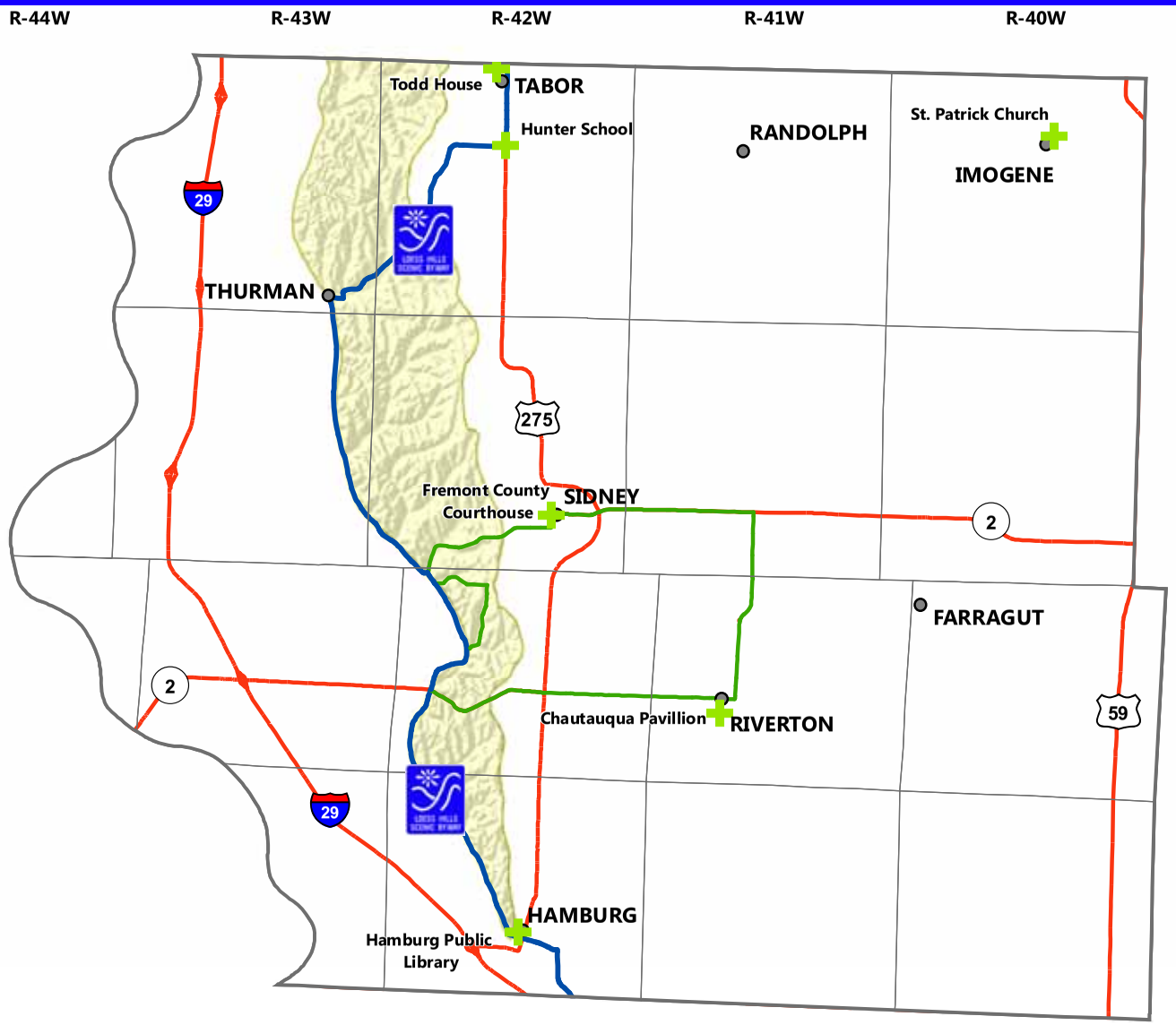
| Property Name | Address | City | In National Register |
|---|---|---|---|
| Nishnabotna River Brid | M16 | Henderson | YES |
| Pony Creek Park | | Glenwood | YES |

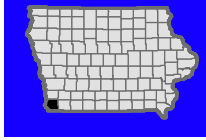
# Historical Resources

## Fremont County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Township Line
Loess Hills Landform Region
National Register of Historic Places Site
Other Significant Historic Place Site

0 1.25 2.5 5 7.5 Miles

N W E S

# Loess Hills Scenic Byway Historical Resources

## Fremont County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

| Property Name | Address | City | In National Register |
|---|---|---|---|
| Chautauqua Pavillion | | Riverton | YES |
| Fremont County Courthouse | Clay St | Sidney | YES |
| Hamburg Public Library | 1301 Main S | Hamburg | YES |
| Hunter School | Hwy 275 | Tabor | YES |
| St. Patrick Church | 3rd St | Imogene | YES |
| Todd House | Park St | Tabor | YES |

# Understanding the Cultural Quality

### *Definition of Cultural Quality*

Cultural quality is the evidence and expressions of the customs or traditions of a distinct group of people. Cultural features include, but not limited to, crafts, music, dance, rituals, festivals, speech, food, special events, vernacular architecture, etc., that are currently practiced. The cultural qualities of the corridor could highlight one or more significant communities and/or ethnic traditions (United States Government Federal Register 26761, 1995).

### *What do we know?*

Diversity and contrast characterize the cultural resources of Iowa's Loess Hills. The cultural heritage of the Scenic Byway Corridor has been strongly influenced by a mixture of customs and traditions passed on from the region's first inhabitants, Native Americans; pioneer settlers of German, Danish and Swedish descent; and Mormon immigrants. A predominately agricultural landscape dotted with small rural communities surrounds the cosmopolitan features and lifestyles in the thriving urban centers of Sioux City and Council Bluffs-Omaha. The unaltered natural settings and rustic outdoor facilities of the region's most remote areas are a short distance from modern and sophisticated art centers, museums, restaurants and hotels.

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The cultural quality of the Loess Hills Scenic Byway Corridor is a result of this surprising diversity and contrast as well as the number of cultural attractions and events. More than 60 attractions in the Scenic Byway Corridor highlight the region's many cultural resources. Among these cultural attractions are pioneer cemeteries, historic churches, old fashion soda fountains, antique shops, farmstead inns, museums, monuments and community theaters. Complimenting these are close to 50 cultural events that are held regularly in communities throughout the Scenic Byway Corridor. These events include farmers markets, rodeos, county fairs, farm festivals, heritage celebrations and art shows.

**Representative Cultural Resources of the Loess Hills Scenic Byway Corridor**

Places and events representative of the diverse cultural quality of the Scenic Byway Corridor include:

- The agricultural and rural flavor of the Loess Hills is best illustrated by such events as **Apple Fest** in Woodbine that coincides with, and celebrates the apple harvest; the **Sydney Championship Rodeo** that is held in Fremont County and attracts thousands of participants and spectators; and attractions including the **Moorhead Cultural Center** with displays and activities reflecting the people, history and culture of the Loess Hills, **Dunham Pioneer Stock Farm Barn** near Dunlap and **Carstens Memorial Farmstead** in Pottawattamie County that interpret and educate visitors about early agriculture and farm life in Iowa and the Midwest.

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Sidney Championship Rodeo, Sidney M. Whye

- Strong ethnic influences on present day customs and traditions of the people in the Scenic Byway Corridor can be traced to large immigrant settlements in western Iowa. Present day communities located in the heart of these settlements include the five **German Colonies** of Defiance, Earling, Panama, Portsmouth and Westphalia on the eastern edge of the Loess Hills. One of the largest rural Danish populations in the country is centered in Elk Horn and Kimballton, both communities also east of the Loess Hills. The **National Danish Immigrant Museum** is located in Elk Horn. The City of Stanton is in the center of a large area in southwest Iowa that was settled by Swedish immigrants. The **Swedish Heritage and Cultural Center** is located in Stanton.

- The contribution that people and events in history make to cultural quality of the Loess Hills Scenic Byway Corridor is illustrated by the **Loess Hills Indian Market and Cultural Exchange** in Missouri Valley, **Pow Wow Festival** in Council Bluffs and **War Eagle Monument** in Sioux City all celebrating the customs and traditions of Native American inhabitants of the region. The **Lewis and Clark Festival** in Onawa, **Kanesville Log Cabin Tabernacle** in Council Bluffs and the **Harrison County Historical Village** at the Welcome Center in Missouri Valley commemorate the lifestyles of the first pioneer explorers and settlers west of the Mississippi. The nation's first coast to coast roadway, the **Lincoln Highway**, travels through Harrison and Pottawattamie Counties in the Loess Hills and is a reminder of the social and economic changes that have taken place in America's more recent past.

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Kanesville Log Cabin Tabernacle, Council Bluffs M. Whye

- Contemporary attractions and events in the Scenic Byway Corridor also contribute to the region's cultural quality. These include the **Sioux City Art Center** and **ARTSPLASH** art festival and show; Onawa's annual **Onabike bicycle ride** through the Loess Hills; and the **resorts** and **casinos** in Council Bluffs, Sioux City, Onawa and Sloan.

### *What needs to be done?*

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Cultural events and attractions offer special opportunities for residents in the Loess Hills to share, and visitors to learn about and enjoy, local customs and traditions. The cultural quality of the Scenic Byway Corridor manifests itself in present day life in the cities, small communities, and rural areas of the Loess Hills. As such, visitors gain their appreciation for the culture of the Loess Hills through interaction the people who live there. In this sense, cultural resources in the Loess Hills have the potential to impact the experience of travelers in the Scenic Byway Corridor to a greater extent than any of the region's other intrinsic qualities. Specific actions included in the “Corridor Development Actions” section of the *Corridor Management Plan* will address the need to:

- Increase the public's enjoyment and understanding of, and improve their access to, resources that are a part of the cultural quality of the Loess Hills Scenic Byway Corridor; and
- Effectively promote existing, and develop new, attractions and events that contribute to the cultural quality of the Scenic Byway Corridor.

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# Understanding the Recreational Quality

### *Definition of Recreational Quality*

Recreational quality involves outdoor recreational activities directly associated with and dependent on the natural and cultural elements of the corridor's landscape. The recreational activities provide opportunities for active and passive recreational experiences. They can include, but are not limited to, skiing, rafting, boating, fishing and hiking. Driving the road itself may qualify as a pleasurable recreational experience. The recreational activities may be seasonal, but the quality and importance of the recreational activities as seasonal operations must be well recognized (United States Federal Register 26761, 1995).

### *What do we know?*

An abundance and variety of recreational resources are found in Iowa's Loess Hills. Recreational opportunities associated with the Scenic Byway are dependent in a large part on the scenic, natural, historic, cultural, and archeological intrinsic qualities, or resources, in the Corridor. The development and management of these resources provide travelers in the Scenic Byway Corridor access to outdoor recreational activities that include:

- Auto-touring
- Hiking
- Picnicking
- Wildlife-watching
- Bicycling
- Fishing
- Camping
- Hunting
- Snow skiing
- Snowmobiling
- Horseback riding

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Wabash Trace Nature Trail M. Whye

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In addition to the Loess Hills Scenic Byway itself, there are over 100 parks, recreation and wildlife areas, and outdoor recreation attractions that cover more than 57,000 acres in the Corridor. These recreational attractions are owned and maintained by federal, state and county agencies; local communities; nonprofit groups; and private businesses. Facilities provided by public and private entities at these attractions offer travelers an increasingly popular means of experiencing first-hand the Loess Hills through a variety of outdoor recreational activities. These parks, recreation areas and attractions can also provide effective long-term protection for many of the most unique resources of Loess Hills Scenic Byway Corridor.

Hitchcock Nature Area, Pottawattamie County D. Poggensee

**Representative Recreational Resources of the Loess Hills Scenic Byway Corridor**

There are specific recreational resources in, and adjacent to, the Loess Hills that are most representative of the intrinsic recreational quality of this region. Those resources that best depict the recreational quality of the Loess Hills Scenic Byway Corridor are:

- **State parks, forests, recreation and wildlife areas:** There are over 28,000 acres in more than three dozen state parks, forests, recreation and wildlife areas in the Scenic Byway Corridor. These include:
    - ◊ **Stone State Park**, Woodbury County;
    - ◊ **Lewis and Clark State Park**, Monona County;
    - ◊ **Preparation Canyon State Park** in Monona County;
    - ◊ **Loess Hills State Forest**, Harrison and Monona Counties;
    - ◊ **Loess Hills Wildlife Area**, Monona County;
    - ◊ **Wilson Island Recreation Area**, Harrison County;
    - ◊ **Lake Manawa State Park**, Pottawattamie County;
    - ◊ **Waubonsie-Wa-Shawtee State Park**, Fremont County;
    - ◊ **Forney Lake Wildlife Area**, Fremont County; and

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- ◊ **Riverton Wildlife Area**, Fremont County.

- **County parks, recreation and wildlife areas:** There are over 16,000 acres in more than 80 public areas owned and maintained by the seven counties in the Loess Hills Scenic Byway Corridor. These include:
  - ◊ **Hillview Recreation Area**, Plymouth County;
  - ◊ **Deer Creek Lake**, Plymouth County;
  - ◊ **Dorothy Pecaut Nature Center**, Woodbury County;
  - ◊ **Southwood Conservation Area**, Woodbury County;
  - ◊ **Whiting Woods**, Monona County;
  - ◊ **Rodney Pits Recreation Area**, Monona County;
  - ◊ **Gleason-Hubel Wildlife Area**, Harrison County;
  - ◊ **Murray Hill Scenic Overlook**, Harrison County;
  - ◊ **Willow Lake Recreation Area**, Harrison County;
  - ◊ **Hitchcock Nature Area**, Pottawattamie County;
  - ◊ **Arrowhead Park**, Pottawattamie County;
  - ◊ **Mile Hill Recreation Area**, Mills County;
  - ◊ **Pony Creek Park**, Mills County; and
  - ◊ **Pinky's Glen**, Fremont County.

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Willow Lake Recreation Area, Harrison County — Golden Hills

- **City parks and recreation areas:** Each of the 21 communities through which the Scenic Byway travels owns and maintains public recreation facilities. These include:
    - ◊ **Bacon Creek Park**, Sioux City;
    - ◊ **Sergeant Floyd Monument**, Sioux City;
    - ◊ **War Eagle Monument**, Sioux City;
    - ◊ **Fairmount Park**, Council Bluffs;
    - ◊ **Lewis and Clark Monument**, Council Bluffs; and
    - ◊ **Glenwood Lake Park**, Glenwood.

- **Private recreation and nature areas:** Nonprofit organizations and private businesses own and maintain recreation and natural areas in the Loess Hills Scenic Byway Corridor. These include:
    - ◊ **Broken Kettle Grassland**, Plymouth County;
    - ◊ **Sioux City Prairie**, Woodbury County;
    - ◊ **Crescent Area Ski Resort**, Pottawattamie County; and
    - ◊ **Wabash Trace Nature Trail**, beginning in Pottawattamie County and extending through Mills and Fremont Counties.

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Crescent Area Ski Resort M. Whye

- **DeSoto National Wildlife Refuge:** DeSoto National Wildlife Refuge in Harrison County is the only federally owned and maintained recreation and wildlife area in the Scenic Byway Corridor. The Refuge offers travelers a modern visitors' center which houses the Bertrand Steamboat Museum, self-guided auto-tour, nature trails, picnic areas, boating, fishing and hunting on its more than 9,800 acres.

### *What needs to be done?*

Travelers most frequently experience the scenic, natural, historic, cultural and archeological resources of the Loess Hills Scenic Byway Corridor through their participation in the many recreational activities offered in the region. That being the case, recreational resources associated with the Scenic Byway play an enormously important role in creating increased public awareness and understanding of the Corridor's unique intrinsic qualities. Specific actions included in the "Corridor Development Actions" section of the *Corridor Management Plan* address the need to:

- Improve, expand and maintain existing facilities in order to encourage and ensure public access to resources that are a part of the recreational quality of the Loess Hills Scenic Byway Corridor;
- Improve and increase interpretation and educational opportunities for travelers at recreational facilities in the Scenic Byway Corridor;
- Identify the demand for, and develop, additional public recreation facilities in the Corridor; and
- Increase and expand promotion of the wide range of recreational opportunities available in the Loess Hills Scenic Byway Corridor.

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## *Maps and Tables*

Recreational Resources - Map

Recreational Resources - Table

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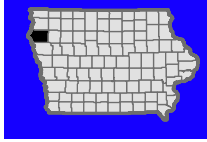
# Recreational Resources

## Plymouth County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Township Line
Recreation Areas
Loess Hills Landform Region

0 1.25 2.5 5 7.5 Miles

N W E S

# Loess Hills Scenic Byway Recreational Resources

## Plymouth County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

| Name | Acres | Info Center | Picnic | Electricity | Drinking Water | Restrooms | Playground | Tent Camping | Trailer Camping | Interpretation | Hiking | Biking | Equestrian | Boating | Swimming | Fishing | Hunting | Skiing | Undeveloped Area | Missouri River Access | Scenic Overlook | Owner |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Big Sioux County Park | 33 | | x | | | x | | x | x | | | | | x | | x | | | | | | County |
| Big Sioux River Corridor | 900 | | | | | | | | | | | | | | | x | x | | | | | County |
| Boyd's Bend | | | | | | | | | | | | | | | | | | | | | | |
| Broken Kettle Grassland | 1200 | | | | | | | | | | | | | | | | | | x | | x | TNC |
| Deer Creek | 1020 | | | | | | | | | | | | | | | x | x | | x | | | County |
| Five Ridge Prairie Preserve | 790 | | | | | | | | | | x | | | | | | | | x | | | State |
| Highland 75 Wetland | | | | | | | | | | | | | | | | | | | | | | |
| Hillview Recreatio n Area | 250 | | x | x | x | x | x | x | x | x | x | | x | | x | x | x | | x | | | County |
| Knapp Prairie | 25 | | | | | | | | | | x | | | | | | | | | | | TNC |
| Meadow Wildlife Area | 5 | | | | | | | | | | | | | | | x | x | | | | | County |
| Millsite Access | 16 | | | | | | x | | | | | | | | x | x | x | | | x | | County |
| Mount Talbot State Preserve | | | | | | | | | | | | | | | | | | | | | | |

# Loess Hills Scenic Byway Recreational Resources

## Plymouth County, IA

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Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

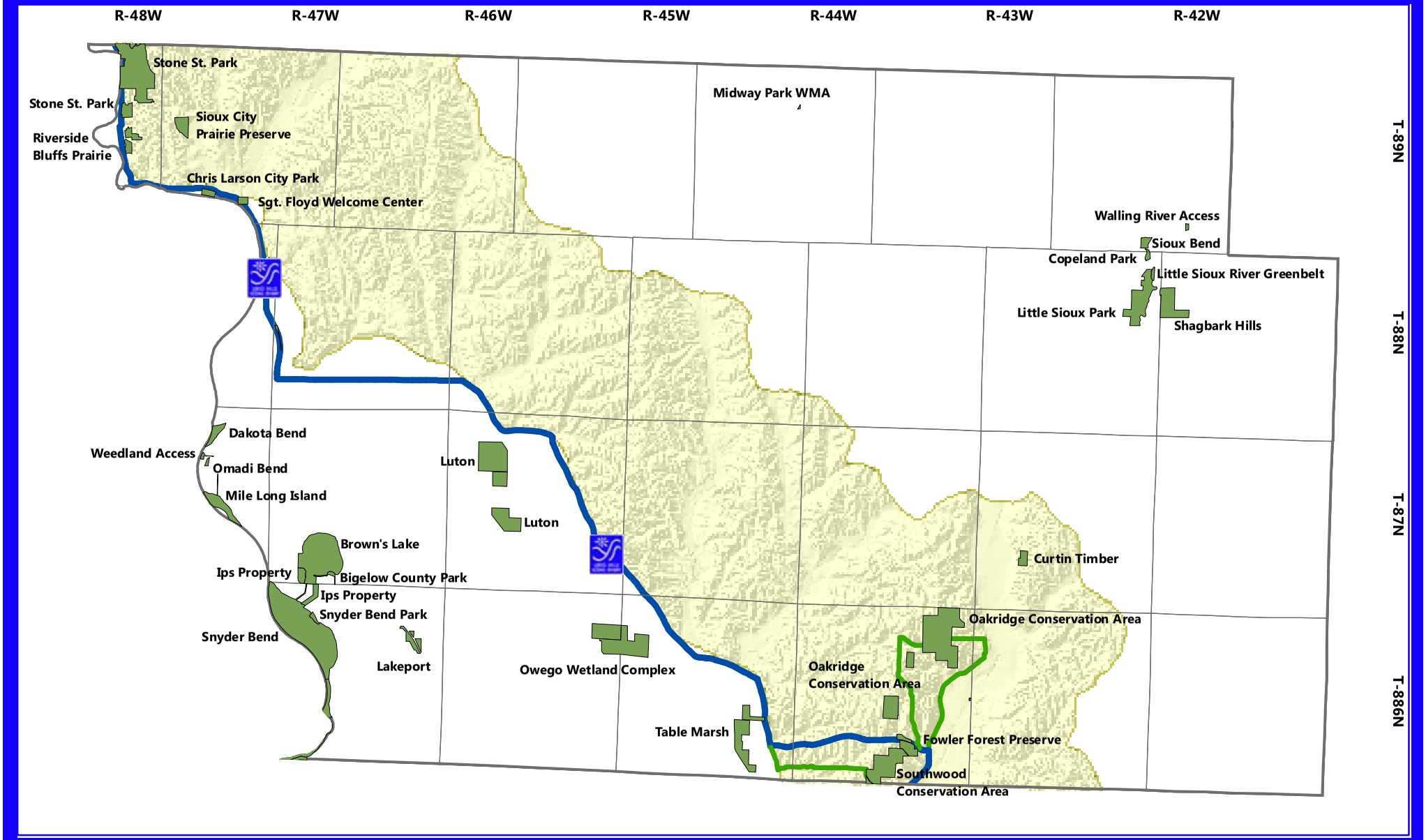
| Name | Acres | Info Center | Picnic | Electricity | Drinking Water | Restrooms | Playground | Tent Camping | Trailer Camping | Interpretation | Hiking | Biking | Equestrian | Boating | Swimming | Fishing | Hunting | Skiing | Undeveloped Area | Missouri River Access | Scenic Overlook | Owner |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| O'Brien Prairie | 40 | | | | | | | | | | | | | | | | x | | x | | | County |
| Oyens Shooting Range | | | | | | | | | | | | | | | | | | | | | | |
| Silver Maple Primitive Area | 60 | | | | | | | | | | | | | | | x | x | | | | | County |
| Southeast Wildwood Park | 36 | | | | | | | x | x | | | | | | | | | | | | | County |
| Tracy Tracts | | | | | | | | | | | | | | | | | | | | | | |
| WRP | 30 | | | x | | | | | | x | x | | | | | x | | | x | | | City |

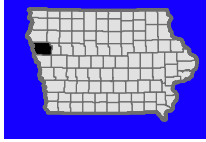
# Recreational Resources

## Woodbury County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Township Line
Recreation Areas
Loess Hills Landform Region

0 1.25 2.5 5 7.5 Miles

N W E S

# Loess Hills Scenic Byway Recreational Resources

## Woodbury County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

| Name | Acres | Info Center | Picnic | Electricity | Drinking Water | Restrooms | Playground | Tent Camping | Trailer Camping | Interpretation | Hiking | Biking | Equestrian | Boating | Swimming | Fishing | Hunting | Skiing | Undeveloped Area | Missouri River Access | Scenic Overlook | Owner |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bigelow County Park | 24 | | x | x | x | x | x | x | x | | x | | | x | x | x | | | x | | | County |
| Browns Lake | 1311 | | | | | | | | | | | | | | | x | x | | x | | | State |
| Chris Larson City Park | | | | | | | | | | | | | | | | | | | | | | City |
| Copeland Park | 0 | | | | | | x | | | | | | | | | x | | | | | | County |
| Curtin Timber | 90 | | | | | | | | | | | | | | | | x | | x | | | County |
| Dakota Bend | 109 | | | | | | | | | | | | | | | | x | | x | | | County |
| Fowler Forest Preserve | 108 | | x | x | x | x | x | | | | x | | | | | | | | | | | County |
| Ips Property | | | | | | | | | | | | | | | | | | | | | | |
| Lakeport | 121 | | | | | | | | | | | | | | | | x | | | | | County |
| Little Sioux Park | 375 | | x | x | x | x | x | x | x | | x | | | x | x | x | x | | | | | County |
| Little Sioux River Greenbelt | 25 | | | | | | | | | | | | | | | x | x | | x | | | County |
| Luton | | | | | | | | | | | | | | | | | | | | | | |

# Loess Hills Scenic Byway Recreational Resources

## Woodbury County, IA

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Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

| Name | Acres | Info Center | Picnic | Electricity | Drinking Water | Restrooms | Playground | Tent Camping | Trailer Camping | Interpretation | Hiking | Biking | Equestrian | Boating | Swimming | Fishing | Hunting | Skiing | Undeveloped Area | Missouri River Access | Scenic Overlook | Owner |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Midway Park WMA | 20 | | x | | | x | | | | | | | | | | x | | | | | | County |
| Mile Long Island | | | | | | | | | | | | | | | | | x | | | | | State |
| Oakridge Conservati on Area | 765 | | | | | | | | | | | | | | | x | x | | x | x | | County |
| Omadi Bend | | | | | | | | | | | | | | | | | | | | | | |
| Owego Wetland Complex | | | | | | | | | | | | | | | | | | | | | | |
| Riverside Bluffs Prairie | 135 | | | | | | | | | | x | | | | | | | | x | | | County |
| Sgt. Floyd Welcome Center | 1 | x | | | | x | | | | x | | | | | | | | | | | | City |
| Shagbark Hills | 379 | | | | | | | | | | x | | x | | | | x | | x | | | County |
| Sioux Bend | 64 | | | | | | | | | | | | | | | x | x | | x | | | County |
| Sioux City Prairie Preserve | 151 | | | | | | | | | | x | | | | | | | | x | | | County |
| Snyder Bend | 2865 | | | | | | | | | | | | | | | x | x | | x | x | | County |
| Snyder Bend Park | 35 | | x | x | x | x | x | x | x | | x | | | x | | x | | | | | x | County |

# Loess Hills Scenic Byway Recreational Resources

## Woodbury County, IA

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Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

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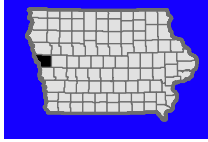
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Southwood Conservation Area | 623 | | x | x | x | x | | x | x | x | x | | x | | | x | x | | x | | | County |
| Stone State Park | 1085 | x | x | x | x | x | | x | x | x | x | | x | | | x | | | x | | x | County |
| Table Marsh | | | | | | | | | | | | | | | | | | | | | | |
| Walling River Access | 13 | | | | | | | | | | | | | x | | x | x | | | | | County |
| Weedland Access | 15 | | | | | x | | | | | | | | | | x | | | x | x | | County |

# Recreational Resources

## Monona County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Township Line
Recreation Areas
Loess Hills Landform Region

0 1.25 2.5 5 7.5 Miles

N W E S

# Loess Hills Scenic Byway Recreational Resources

## Monona County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

| Name | Acres | Info Center | Picnic | Electricity | Drinking Water | Restrooms | Playground | Tent Camping | Trailer Camping | Interpretation | Hiking | Biking | Equestrian | Boating | Swimming | Fishing | Hunting | Skiing | Undeveloped Area | Missouri River Access | Scenic Overlook | Owner |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Badger Lake | 987 | | | | | | | | | | | | | | | | x | | | | | County |
| Beaver Run | 65 | | | | | | | | | | | | | | | | x | | | | | |
| Blackbird Bend | 1022 | | | | | | | | | | | | | | | | | | x | | | Federal |
| Blue Lake | 250 | | | | | | | | | | | | | x | x | x | | | | | | County |
| Davis Wetland | 54 | | | | | | | | | | | | | | | | | | x | | | |
| Gray's Landing | 43 | | | | | | | | | | | | | | | x | x | | | | | County |
| Huff-Warner Access | 6 | | | x | x | x | | x | x | | | | | | | | | | | x | | County |
| I-29 WMA | | | | | | | | | | | | | | | | | | | | | | |
| Ivy Island | 722 | | | | | | | | | | | | | x | | | | | | | | |
| Johnston | | | | | | | | | | | | | | | | | | | | | | |
| Lewis & Clark State Park | 176 | x | x | x | x | x | | x | x | x | x | x | | x | x | x | | | | | | State |
| Loess Hills State Forest | 11000 | | | | | | | x | x | | | | | | | x | x | | | | | State |

# Loess Hills Scenic Byway Recreational Resources

**Monona County, IA**

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

| Name | Acres | Info Center | Picnic | Electricity | Drinking Water | Restrooms | Playground | Tent Camping | Trailer Camping | Interpretation | Hiking | Biking | Equestrian | Boating | Swimming | Fishing | Hunting | Skiing | Undeveloped Area | Missouri River Access | Scenic Overlook | Owner |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Loess Hills Wildlife Area | 3896 | | | | | | | | | | x | | | | | | | | x | | | |
| Louisville Bend | 904 | | | | | | | | | | | | | | | | x | | | | | County |
| Lower Blencoe Bend | 70 | | | | | | | | | | | | | x | | | x | | | | | |
| Master's Prairie Trail | | | | | | | | | | | | | | | | | | | | | | |
| McDonald's | | | | | | | | | | | | | | | | | | | | | | |
| Middle Decatur Bend | 5 | | | | x | x | | x | | | | | | x | | x | | | | | | County |
| Middle Decatur Bend Wildlife | 338 | | | | | | | | | | | | | | | | | | x | | | County |
| Mission Bend | | | | | | | | | | | | | | | | | | | | | | |
| Oldham Recreation Area | 13 | | x | x | | x | | x | x | | | | | x | x | x | | | | | | County |
| Omaha Mission Bend | | | | | | | | | | | | | | | | | | | | | | |
| Pawnee Recreation Area | | | | | | | | | | | | | | | | | | | | | | |
| Peter's Park | | | | | | | | | | | | | | | | | | | | | | |

# Loess Hills Scenic Byway Recreational Resources

## Monona County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

| Name | Acres | Info Center | Picnic | Electricity | Drinking Water | Restrooms | Playground | Tent Camping | Trailer Camping | Interpretation | Hiking | Biking | Equestrian | Boating | Swimming | Fishing | Hunting | Skiing | Undeveloped Area | Missouri River Access | Scenic Overlook | Owner |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Plum Thicket | 4 | | | | | | | | | | | | | | | | | | x | | | County |
| Preparation Canyon State Park | 344 | | | | | | | | x | | | | | | | | | | | | | State |
| Schoenjahn Wildlife Preserve | 113 | | | | | | | | | | | | | | | | | | x | | | County |
| Sylvan Runkle State Preserve | | | | | | | | | | | | | | | | | | | | | | State |
| Tieville Bend | 3081 | | | | | | | | | | | | | | | | | | x | | | Federal |
| Turin Loess Hills State Preserve | | | | | | | | | | | | | | | | | | | | | | State |
| Turin Pres. | | | | | | | | | | | | | | | | | | | | | | State |
| Upper Blencoe Bend | 94 | | | | | | | | | | | | | x | | | | | x | | | County |
| Upper Decatur Bend | 534 | | | | | | | | | | | | | | | | | | x | | | |
| Upper Monona Bend | | | | | | | | | | | | | | | | | | | | | | County |
| Whiting Woods | | | | | | | | | | | | | | | | | | | | | | County |
| Whiting Woods | 80 | | x | | x | x | | | | | x | | | | | | | | | | | County |

# Loess Hills Scenic Byway Recreational Resources

## Monona County, IA

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Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

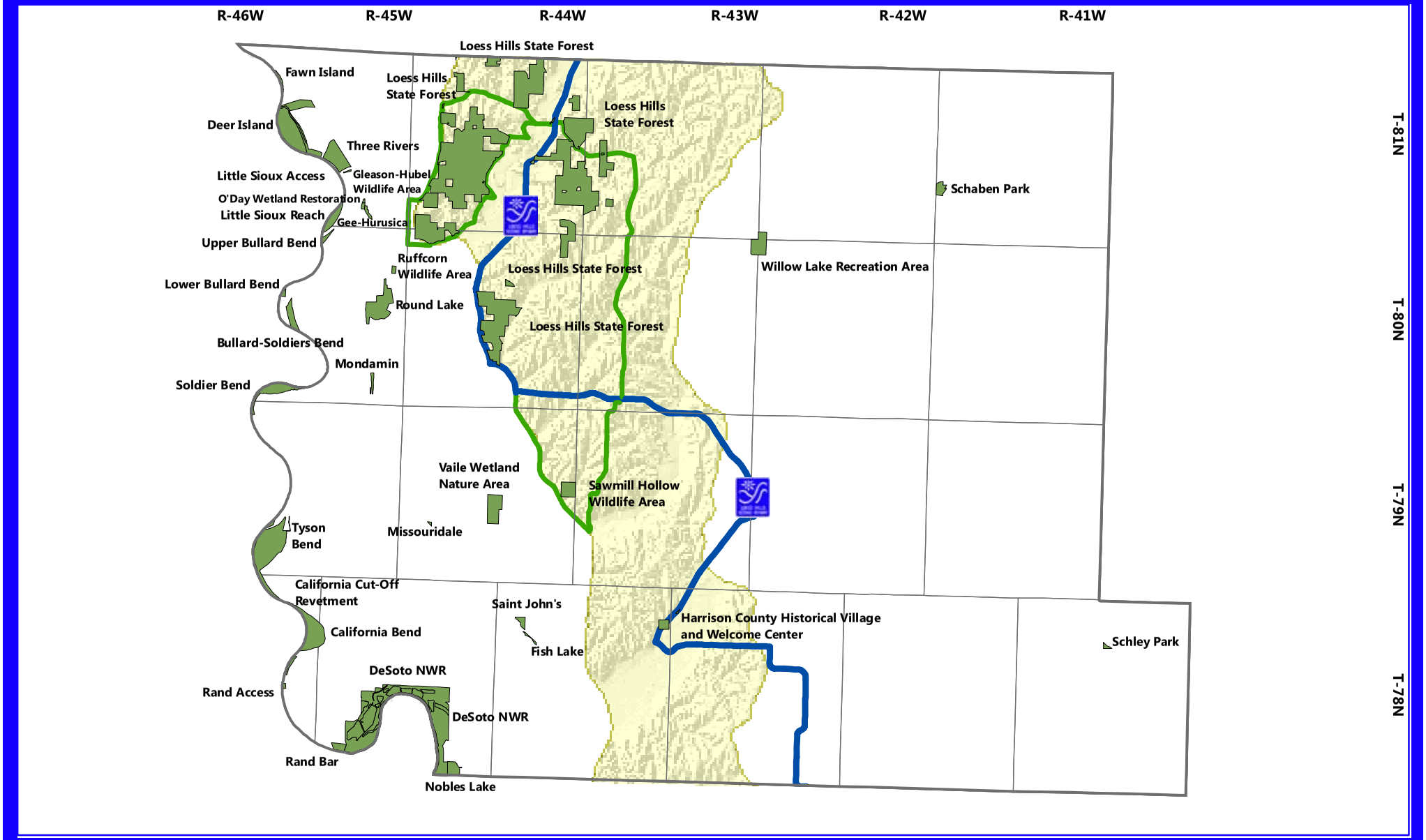
| Name | Acres | Info Center | Picnic | Electricity | Drinking Water | Restrooms | Playground | Tent Camping | Trailer Camping | Interpretation | Hiking | Biking | Equestrian | Boating | Swimming | Fishing | Hunting | Skiing | Undeveloped Area | Missouri River Access | Scenic Overlook | Owner |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Winnebago Bend | 1300 | | | | | | | | | | | | | | | | | | x | | | Federal |

# Recreational Resources

## Harrison County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



# Loess Hills Scenic Byway Recreational Resources

## Harrison County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

| Name | Acres | Info Center | Picnic | Electricity | Drinking Water | Restrooms | Playground | Tent Camping | Trailer Camping | Interpretation | Hiking | Biking | Equestrian | Boating | Swimming | Fishing | Hunting | Skiing | Undeveloped Area | Missouri River Access | Scenic Overlook | Owner |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bullard-Soldiers Bend | | | | | | | | | | | | | | | | | | | | | | |
| California Bend | 420 | | | | | | | | | | | | | | | | x | | | | | State |
| California Cut-Off Revetment | | | | | | | | | | | | | | | | | | | | | | |
| Deer Island | 710 | | | | | | | | | | | | | x | | x | x | | x | | | State |
| DeSoto NWR | 9823 | x | x | | x | x | | | | x | x | | | x | | x | x | | x | | | Federal |
| Fawn Island | | | | | | | | | | | | | | | | | | | | | | |
| Fish Lake | 19 | | | | | | | | | | | | | | | x | x | | x | | | County |
| Gee-Hurusica | | | | | | | | | | | | | | | | | | | | | | |
| Gleason-Hubel Wildlife Area | 165 | | | | | | | | | | x | | | | | | x | | x | | | County |
| Harrison County Historical Village | 3 | x | x | | x | x | | | | x | x | | | | | | | | | | | County |
| Little Sioux Access | | | | | | | | | | | | | | | | | | | | | | |
| Little Sioux Reach | 15 | | x | x | x | x | | x | x | | | | | x | | x | | | | | | County |

# Loess Hills Scenic Byway Recreational Resources

**Harrison County, IA**

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

| Name | Acres | Info Center | Picnic | Electricity | Drinking Water | Restrooms | Playground | Tent Camping | Trailer Camping | Interpretation | Hiking | Biking | Equestrian | Boating | Swimming | Fishing | Hunting | Skiing | Undeveloped Area | Missouri River Access | Scenic Overlook | Owner |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Loess Hills State Forest | 7800 | x | | | | | | | | x | | | | | | x | x | | x | | x | State |
| Lower Bullard Bend | | | | | | | | | | | | | | | | | | | | | | |
| Missouri-Dale Wildlife Area | 9 | | | | | | | | | | | | | | | | x | | x | | | County |
| Mondamin | 38 | | | | | | | | | | | | | | | | x | | x | | | County |
| Nobles Lake | 232 | | | | | | | | | | | | | x | | | x | | | | | State |
| O'Day Wetland Restoration | 15 | | | | | | | | | | x | | | | | | x | | | | | County |
| Rand Access | 6 | | | | | | | | | | | | | x | | x | | | | | | State |
| Rand Bar | | | | | | | | | | | | | | | | | | | | | | |
| Round Lake | 447 | | | | | | | | | | | | | x | | | x | | | | | State |
| Ruffcorn Wiildlife Area | | | | | | | | | | | | | | | | | | | | | | |
| Saint John's | 87 | | | | | | | | | | | | | | | | x | | | | | State |
| Sawmill Hollow Wildlife Area | 155 | | | | | | | | | | x | | | x | | x | x | | x | | x | County |

# Loess Hills Scenic Byway Recreational Resources

## Harrison County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

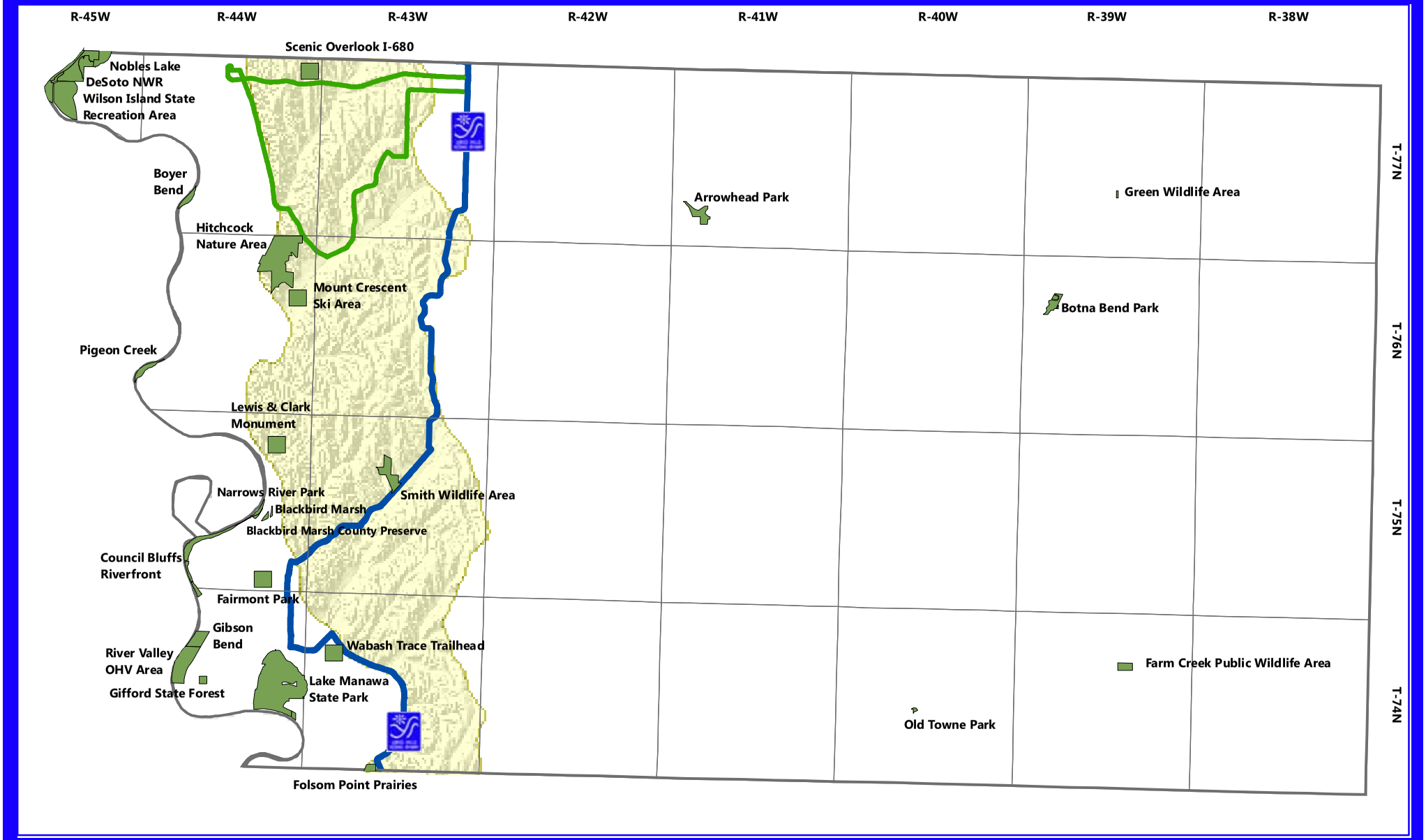
| Name | Acres | Info Center | Picnic | Electricity | Drinking Water | Restrooms | Playground | Tent Camping | Trailer Camping | Interpretation | Hiking | Biking | Equestrian | Boating | Swimming | Fishing | Hunting | Skiing | Undeveloped Area | Missouri River Access | Scenic Overlook | Owner |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Schaben Park | 77 | | x | x | x | x | | x | x | | x | | | x | | x | x | | x | | | County |
| Schley Park | 16 | | x | | x | x | | | | | | | | x | | x | | | | | | County |
| Soldier Bend | 279 | | | | | | | | | | | | | | | | x | | | | | State |
| Three Rivers | 300 | | | | | | | | | | | | | | | | x | | | x | | County |
| Three Rivers | 300 | | | | | | | | | | | | | x | | x | x | | | x | | County |
| Tyson Bend | 780 | | | | | | | | | | | | | x | | x | x | | x | | | State |
| Upper Bullard Bend | | | | | | | | | | | | | | | | | | | | | | |
| Vaile Wetland Nature Area | | | | | | | | | | | | | | | | | | | | | | |
| Willow Lake Recreation Area | 220 | x | x | x | x | x | x | x | x | x | x | | | x | x | x | x | | x | | | County |

# Recreational Resources

## Pottawattamie County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department




Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Township Line
Recreation Areas
Loess Hills Landform Region

0 1.25 2.5 5 7.5 Miles

N
W E
S

# Loess Hills Scenic Byway Recreational Resources

**Pottawattamie County, IA**

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

| Name | Acres | Info Center | Picnic | Electricity | Drinking Water | Restrooms | Playground | Tent Camping | Trailer Camping | Interpretation | Hiking | Biking | Equestrian | Boating | Swimming | Fishing | Hunting | Skiing | Undeveloped Area | Missouri River Access | Scenic Overlook | Owner |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arrowhead Park | 147 | | x | x | x | x | x | x | x | | x | | | x | | x | | | | | | County |
| Blackbird Marsh | 14 | | | | | | | | | | x | | | | | | | | | | | County |
| Blackbird Marsh County Preserve | | | | | | | | | | | | | | | | | | | | | | County |
| Botna Bend Park | 119 | | x | x | x | x | x | x | x | | | | | | | x | | | | | | County |
| Boyer Bend | | | | | | | | | | | | | | | | | | | | | | |
| Council Bluffs Riverfront | | | | | | | | | | | | | | | | | | | | | | City |
| DeSoto NWR | | | | | | | | | | | | | | | | | | | | | | |
| Fairmont Park | 80 | | x | | x | x | x | | | | x | | | x | | | | | | | x | City |
| Farm Creek Public Wildlife | 80 | | | | | | | | | | | | | | | x | x | | | | | County |
| Folsom Point Prairies | 281 | | | | | | | | | | x | | | | | | | | | | | TNC |
| Gibson Bend | | | | | | | | | | | | | | | | | | | | | | |
| Gifford State ?Forest | 40 | | | | | | | | | | | | | | | | | | x | | | State |

# Loess Hills Scenic Byway Recreational Resources

**Pottawattamie County, IA**

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

| Name | Acres | Info Center | Picnic | Electricity | Drinking Water | Restrooms | Playground | Tent Camping | Trailer Camping | Interpretation | Hiking | Biking | Equestrian | Boating | Swimming | Fishing | Hunting | Skiing | Undeveloped Area | Missouri River Access | Scenic Overlook | Owner |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Green Wildlife Area | 10 | | | | | | | | | | | | | x | | | x | | | | | County |
| Hitchcock Nature Area | 732 | x | x | x | x | x | | x | x | x | x | | | | | | x | | x | | x | County |
| Lake Manawa State Park | 1529 | | x | x | x | x | x | x | x | x | x | | | x | | x | x | | | | | State |
| Lewis & Clark Monumen t | 40 | x | x | | | | | | | | x | | | | | | | | | | x | City |
| Mount Crescent Ski Area | | | | x | x | x | | | | | | | | | | | | x | | | | Private |
| Narrows River Park | 36 | | x | x | x | x | | | | x | x | x | | x | | x | x | | x | x | | County |
| Nobles Lake | 230 | | | | | | | | | | x | | | x | | x | x | | x | | | State |
| Old Towne Park | 8 | | | | | x | | x | x | | | | | | | x | | | | | | County |
| Pigeon Creek | | | | | | | | | | | | | | | | | | | | | | |
| River Valley OHV Area | 200 | | | | | | | | | | | | | | | | | | | | | Private |
| Scenic Overlook I-680 | | | | | | x | | | | | x | | | | | | | | | | x | State |
| Smith Wildlife Area | 2160 | | | | | | | | | | x | | | | | | | | | | | State |

# Loess Hills Scenic Byway Recreational Resources

**Pottawattamie County, IA**

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Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

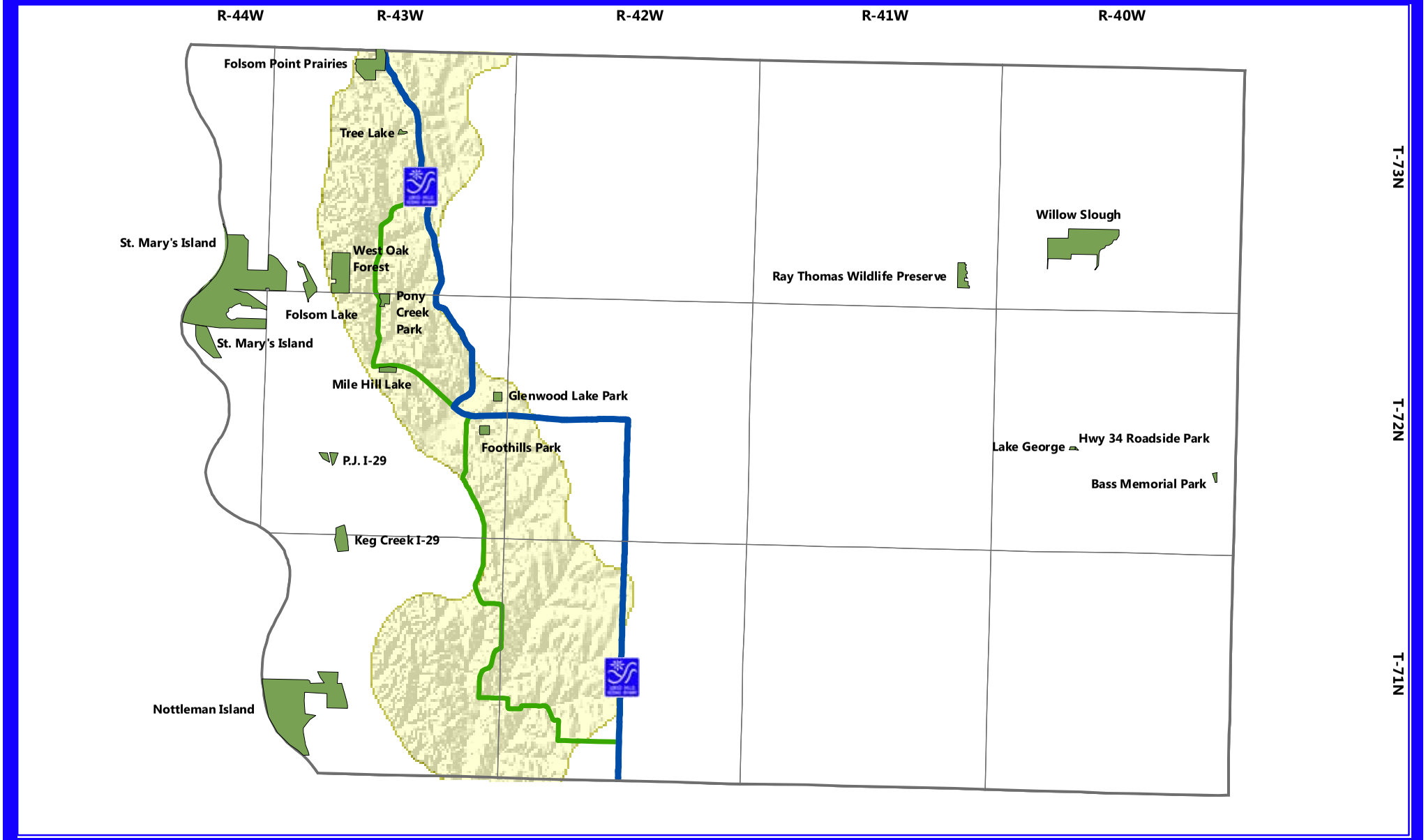
| Name | Acres | Info Center | Picnic | Electricity | Drinking Water | Restrooms | Playground | Tent Camping | Trailer Camping | Interpretation | Hiking | Biking | Equestrian | Boating | Swimming | Fishing | Hunting | Skiing | Undeveloped Area | Missouri River Access | Scenic Overlook | Owner |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Wabash Trace Trailhead | | | x | | x | x | | | | | x | x | x | | | | | | | | | Private |
| Wilson Island State Recreatio | 577 | | | x | | | | x | x | | x | | | x | | x | x | | | | | State |

# Recreational Resources

## Mills County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department




Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Township Line
Recreation Areas
Loess Hills Landform Region

0 1 2 4 6 Miles

N W E S

# Loess Hills Scenic Byway Recreational Resources

## Mills County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

| Name | Acres | Info Center | Picnic | Electricity | Drinking Water | Restrooms | Playground | Tent Camping | Trailer Camping | Interpretation | Hiking | Biking | Equestrian | Boating | Swimming | Fishing | Hunting | Skiing | Undeveloped Area | Missouri River Access | Scenic Overlook | Owner |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bass Memorial Park | 9 | | x | | x | x | | | | | | | | | | | | | | | | County |
| Folsom Lake | | | | | | | | | | | | | | | | | | | | | | |
| Folsom Point Prairies | 100 | | | | | | | | | | | | | | | | x | | | | | State |
| Foothill Park | 45 | | x | | | x | | | | | | x | | | | | | | | | | State |
| Glenwood Lake Park | 12 | | x | x | x | x | x | x | x | | x | | | | | x | | | | | | City |
| Hwy 34 Roadside Park | 1 | | x | | | x | | | | | | | | | | | | | | | | County |
| Keg Creek I-29 | 104 | | | | | | | | | | | | | | | | x | | | | | State |
| Lake George | 7 | | | | | | | | | | | | | | | | | | | | | County |
| Mile Hill Lake | 47 | | | | | | | | | x | x | | | | | x | x | | | | x | County |
| Nottleman Island | 1232 | | | | | | | | | | | | | | | | | | x | | | Federal |
| P.J. I-29 | 34 | | | | | | | | | | | | | | | | x | | | | | State |
| Pony Creek Park | 50 | | x | x | x | x | | x | x | | x | | | | | x | | | | | | County |

# Loess Hills Scenic Byway Recreational Resources

## Mills County, IA

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ray Thomas Wildlife reserve | 90 | | | | | | | | | | | | | | | | | | | | | County |
| St. Mary's Island | 1324 | | | | | | | | | | | | | | | | | | x | | | Federal |
| Tree Lake | 9 | | | | x | x | | | | | | | | | | x | x | | | | | County |
| West Oak Forest | 308 | | | | x | | | | | | x | | | | | | | | x | | | County |
| Willow Slough | 597 | | | | | | | | | | | | | | | | x | | | | | County |

# Recreational Resources

## Fremont County, IA

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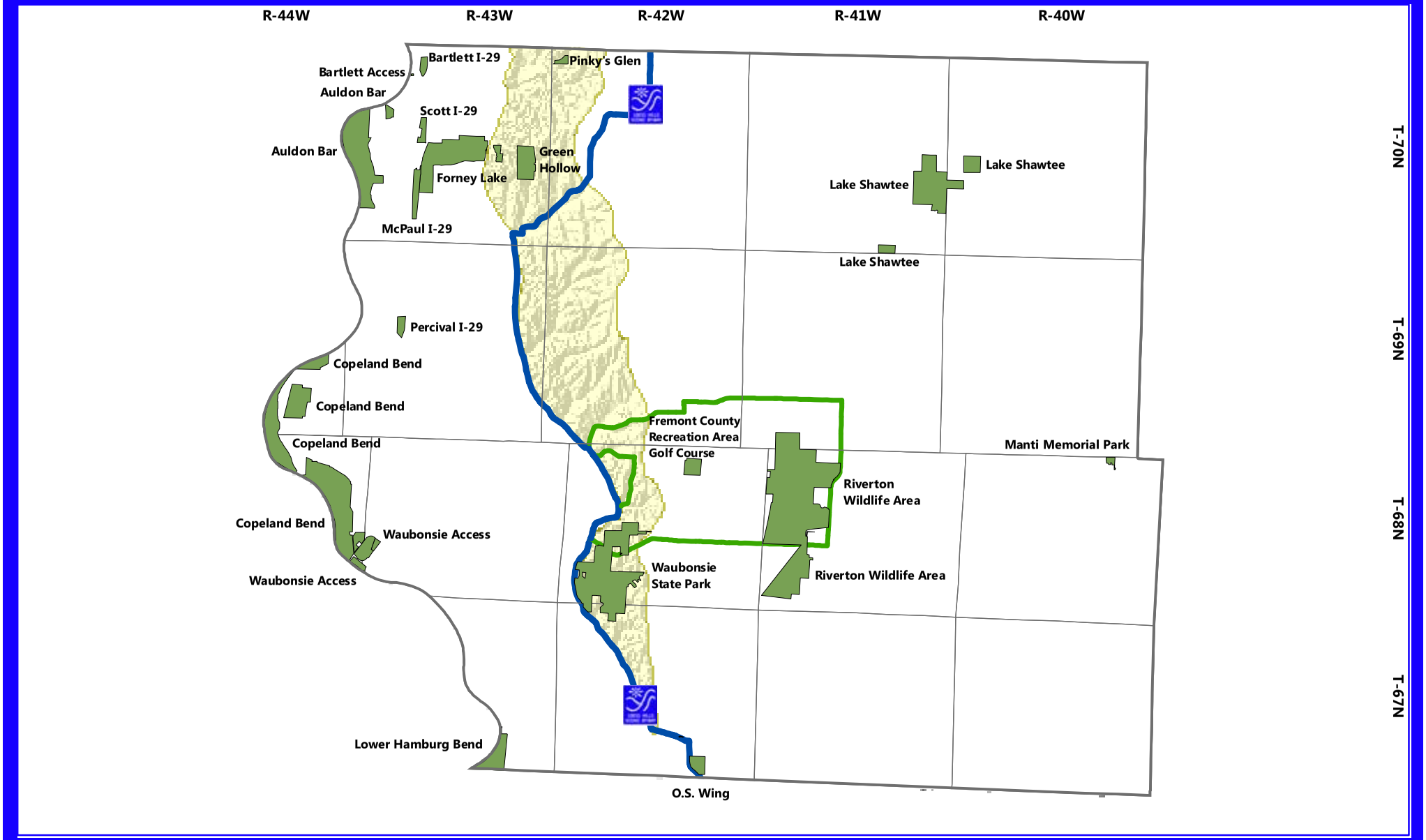
Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



# Loess Hills Scenic Byway Recreational Resources

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Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Auldon Bar | 588 | | | | | | | | | | | | | | | | | | x | | | Federal |
| Bartlett Access | 2 | | | | | | | | | | | | | x | | x | | | | x | | State |
| Bartlett -I29 | 57 | | | | | | | | | | | | | | | | x | | | | | State |
| Copeland Bend | 469 | | | | | | | | | | | | | | | | x | | | | | State |
| Forney Lake | 1128 | | | | | | | | | | | | | | | | x | | | | | State |
| Fremont County Recreatio n Area | 150 | | | x | x | x | | | | | | | | | | | | | | | | County |
| Green Hollow | 341 | | | | | | | | | | | | | | | | x | | | | | State |
| Lake Shawtee | 680 | | | | | | | | | | | | | | | | x | | | | | State |
| Lower Hamburg Bend | 2586 | | | | | | | | | | | | | | x | x | | | x | | | Federal |
| Manti Memorial Park | 12 | | x | | x | x | | x | | | x | | | | | | | | | | | County |
| McPaul/I2 9 | 166 | | | | | | | | | | | | | | | x | x | | | | | State |
| Percival/I 29 | 80 | | | | | | | | | | | | | | | x | x | | | | x | State |

# Loess Hills Scenic Byway Recreational Resources

**Fremont County, IA**

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| Name | Acres | Info Center | Picnic | Electricity | Drinking Water | Restrooms | Playground | Tent Camping | Trailer Camping | Interpretation | Hiking | Biking | Equestrian | Boating | Swimming | Fishing | Hunting | Skiing | Undeveloped Area | Missouri River Access | Scenic Overlook | Owner |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Pinky's Glen | 48 | | x | | | | | x | | | | | | | | x | | | | | | County |
| Riverton Wildlife Area | 2700 | | | | | | | x | | | | | | x | | x | x | | x | | x | State |
| Scott I-29 | 80 | | | | | | | | | | | | | | | x | x | | | | | State |
| Waubonsie Access | 53 | | | | | | | | | | | | | x | | x | x | | | x | | State |
| Waubonsie State Park | 1228 | x | x | x | x | x | x | x | x | x | x | x | x | | | | | | | | x | State |

# Understanding Human Quality

### *Definition of human quality*

As the work of preparing the Loess Hills Scenic Byway *Corridor Management Plan* proceeded a seventh intrinsic quality became apparent: the human quality. Some might refer to it as “social capital” - the collective ability of people living in communities to devise and implement effective strategies to deal with local problems and opportunities.

This human intrinsic quality is reflected through the attitudes and actions of residents, private organizations and public agencies. Indeed, the human quality goes far beyond local pride and is manifested in actions that will have long lasting effects on the intrinsic qualities of the Loess Hills. In preparing this *Corridor Management Plan*, numerous examples were discovered of how people acting in positive ways for the good of their communities embraced the concepts of Scenic Byway Corridor management.

### *What do we know?*

The Loess Hills are influenced as much by human actions as by natural processes (Mutel 174, 1989). Today, as in the past, many residents of the Loess Hills derive their living from the land. Farm fields, orchards, pastures, quarries and real estate development are evidence of this dependence on resources in the Loess Hills. As one looks across the landscape of Iowa's Loess Hills there are visible signs of human activities that have had both negative and positive impacts on these resources.

**THE LOESS HILLS OF IOWA**
*An American Treasure Unique in the World*

Humans can live in, and use the resources of, the Loess Hills without impacting in a negative manner the region's intrinsic qualities. For this to happen, residents and public officials must be encouraged to preserve and manage wisely the resources they own and control. Many people in the Loess Hills recognize the value of the region's resources. A growing number of residents are aggressively seeking to raise public awareness of the need to protect, enhance and properly manage these resources.

**Demographics in the Loess Hills Scenic Byway Corridor**

Information about population in the seven counties in the Loess Hills can help to understand the impacts that human activities have on intrinsic qualities in the Scenic Byway Corridor. According to US Census Bureau data, between 1970 and 1990 (Loess Hills Landscape Resource Study 11, 1994):

- County-wide population in all of the Loess Hills counties, except Mills, declined from 4% to 20%;
- The two major urban areas in the Loess Hills, Sioux City and Council Bluffs, also declined in population. Declines were 7% for Sioux City and 13% for Council Bluffs;
- Population increased from 6% to 25% in the rural Loess Hills areas of four counties (Plymouth, Woodbury, Pottawattamie, and Mills); and
- Rural Loess Hills areas of Harrison and Fremont Counties had population losses equal to, or less than, the average county-wide loss. Only Monona County lost more population in the rural Loess Hills areas than the average county-wide loss.

Recent population estimates from the US Census Bureau for the seven Loess Hills counties indicate that:

- The trend of declining county-wide population in four of the seven counties in the Loess Hills has reversed. Population for each county as of July 1, 2006, with the percentage change since 2000, are as follows:

| County | 2000 Population | Percent Change |
|---|---|---|
| Plymouth | 24,906 | + 0.2% |
| Woodbury | 102,972 | - 0.9% |
| Harrison | 15,745 | + 0.5% |
| Monona | 9,343 | - 6.8% |
| Pottawattamie | 90,218 | + 2.8% |
| Mills | 15,595 | + 7.2% |
| Fremont | 7,737 | - 3.4% |

- The Council Bluffs-Omaha metro area is now one of four major growth areas in Iowa. In Mills County, where as many as one-third of the work force commutes to Council Bluffs-Omaha, population is up 6.5%. In Harrison County, the population grew over 3%. Counties around the Sioux City metro area are experiencing similar rates of growth.

**Attitudes of Residents in the Loess Hills Scenic Byway Corridor**

Residents in the Loess Hills are concerned about land use and resource protection issues. A survey designed to assess local attitudes about resources in the Loess Hills revealed the following with regard to the attitudes of residents in the Scenic Byway Corridor (*Landscape Resource Study* Figure 11, 1994):

- 78% percent have lived in the Loess Hills for a long time (over 10 years), 87% own property, and 85% like where they are living and plan to stay (over 10 years);
- 63% are most interested in protecting and preserving pioneer cemeteries, scenic areas (62%), native prairies (60%), rare and endangered plants, animals and their habitats (60%), and archaeological sites (58%);
- 73% percent favor preserving the natural and rural character of the Loess Hills even if it means slower population growth and economic development;
- 77% support county-level land use regulations that would help protect the natural environment in the Loess Hills;
- 87% percent support regulations that would protect the scenic qualities of the Loess Hills;
- 73% percent of residents favor the use of property tax exemptions to protect land in native prairie;
- 71% percent would like to see the number of recreational opportunities such as camping and hiking increase in the Loess Hills;
- 92% would not like to see any increase in the number of quarries in the Loess Hills;
- 70% would not like to see any increase in residential, commercial, or industrial development in the Loess Hills;

- 87% of residents agree that development in the Loess Hills should be directed toward areas where damage to the environment is minimized; and
- 94% agree on the need for conservation practices to prevent erosion on agricultural land in the Loess Hills.

Educating the public about resources in the Loess Hills M. Whye

**Actions of Residents in the Loess Hills Scenic Byway Corridor**

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In addition to the creation, development and management of the Scenic Byway itself, special mention should be made of additional efforts undertaken by local residents that highlight their interest in, and commitment to, the protection and proper management of the Loess Hills.

- **Loess Hills Prairie Seminar**: For over 30 years local residents have organized and held the Loess Hills Seminar in early June. The three day event has grown steadily in popularity over the years and currently attracts hundreds of participants. Open without charge to the public, the purpose of the seminar is to acquaint people with the wonders of the Loess Hills. The seminar offers nature walks and talks by experts on the ecology, geology, plant and animal species and history in the Loess Hills.

- **Loess Hills Hospitality Association**: The Loess Hills Hospitality Association is a community-based effort to attract and entertain visitors to Iowa's Loess Hills. The Association conducts marketing activities and arranges tours and special events for travelers in the Scenic Byway Corridor. Association membership consists of local businesses, community groups, cities and counties in the Loess Hills.

- **Private Nonprofit Organizations: The Iowa Chapter of The Nature Conservancy**, **Iowa Natural Heritage Foundation**, and **Iowa Prairie Network** are private nonprofit conservation organizations recognized and supported by residents for providing leadership in protecting and managing wisely resources in the Loess Hills. Local groups such as the **Loess Hills Preservation Society** in Council Bluffs and **Fremont County Conservancy** provide a means for residents to effectively address local issues of concern that impact the Loess Hills.

### *What needs to be done?*

The attitudes and actions of residents in the Loess Hills demonstrate an increased awareness of, and growing concern for, the intrinsic qualities of the Scenic Byway Corridor. Public communication and education efforts will be the key to maintaining and expanding this interest and involvement of local residents. Specific actions included in the "Corridor Development Actions" section of the *Corridor Management Plan* address the need to:

- Improve the public's awareness and understanding of the unique intrinsic qualities of the Loess Hills Scenic Byway Corridor; and
- Improve and maintain communication activities that inform the public about, and encourage their support of and involvement in, efforts to protect, enhance and manage resources in the Loess Hills.

***Notes:***

# Understanding Tourism

## Section Contents

Tourism and Scenic Byways 3-2

Tourism and the Loess Hills Scenic Byway 3-3

Economic Impact of Tourism in the Loess Hills 3-4

Marketing Tourism in the Loess Hills 3-7

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## Tourism and Scenic Byways

Over three-fourths of Americans prefer pleasure driving as their chosen recreational activity. Tourism, with regard to scenic byways, offers travelers the opportunity to experience the byway corridor's intrinsic qualities. The tourists' experience consists of the anticipation, use and memories of their visit to the scenic byway and its associated attractions, events, amenities and resources (Levin xii,1988).

Travel on a scenic byway can translate into real economic benefits for communities along its path. These benefits are derived from tourist expenditures, leading to income and employment for travel and tourism-related businesses and tourist-generated tax revenues.

Tourism-related economic benefits from scenic byways can also contribute to an improved quality of life in communities through which they travel. The actions of residents to attract, and provide products and services to, visitors frequently enhances the amenities (developed site facilities), resources and visual attractiveness of local communities and surrounding areas. In addition to drawing visitors, these enhancements can help communities attract and retain new residents and businesses (Scenic America 8-11, 1995).

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Resources in the Loess Hills provide opportunities for ecotourism D. Poggensee

## Tourism and the Loess Hills Scenic Byway

Sharing the intrinsic qualities of Iowa's Loess Hills with visitors provides opportunities to tell the story of the resources and people of the Scenic Byway Corridor. Presenting this story provides opportunities for tourism-based economic and community development and increased public appreciation of the Loess Hills. Tourism-based economic development opportunities associated with the Loess Hills Scenic Byway take the form of expanding existing businesses and new businesses that provide goods and services to travelers. At the same time, increased tax revenue from tourism-related activities supports improvements to public facilities and infrastructure in communities and rural areas.

Motorcoach tour in the Loess Hills M. Whye

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Tourism will contribute to increased support for preserving and enhancing the intrinsic qualities of the Loess Hills Scenic Byway Corridor. The benefits of tourism for local communities and economies will be a strong incentive for residents, businesses and public officials to protect and manage resources in the Scenic Byway Corridor that attract visitors. Tourism will foster a greater awareness among residents and visitors of the uniqueness of the Loess Hills. A better understanding of the value of resources in the Loess Hills will generate support inside and outside of the Scenic Byway Corridor for their protection.

## Economic Impact of Tourism in the Loess Hills

The popularity of the Loess Hills as a tourist attraction has generated interest in the economic impact of tourism in the region. At the request of local communities, economic development organizations, and conservation groups, ISU's Department of Economics studied the economic impact and valuation of recreation in the Loess Hills in the summer and fall of 1995. The study surveyed visitors to attractions in the Loess Hills to determine the amount and nature of visitor expenditures and the economic value that travelers place on recreational trips in the region. The expenditures of travelers were also used to estimate the employment effects generated by tourism in the Loess Hills as well as the overall economic benefits of recreation in the region (Alexander et al. 3-6, 1997).

Among the most significant findings from the ISU study were the following:

- 72% of travelers in the Loess Hills lived within 100 miles (200 mile round-trip) of the Scenic Byway Corridor. Travelers from within 100 miles averaged considerably more trips per year to the Loess Hills (over 9) than those who lived more than 100 miles away (less than 2);
- Most travelers to the Loess Hills visited several attractions during each of their trips to the region. DeSoto National Wildlife Refuge was the attraction most frequently visited by travelers on any given trip to the region;
- 77% of visitors to the Loess Hills traveled by car. The percentage of visitors traveling by car were similar for those who lived within 100 miles and more than 100 miles from the Loess Hills. Less than 5% of visitors traveled by either motorcoach or recreational vehicle to the Loess Hills;
- Average party size for visitors not traveling by motorcoach was 2.4 adults and 0.6 children for those who lived within 100 miles and 2.5 adults and 0.5 children for those who lived more than 100 miles away. Motorcoach travel parties averaged 30 adults and 1.5 children for those who lived within 100 miles and 35 adults and 0.14 children for those who lived more than 100 miles away;

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- Visitors preferred less developed amenities in a natural setting such as scenic overlooks, walking and hiking trails, picnic areas, and signs and displays about sites of interest. A greater percentage of visitors indicated that golf courses, hotels and motels would reduce their enjoyment than those who felt that these types of amenities would add to their enjoyment.
- Visitors to the Loess Hills were evenly divided along gender lines, with 51.2% being males and 48.8% being females. The average age of visitors was 47.5 years. The average number of years of education for visitors was 15.1. Average household income of visitors was $41,800. Over 50% of visitors were full-time employees and 24% were retired;
- Visitors spent an average of $50.90 per travel party on each trip to the Loess Hills. This level of spending is significantly less than that estimated for visitors to Iowa in general as well as for other scenic byways in the United States;
- More than 1.1 million visitors or over 460,000 travel parties visited attractions each year in the Loess Hills Scenic Byway Corridor. Considering most travelers visit more than one attraction during their trips, a conservative estimate of the annual number of visitors is 550,000 or about 230,000 parties;
- An estimated $11.8 to $23.6 million per year in visitor-related expenditures occurred in the Loess Hills Scenic Byway Corridor. As a result of these expenditures between 231 and 462 jobs were supported by tourism and $3.9 and $7.9 million of total annual income was generated. Approximately two-thirds of those jobs were in retail trade, with another 30 percent in the services industry; and

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Bicyclists on RAGBRAI in the City of Turin, Monona County D. Poggensee

- Economic valuation analyses determined that the additional value or worth that visitors place on each of their recreational trips to the Loess Hills, above their direct per trip expenditures, was between $47 and $65 per travel party. The analyses also found that a higher willingness to pay is affected positively by age and occurs for those visitors who find increased enjoyment during their trips from the availability of hiking trails, scenic overlooks, picnic areas, interpretive displays, camping facilities and visitor services such as restaurants, gas stations and lodging.

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### *What needs to be done?*

The ISU study provides information to help residents and public officials make improved decisions regarding the protection, enhancement and management of resources in the Scenic Byway Corridor. Actions presented in the "Corridor Development Actions" section of the *Corridor Management Plan* address the need to:

- Increase the availability of amenities that visitors indicate contribute most to their enjoyment of travel in the Loess Hills and that are associated with a higher willingness to pay expressed by visitors to the Loess Hills.

## Marketing Tourism in the Loess Hills

Driving scenic byways has become an increasingly popular tourism activity in Iowa. This increased interest is both the result and focus of marketing efforts that emphasize the state's scenic byways. Growth in marketing activities for the Loess Hills Scenic Byway has generated interest regarding the scope, direction and effectiveness of these efforts. The Western Iowa Tourism Region, a non-profit organization that consists of private and public business, economic development, community and conservation entities interested in tourism in western Iowa, conducted an assessment of current marketing activities in preparing to develop a marketing plan for the Loess Hills Scenic Byway.

### *What do we know?*

Among the most significant findings from the Tourism Region's assessment were the following:

- Marketing activities for the Loess Hills were being supported and conducted primarily by seven entities. These major marketers include the Division of Tourism of the Iowa DED, the Western Iowa Tourism Region, the Council Bluffs Convention and Visitors Bureau, the Sioux City Convention and Visitors Bureau, the Harrison County Welcome Center in Missouri Valley, the Sergeant Floyd Welcome Center in Sioux City, and the Loess Hills Hospitality Association in Moorhead;
- These major marketers spent more than $175,000 annually on marketing activities related to the Loess Hills. Principle marketing activities included participating in group and consumer travel shows; conducting familiarization tours; developing and distributing printed information for visitors; and advertising, primarily in print media;
- Marketing activities were directed toward the group travel market. Major marketers currently participate in eleven regional marketplaces, two national marketplaces and two international marketplaces for group travel (Kansas City, Quad Cities, Minneapolis, St. Louis, Des Moines, Omaha, Chicago, Milwaukee, Sioux Falls, Denver, Salt Lake, National Tour Association, American Bus Association, Ontario, Pow Wow International). Marketers also participated in two Midwestern marketplaces for consumer travel (Des Moines and Omaha);

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Motorcoach visits attraction in the Loess Hills Golden Hills

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- All major marketing organizations included the Loess Hills in their promotional information and advertising. The Scenic Byway was highlighted in the annual version of the Iowa Travel Guide. The Loess Hills Scenic Byway is included in the Iowa Transportation Map. The Loess Hills Scenic Byway guidebook is currently the only widely distributed visitor information piece dedicated exclusively to the Scenic Byway Corridor;
- Visitor services including food, restrooms, public phones, lodging, gas, automobile repair, and medical attention are readily available to travelers at a number of the communities in the Scenic Byway Corridor including the cities of LeMars, Sioux City, Onawa, Missouri Valley, Council Bluffs, Glenwood, and Hamburg; and
- Coordination of the Loess Hills related marketing activities of major marketers takes place through the Western Iowa Tourism Region. No single entity or organizational structure exists that is primarily responsible for developing and implementing marketing strategies and actions for the Loess Hills Scenic Byway. All major marketers agreed on the need to cooperate with one another in order to expand marketing activities for the Loess Hills and Scenic Byway.

### *What needs to be done?*

Western Iowa Tourism Region's assessment of marketing activities provides information to improve efforts to attract and provide products and services to visitors to the Loess Hills Scenic Byway Corridor. Actions presented in the "Corridor Development Actions" section of the *Corridor Management Plan* address the need to:

- Implement a marketing plan for the Loess Hills Scenic Byway that creates a formal network for the exchange of information between marketing entities; ensures the availability of quality promotional materials; increases media coverage of attractions and events; includes the Byway in marketing performed by the state; balances the use of marketing resources between the group and consumer travel markets; and provides opportunities for cooperative marketing activities.

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## *Maps and Tables*

Major Cities/Markets

Economic Corridor

Traveler Services - Map

Traveler Services - Table

Iowa Welcome Centers

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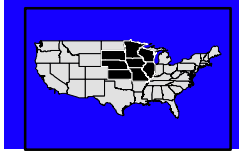
# Major Cities / Markets

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Major Cities
Loess Hills Landform Region
Major Rivers

0 55 110 220 330 Miles

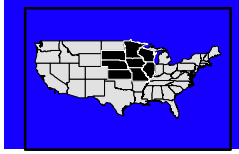
N W E S

# Economic Corridor

## 100-mile Zone from Scenic Byway

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Major Cities
Major Rivers
Loess Hills Landform Region
100 Mile Buffer

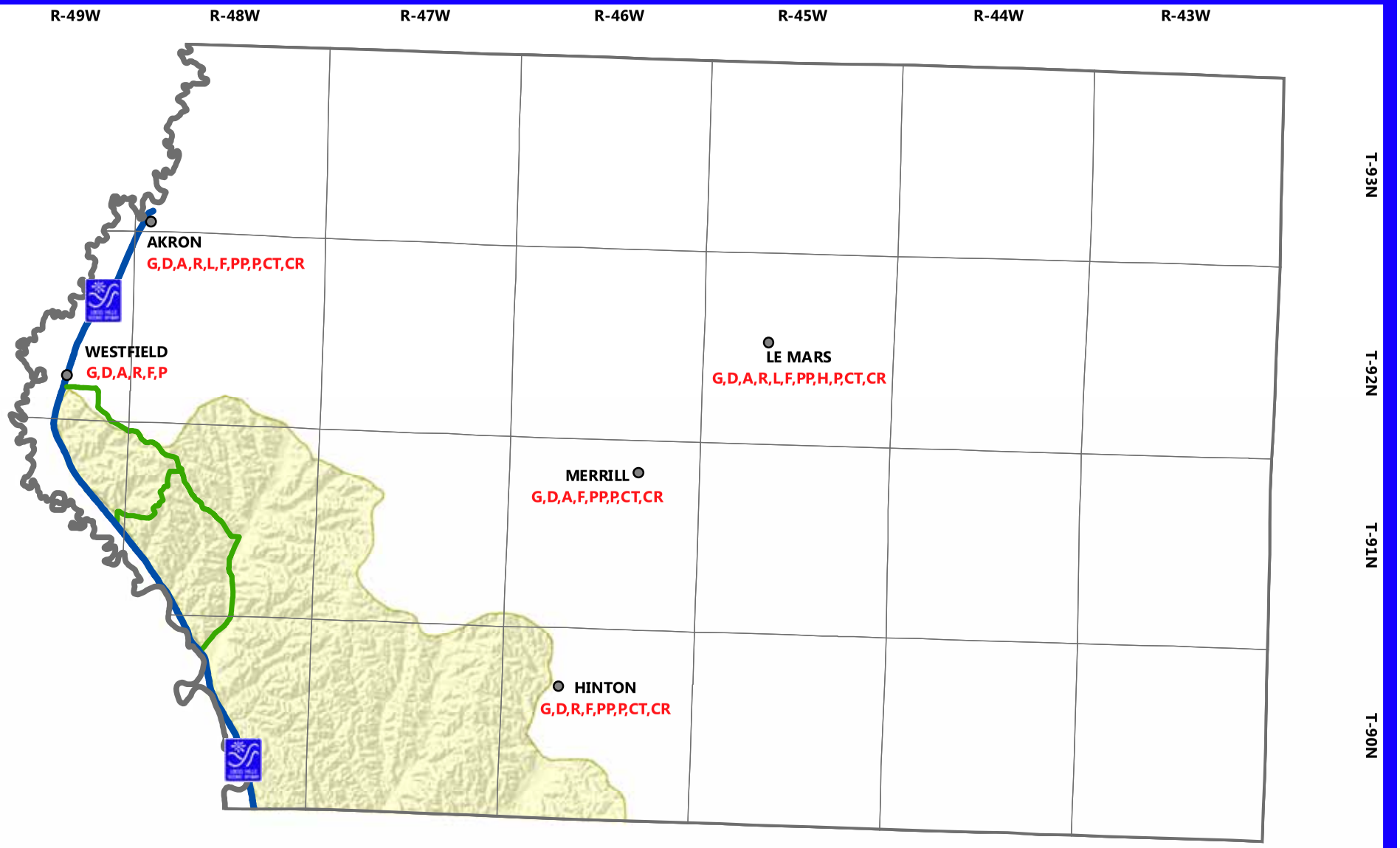
0 55 110 220 330 Miles

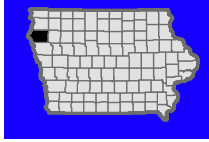
N W E S

# Traveler Services
## Plymouth County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Township Line
Loess Hills Landform Region

G Gas A Auto Service L Lodging PP Pblc Phone CR Camping RV P Picnic
D Diesel R Restrooms F Food H Hospital CT Camping Tent

0 1.25 2.5 5 7.5 Miles

N W E S

# Loess Hills Scenic Byway Traveler Services

## Plymouth County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

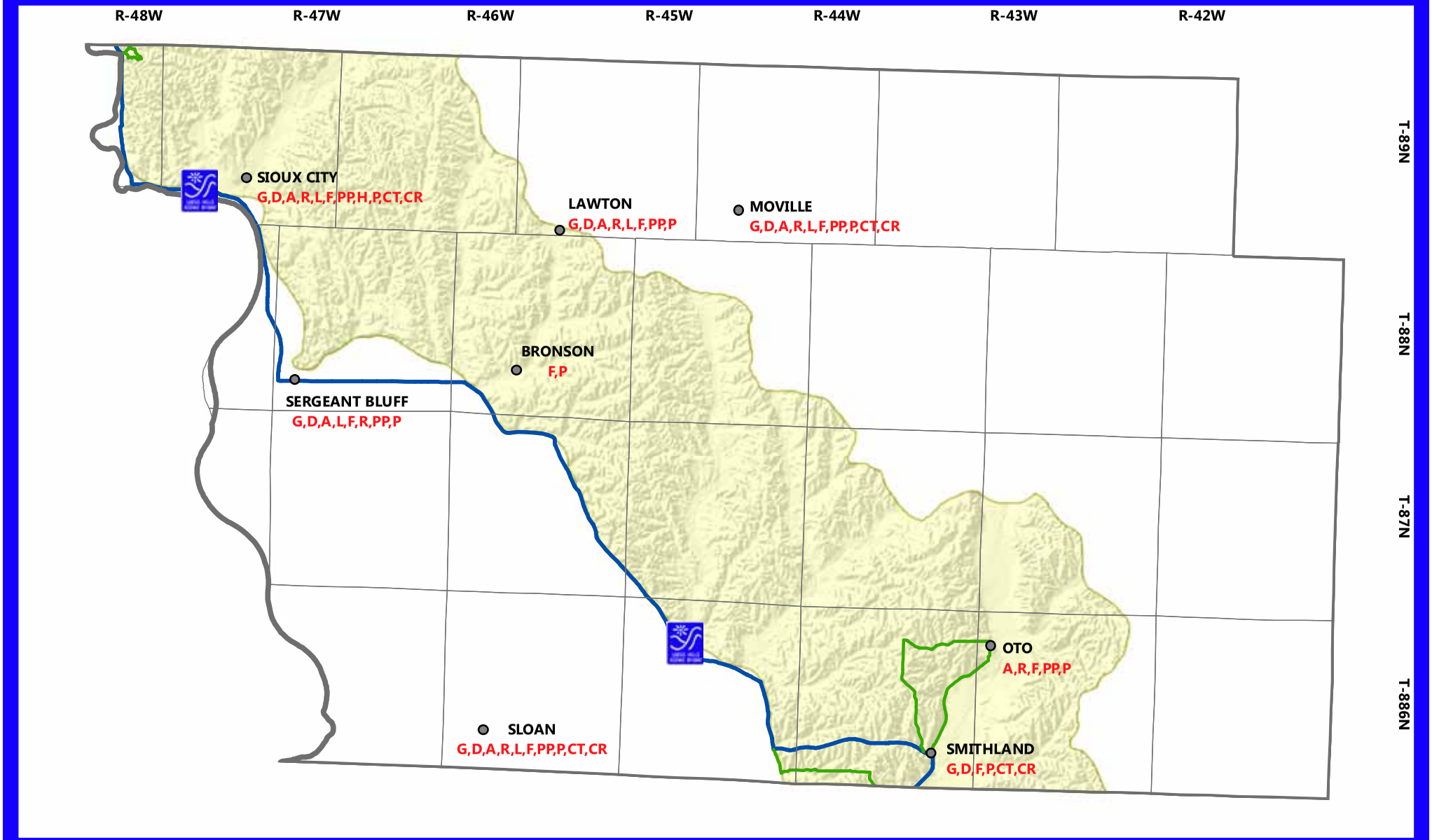
| Location | Gas | Diesel | Auto Service | Public Restroom | Lodging | Food | Public Phone | Hospital | Picnic | Camping Tent | Camping RV |
|---|---|---|---|---|---|---|---|---|---|---|---|
| AKRON | YES | YES | YES | YES | YES | YES | YES | NO | YES | YES | YES |
| HINTON | YES | YES | NO | YES | NO | YES | YES | NO | YES | YES | YES |
| LE MARS | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| MERRILL | YES | YES | YES | NO | NO | YES | YES | NO | YES | YES | YES |
| WESTFIELD | YES | YES | YES | YES | NO | YES | NO | NO | YES | NO | NO |

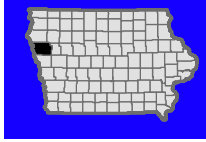
# Traveler Services

## Woodbury County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Township Line
Loess Hills Landform Region

G Gas A Auto Service L Lodging PP Pblc Phone CR Camping RV P Picnic
D Diesel R Restrooms F Food H Hospital CT Camping Tent

0 1.25 2.5 5 7.5 Miles

N W E S

# Loess Hills Scenic Byway Traveler Services

## Woodbury County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

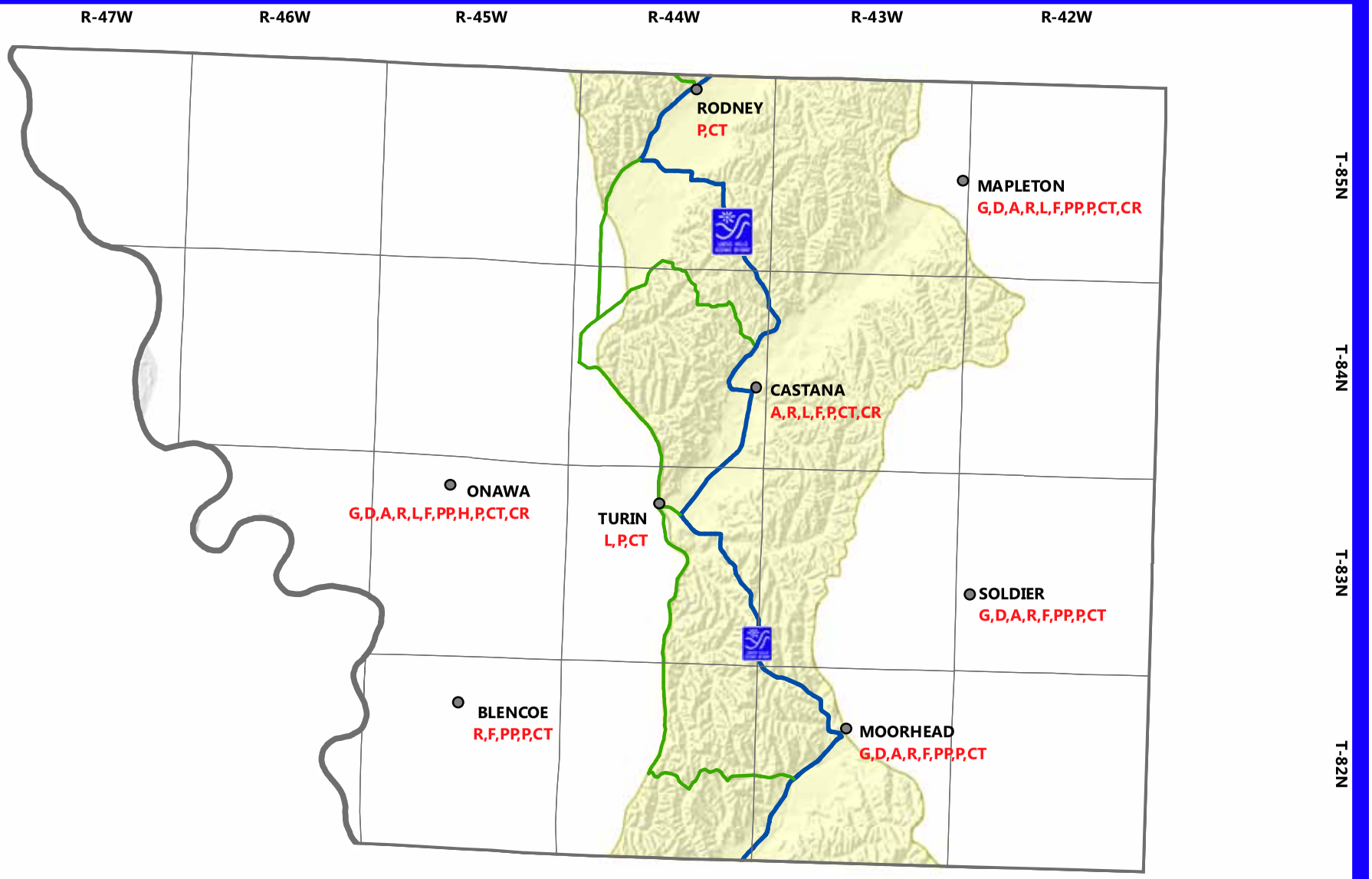
| Location | Gas | Diesel | Auto Service | Public Restroom | Lodging | Food | Public Phone | Hospital | Picnic | Camping Tent | Camping RV |
|---|---|---|---|---|---|---|---|---|---|---|---|
| BRONSON | NO | NO | NO | NO | NO | YES | NO | NO | YES | NO | NO |
| LAWTON | YES | YES | YES | YES | YES | YES | YES | NO | YES | NO | NO |
| MOVILLE | YES | YES | YES | YES | YES | YES | YES | NO | YES | YES | YES |
| OTO | NO | NO | YES | YES | NO | YES | YES | NO | YES | NO | NO |
| SERGEANT BLUFF | YES | YES | YES | YES | YES | YES | YES | NO | YES | NO | NO |
| SIOUX CITY | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| SLOAN | YES | YES | YES | YES | YES | YES | YES | NO | YES | YES | YES |
| SMITHLAND | YES | YES | NO | NO | NO | YES | NO | NO | YES | YES | YES |

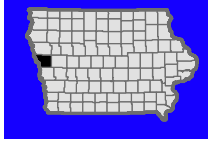
# Traveler Services

## Monona County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Township Line
Loess Hills Landform Region

G Gas A Auto Service L Lodging PP Pblc Phone CR Camping RV P Picnic
D Diesel R Restrooms F Food H Hospital CT Camping Tent

0 1.25 2.5 5 7.5 Miles

N W E S

# Loess Hills Scenic Byway Traveler Services

## Monona County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

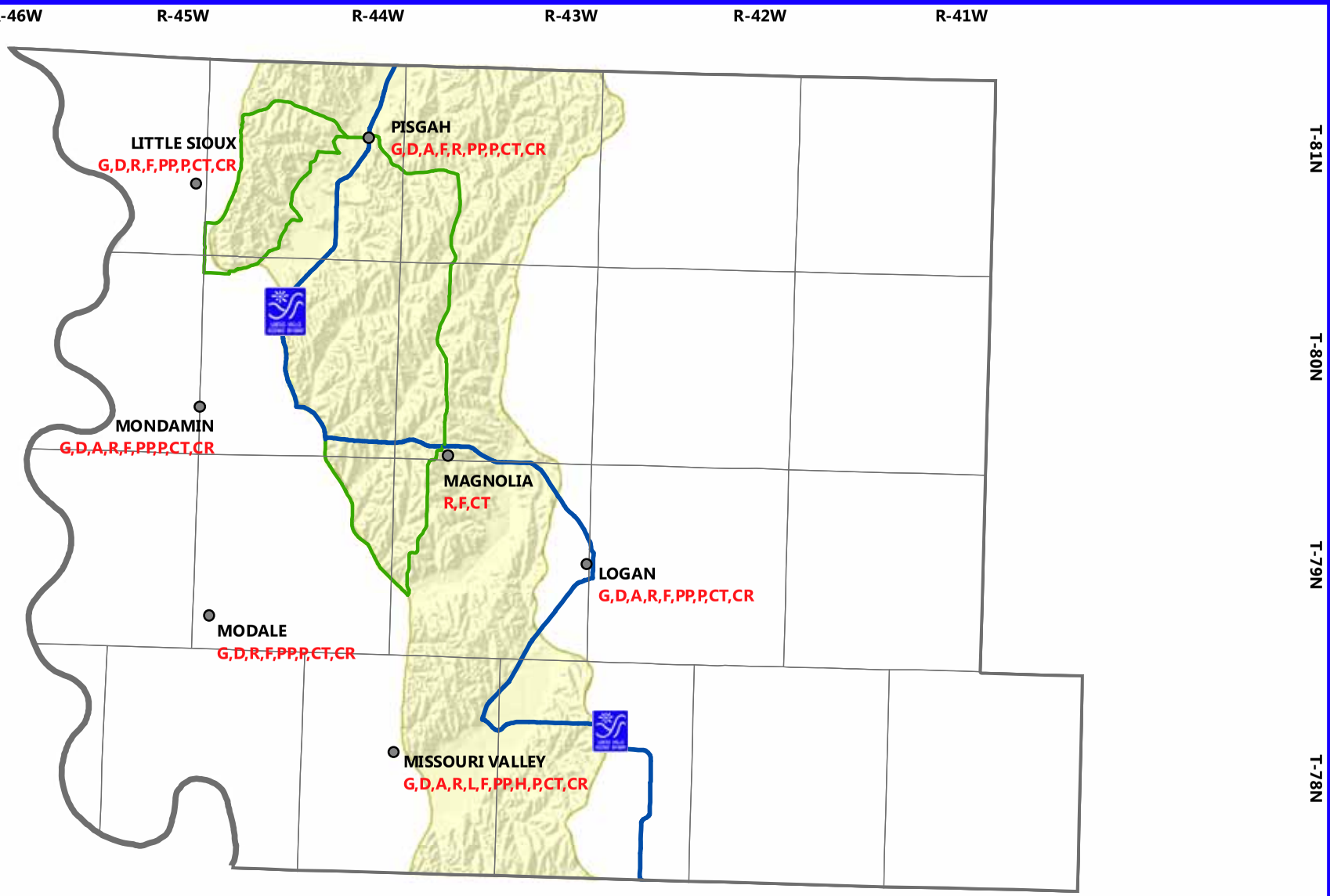
Prepared By: Pottawattamie County GIS Department

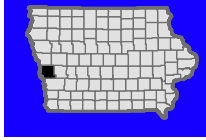
| Location | Gas | Diesel | Auto Service | Public Restroom | Lodging | Food | Public Phone | Hospital | Picnic | Camping Tent | Camping RV |
|---|---|---|---|---|---|---|---|---|---|---|---|
| BLENCOE | NO | NO | NO | YES | NO | YES | YES | NO | YES | YES | NO |
| CASTANA | NO | NO | YES | YES | YES | YES | NO | NO | YES | YES | YES |
| MAPLETON | YES | YES | YES | YES | YES | YES | YES | NO | YES | YES | YES |
| MOORHEAD | YES | YES | YES | YES | NO | YES | YES | NO | YES | YES | NO |
| ONAWA | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| RODNEY | NO | NO | NO | NO | NO | NO | NO | NO | YES | YES | NO |
| SOLDIER | YES | YES | YES | YES | NO | YES | YES | NO | YES | YES | NO |
| TURIN | NO | NO | NO | NO | YES | NO | NO | NO | YES | YES | NO |

# Traveler Services
## Harrison County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Township Line
Loess Hills Landform Region

G Gas A Auto Service L Lodging PP Pblc Phone CR Camping RV P Picnic
D Diesel R Restrooms F Food H Hospital CT Camping Tent

0 1.25 2.5 5 7.5 Miles

N W E S

# Loess Hills Scenic Byway Traveler Services

## Harrison County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

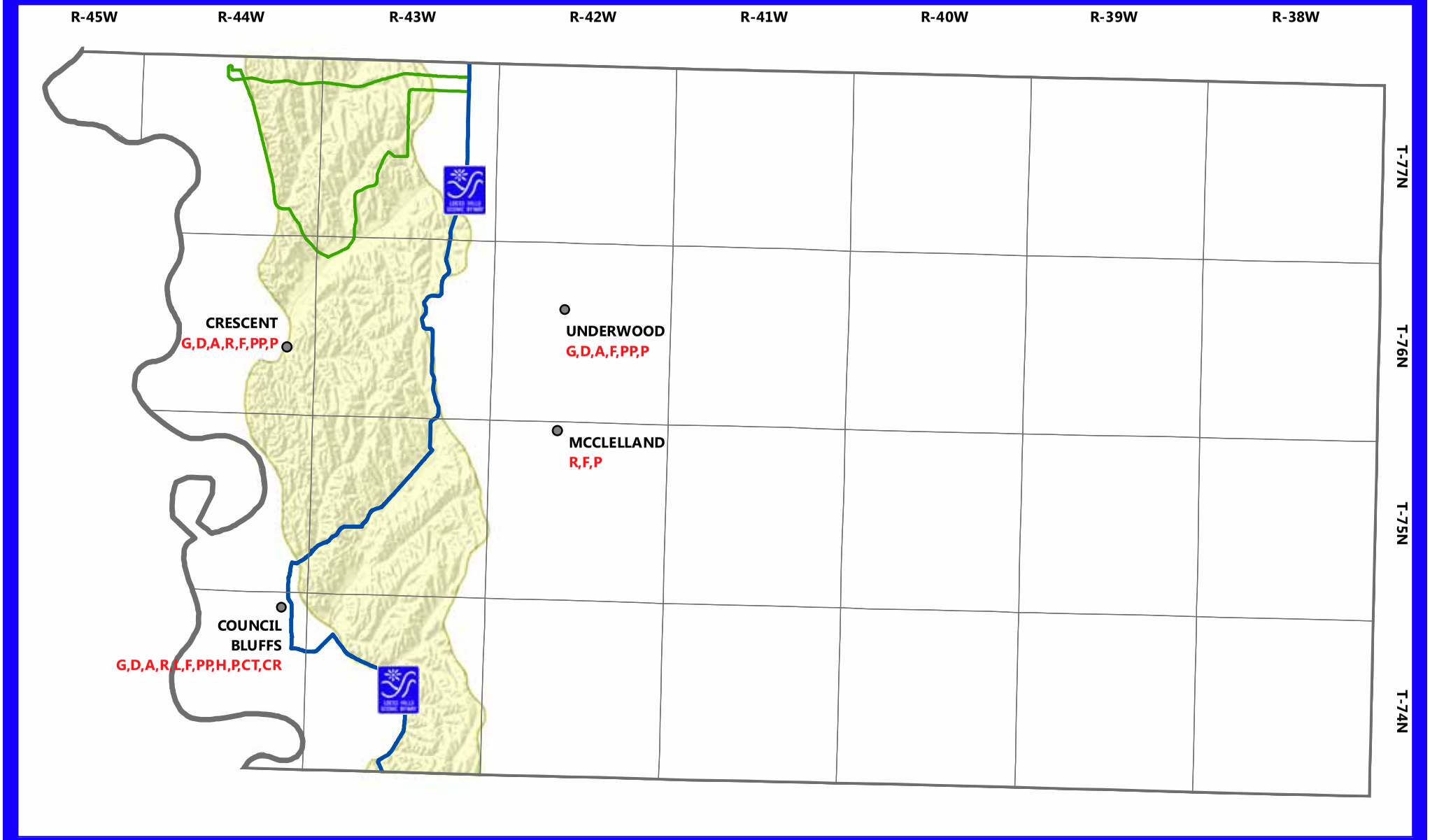
| Location | Gas | Diesel | Auto Service | Public Restroom | Lodging | Food | Public Phone | Hospital | Picnic | Camping Tent | Camping RV |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LITTLE SIOUX | YES | YES | NO | YES | NO | YES | YES | NO | YES | YES | YES |
| LOGAN | YES | YES | YES | YES | NO | YES | YES | NO | YES | YES | YES |
| MAGNOLIA | NO | NO | NO | YES | NO | YES | NO | NO | NO | YES | NO |
| MISSOURI VALLEY | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| MODALE | YES | YES | NO | YES | NO | YES | YES | NO | YES | YES | YES |
| MONDAMIN | YES | YES | YES | YES | NO | YES | YES | NO | YES | YES | YES |
| PISGAH | YES | YES | YES | YES | NO | YES | YES | NO | YES | YES | YES |

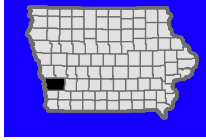
# Traveler Services

## Pottawattamie County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Loess Hills Scenic Byway Spine
Township Line
Loess Hills Scenic Byway Loop
Loess Hills Landform Region

G Gas A Auto Service L Lodging PP Pblc Phone CR Camping RV P Picnic
D Diesel R Restrooms F Food H Hospital CT Camping Tent

0 1.25 2.5 5 7.5 Miles

N W E S

# Loess Hills Scenic Byway Traveler Services

**Pottawattamie County, IA**

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

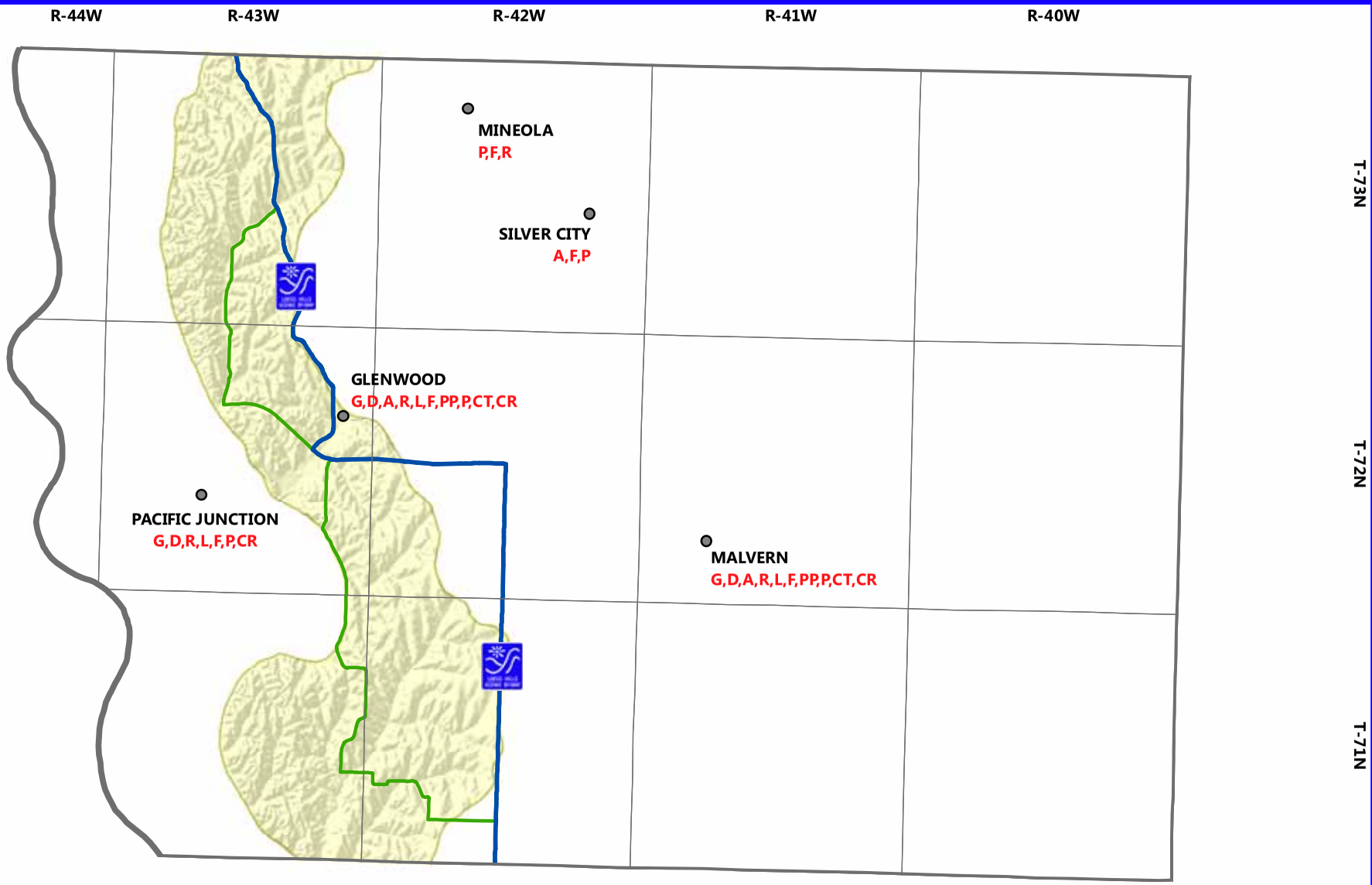
| Location | Gas | Diesel | Auto Service | Public Restroom | Lodging | Food | Public Phone | Hospital | Picnic | Camping Tent | Camping RV |
|---|---|---|---|---|---|---|---|---|---|---|---|
| COUNCIL BLUFFS | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| CRESCENT | YES | YES | YES | YES | NO | YES | YES | NO | YES | NO | NO |
| MCCLELLAND | NO | NO | NO | YES | NO | YES | NO | NO | YES | NO | NO |
| UNDERWOOD | YES | YES | YES | YES | NO | YES | YES | NO | YES | NO | NO |

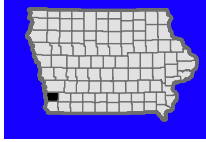
# Traveler Services

## Mills County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Township Line
Loess Hills Landform Region

G Gas A Auto Service L Lodging PP Pblc Phone CR Camping RV P Picnic
D Diesel R Restrooms F Food H Hospital CT Camping Tent

0 1 2 4 6 Miles

N W E S

# Loess Hills Scenic Byway Traveler Services

## Mills County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

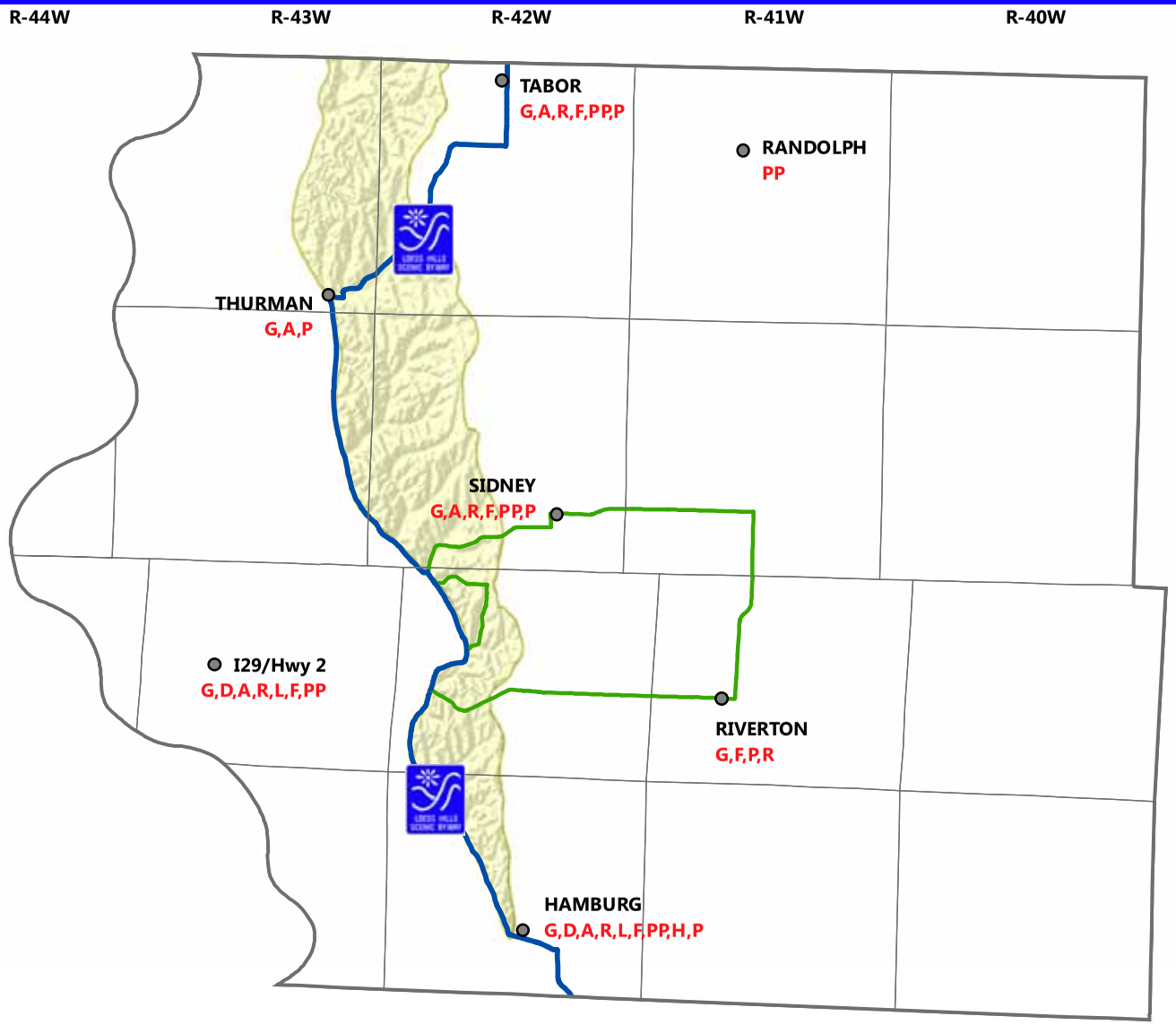
Prepared By: Pottawattamie County GIS Department

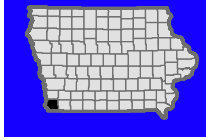
| Location | Gas | Diesel | Auto Service | Public Restroom | Lodging | Food | Public Phone | Hospital | Picnic | Camping Tent | Camping RV |
|---|---|---|---|---|---|---|---|---|---|---|---|
| GLENWOOD | YES | YES | YES | YES | YES | YES | YES | NO | YES | YES | YES |
| MALVERN | YES | YES | YES | YES | YES | YES | YES | NO | YES | YES | YES |
| MINEOLA | NO | NO | NO | YES | NO | YES | NO | NO | YES | NO | NO |
| PACIFIC JUNCTION | YES | YES | NO | YES | YES | YES | NO | NO | YES | NO | YES |
| SILVER CITY | NO | NO | YES | NO | NO | YES | NO | NO | YES | NO | NO |

# Traveler Services
## Fremont County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Township Line
Loess Hills Landform Region

G Gas A Auto Service L Lodging PP Pblc Phone CR Camping RV P Picnic
D Diesel R Restrooms F Food H Hospital CT Camping Tent

0 1.25 2.5 5 7.5 Miles

N W E S

# Loess Hills Scenic Byway Traveler Services

## Fremont County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

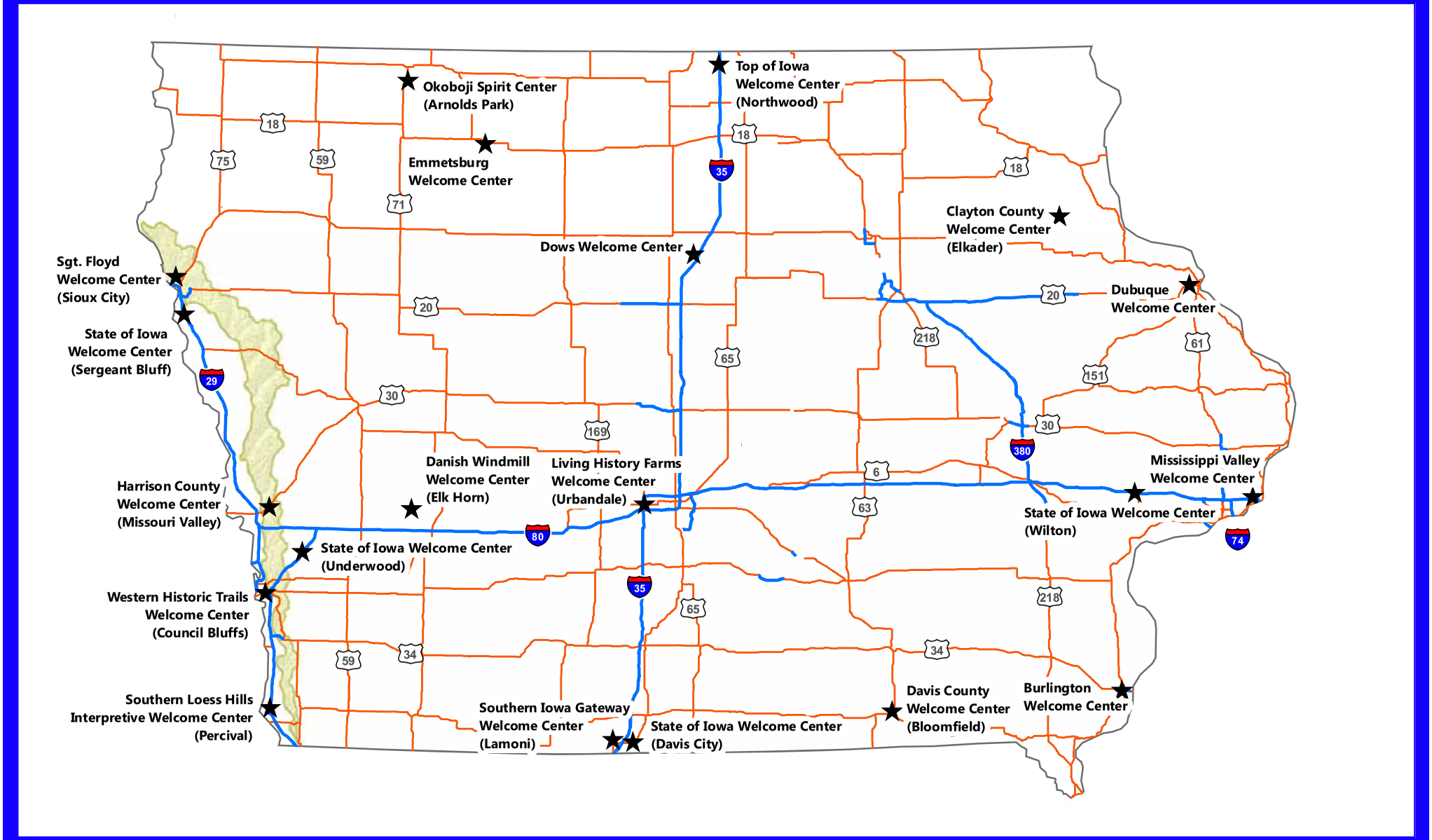
| Location | Gas | Diesel | Auto Service | Public Restroom | Lodging | Food | Public Phone | Hospital | Picnic | Camping Tent | Camping RV |
|---|---|---|---|---|---|---|---|---|---|---|---|
| HAMBURG | YES | YES | YES | YES | YES | YES | YES | YES | YES | NO | NO |
| I29/Hwy 2 | YES | YES | YES | YES | YES | YES | YES | NO | NO | NO | NO |
| RANDOLPH | NO | NO | NO | NO | NO | NO | YES | NO | NO | NO | NO |
| RIVERTON | YES | NO | NO | YES | NO | YES | NO | NO | YES | NO | NO |
| SIDNEY | YES | NO | YES | YES | NO | YES | YES | NO | YES | NO | NO |
| TABOR | YES | NO | YES | YES | NO | YES | YES | NO | YES | NO | NO |
| THURMAN | YES | NO | YES | NO | NO | NO | NO | NO | YES | NO | NO |

# Iowa Welcome Centers

## State of Iowa

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department




Iowa Welcome Centers
Loess Hills Landform Region

0 12.5 25 50 75 Miles

N W E S

# Corridor Development Actions

## Section Contents

Introduction 4-2

Corridor Amenities 4-3

Sign Plan 4-18

Bicycle Routes 4-49

Interpretive Programs and Activities 4-58

Land Use Strategies 4-62

Assessing Future Impacts 4-69

Managing Roadsides and Entryways 4-74

Marketing the Intrinsic Qualities 4-76

Involving and Communicating With the Public 4-77

Implementation 4-80

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## Introduction

The previous sections of the *Corridor Management Plan* provide an understanding of the special resources or intrinsic qualities of the Loess Hills Scenic Byway Corridor. In doing so, specific needs were identified regarding the development, management, and protection of these intrinsic qualities. This section, "Corridor Development Actions," presents the action plan for addressing these needs. The recommended actions fall under three categories:

- Public Facilities Improvements;
- Land Use Strategies; and
- Ongoing Management Activities.

**Public Facilities Improvements** are for the most part, physical improvements that affect the Scenic Byway and public land and facilities associated with the Corridor. Many of these actions may require public funding and should become part of state, county and city capital improvement plans. These actions will:

- Improve existing and add new **amenities**;
- Implement a comprehensive **sign system**;
- Establish **bicycle routes** and attendant facilities; and
- Develop **interpretive programs and projects**.

**Land Use Strategies** involve actions that protect public and private property in the Loess Hills Scenic Byway. The overall purpose of the various land use strategies is to protect the intrinsic values in the Loess Hills Scenic Byway Corridor.

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**Ongoing Management Activities** are those which are routinely needed to ensure that:

- Intrinsic qualities of the Scenic Byway Corridor are maintained and enhanced;
- Concerns and desires of travelers the Scenic Byway Corridor are understood and addressed; and
- Business opportunities in the Scenic Byway Corridor are recognized and developed.

This section concludes with an implementation matrix for the *Corridor Management Plan* which prioritizes the specific actions and assigns responsibilities for their completion.

## Corridor Amenities

One of the greatest challenges to the management and protection of resources in the Loess Hills Scenic Byway Corridor is to maintain a mutually beneficial relationship between tourism and conservation. The recreational use of resources in the Loess Hills encourages a greater understanding and appreciation of their uniqueness and value. At the same time, managing recreational activities to avoid any negative impacts on resources can be a challenge. Several problems can occur when fewer amenities are available for public use than are needed to meet demand. A lack of amenities to support recreational activities may result in trespassing on, and damages to, private land and property. Inadequate amenities can result in overuse of available sites and degradation of sensitive areas.

In order to determine the adequacy of amenities in the Loess Hills Scenic Byway Corridor and develop recommendations for improvements and additions, the following was completed:

- Research on public recreation preferences and demand;
- Evaluation of existing public amenities; and
- Development and application of an amenity spacing model.

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Dorothy Pecaut Nature Center, Woodbury County M. Whye

### *Public Recreation Preferences and Demand*

Several sources of information contributed to understanding public preference and demand for amenities in the Loess Hills Scenic Byway Corridor. This information was gathered through surveys of residents and visitors and assessments of available amenities in the Scenic Byway Corridor and Iowa. These information sources and the most significant findings are:

- A survey conducted during the initial development of the Loess Hills Scenic Byway identified sightseeing (84%), visiting wildlife areas or prairies (80%), picnicking (78%), visiting historic sites (72%), shopping and restaurants (75%) and outdoor education (75%) as recreational activities of greatest interest to the public;
- The most recent Iowa Statewide Comprehensive Outdoor Recreation Plan identified several recreational facility deficiencies in different regions of the Scenic Byway Corridor. These included equestrian trails (north region), foot trails (north and south regions), bike trails (north, middle and south regions), handicapped-accessible facilities (south region), archeological sites (north, middle and south region), modern camping facilities (south region) and non-modern camping facilities (north and south region);
- The results of Welcome Center Surveys conducted by the Iowa DED's Division of Tourism identified the following activities as those of greatest interest to the traveling public; sightseeing, historic sites, camping, shopping, museums, bicycling, fishing, outdoor education, hiking and hunting;
- Scenic preference testing conducted in developing this *Corridor Management Plan* questioned residents and visitors about their recreational preferences. Recreational activities of greatest interest identified included sightseeing, eating in restaurants, historic sites and attractions, bicycling, picnicking, shopping, outdoor education, bird watching, fishing, hunting and golf.
- Analysis of the economic impact and valuation of recreation in the Loess Hills conducted as part of the *Corridor Management Plan* asked travelers to identify those amenities that would most add to their enjoyment while traveling in the Scenic Byway Corridor. Amenities identified included interpretive signs or displays (87%), wildlife or prairie areas (86%), walking and hiking trails (84%), cultural or historic sites (83%), scenic overlooks (76%) and picnic areas (75%).

These sources of information provide a strong indication of the recreational preferences and demand of the traveling public. This information has been used to evaluate the adequacy of existing, and the need for additional, amenities in the Loess Hills Scenic Byway Corridor.

### *Evaluation of Existing Public Amenities*

An extensive inventory and evaluation was conducted of existing amenities in the Loess Hills Scenic Byway Corridor. This work assessed the current condition of these amenities. The inventory and evaluation examined in detail the full range of features and accommodations of importance to the traveling public including:

- Access highways and roads
- Entrance drive and parking area
- Lighting
- Power and water supplies
- Off-site directional signs
- On-site identification signs
- Sidewalks
- Buildings
- Restrooms
- Trails
- Scenic overlooks
- Interpretive signs
- Picnic facilities
- Shelters
- Trash cans
- Camping facilities
- Fishing facilities
- Boating facilities
- Landscape features

The results of this inventory and evaluation were used to develop recommendations for enhancing existing, and providing additional, amenities in the Loess Hills Scenic Byway Corridor.

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### *Geographic Distribution of Public Amenities*

A spacing model attempted to optimize the distribution of amenities in the Loess Hills Scenic Byway Corridor. The model took into consideration:

- Recreational preferences and demands of the traveling public;
- Location of existing public amenities and the facilities available;
- Long-range development and management plans of state and county agencies; and
- Input from tourism and recreation professionals.

The model was used to analyze the availability of 14 different amenity types based on their geographic distribution throughout the Scenic Byway Corridor. Optimum distances for each amenity type were determined and expressed in terms of drive time. The need for an amenity was identified whenever estimated drive time between two existing amenities of the same type exceeded the model time by more than five minutes. Amenity types and optimum drive times between amenity locations used in the spacing model are:

| **Amenities/Activities** | **Driving Time Between Activities/Amenities** |
|---|---|
| Public restrooms | 20 minutes |
| Camping facilities | 40 minutes |
| Picnic areas | 20 minutes |
| Scenic overlooks with interpretive signs | 30 minutes |
| Historic sites | 20 minutes |
| Welcome/information center facilities | 90 minutes |
| Driving tour points of interest | 10-15 minutes |
| Bird watching areas | 60 minutes |
| Hiking trails | 40 minutes |
| Remote, undeveloped wildlife areas | 90 minutes |
| Interpretive and education activities or facilities | 45 minutes |
| Public hunting/fishing areas | 60 minutes |
| Equestrian trails | 90 minutes |
| | |

### *Amenity Actions*

**Amenity Action #1**
Recommendations for improving existing amenities in the Loess Hills Scenic Byway Corridor were developed based on the research, evaluation and modeling activities described above. These recommendations address such items as:

- Improved off-site directional signs;
- Addition or improvement of site identification at entrances;
- Changes to entryway configurations for improved traffic flow;
- Safety improvements in parking surface and/or access road drainage and surface;
- Restoration of mown areas to native prairie;
- Tree plantings to shade parking areas;
- Review of handicapped parking locations;
- Repair to damaged sidewalks; and
- Vegetation screening where needed.

Specific recommendations for existing amenities in each county of the Loess Hills Scenic Byway Corridor are listed below. *Italicized items are minimum recommendations required to meet Corridor Management Plan objectives.*

**Plymouth County**

- Broken Kettle Grassland
  - ◊ *Add scenic overlook with interpretive panel - drive by style (no deck)*
- Dunham Prairie Preserve
  - ◊ Consider adding off-site directional signs guiding visitors to a parking area for the site
- Five Ridge Prairie Area
  - ◊ *Add picnic facilities*
  - ◊ Consider adding site identification sign at entrance
- Hillview Recreation Area
  - ◊ Consider adding interpretive historic panel
  - ◊ Consider restoring some of the mown area to native vegetation to reduce mowing needed
  - ◊ Consider adding interpretive and education facility

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**Woodbury County**

- Bacon Creek Park
  - ◊ Consider adding off-site direction signs guiding visitors to the park
  - ◊ Consider restoring some of the mown area to native vegetation to reduce mowing needed
- Iowa Welcome Center & Sergeant Floyd Riverboat Museum
  - ◊ *Enhance outdoor interpretive signs (river theme)*
- Inkapaduta Historical Marker
  - ◊ *Expand interpretive historic panel on Native American theme*
- Dorothy Pecaut Nature Center
  - ◊ *Add hiking trails*
  - ◊ Consider adding off-site directional signs guiding visitors to the area
  - ◊ Consider additional outdoor interpretive signage
- Riverside Bluffs Prairie Preserve
  - ◊ Consider adding off-site directional signs guiding visitors to a parking are for the site
  - ◊ Consider improvements to the entryway configuration for traffic safety
  - ◊ Consider adding site identification sign at entrance
- Sioux City Prairie Preserve
  - ◊ Add off-site directional signs guiding visitors to a parking area for the site
- Smithland Museum & Log Cabin
  - ◊ *Add interpretive historic panels*
  - ◊ Add site identification sign at entrance
  - ◊ Improve parking area
- Southwood Conservation Area
  - ◊ *Upgrade/expand interpretive signs*
  - ◊ *Add scenic overlook-drive--up style*
- War Eagle Monument
  - ◊ Consider adding interpretive signs

**Monona County**

- Loess Hills Wildlife Area
  - ◊ *Add historic interpretive signage on site or develop site at historic Areola town site near the area with signage*
  - ◊ *Add scenic overlook - drive-up or hike to type*
  - ◊ Consider adding off-site directional signs guiding visitors to the area
- Oldham Recreation Area
  - ◊ Consider restoring some of the mown area to native vegetation to reduce mowing needed
- Preparation Canyon State Park
  - ◊ *Add historical site interpretive signs at Preparation town site or other historic site*
- *Preparation Town Site*
  - ◊ *Transform into historical site with interpretive signs*
  - ◊ Consider adding off-site directional signs guiding visitors to a parking area for the site
- Savery Pond
  - ◊ Consider restoring some of the mown area to native vegetation to reduce mowing needed
- South Jordan Cemetery
  - ◊ *Add interpretive signage*
  - ◊ Consider adding off-site directional signs guiding visitors to a parking area for the site
  - ◊ Consider adding site identification sign at entrance
  - ◊ Consider expanding pull-off to accommodate more vehicles for parking
- Turin Man Archeological Site
  - ◊ *Update location sign*
  - ◊ Consider adding off-site directional signs guiding visitors to a parking area for the site
  - ◊ Consider restoring some of the mown area to native vegetation to reduce mowing needed

**Harrison County**

- Charles Larpenteur Family Burial Site
  - ◊ Consider adding site identification sign at entrance
  - ◊ Consider adding off-site directional signs guiding visitors to a parking area on the site
  - ◊ Consider adding interpretive signs
- Murray Hill Scenic Overlook
  - ◊ Consider improving visibility of site identification sign (relocate?)
  - ◊ Consider improvements to the entryway configuration for traffic safety
  - ◊ Consider adding picnic tables in shade near parking area
- Sawmill Hollow
  - ◊ *Add interpretive signs (trail or panel)*
  - ◊ *Add historic element (possible sawmill remnant)*
  - ◊ Consider improving access road drainage and surfacing
  - ◊ Consider adding off-site directional signs guiding visitors to the site
- Sioux Dam Fishing Access
  - ◊ Consider improving access road/parking area drainage and surfacing
  - ◊ Consider adding tree plantings to provide shading for parking area
- Willow Creek Recreation Area
  - ◊ Consider adding more off-site directional signs guiding visitors to the site

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**Pottawattamie County**

- Bayliss Park
  - ◊ Consider adding site identification sign at entrance
- General Dodge House & Museum
  - ◊ Review handicap parking and access to the house
- Hitchcock Nature Area
  - ◊ *Develop historic site with additional interpretive panels (possible Native American theme)*
- Lincoln Monument
  - ◊ Consider adding off-site directional signs guiding visitors to the site
  - ◊ Consider repairing sidewalk cracks and damage

- Pottawattamie County Squirrel Cage Jail
  - ◊ Consider adding off-site directional signs guiding visitors to a parking area for the site
- Railswest Museum & HO model Railroad
  - ◊ Consider adding off-site directional signs guiding visitors to the site
  - ◊ Consider improving parking by adding barriers and lot markings
  - ◊ Consider providing handicap accessible restrooms
  - ◊ Consider enhancing exterior by adding trees and shrubs
- Ruth Ann Dodge Black Angel Memorial
  - ◊ Consider adding off-site directional signs guiding visitors to a parking area for the site
  - ◊ Consider providing signs identifying the on-street parking area
- Scenic Overlook I-680
  - ◊ Consider providing shading for picnic tables with trees
  - ◊ Consider year-round access
- Stempel Wildfowl Collection
  - ◊ Consider adding off-site directional signs guiding visitors to a parking area for the site
  - ◊ Consider adding site identification sign at entrance
- Wabash Trace Trailhead - Council Bluffs
  - ◊ Consider adding off-site directional signs guiding visitors to the site
  - ◊ Consider restoring some of the mown area to native vegetation to reduce mowing needed

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**Mills County**

- Chief Waubonsie Historical Marker
  - ◊ *Add hiking trail to monument*
  - ◊ *Add parking area*
  - ◊ *Add interpretive signage (panel)*
  - ◊ Consider adding off-site directional signs guiding visitors to the site
  - ◊ Consider adding site identification sign at entrance

- Foothills Park
  - ◊ *Enhance/add more interpretive signs*
  - ◊ Consider adding more off-site directional signs guiding visitors to the park
  - ◊ Consider adding site identification sign at park entrance
  - ◊ Consider adding parking barriers to parking area
  - ◊ Consider adding tree plantings to provide shading for parking area
- Glenwood Lake Park & Mills County Historical Museum & Davies Amphitheater
  - ◊ Consider restoring some of mown area to native vegetation
  - ◊ Consider interpretive/education facility focused on Glenwood culture archaeology
- Mile Hill Lake
  - ◊ Consider adding parking barriers in parking area
  - ◊ Consider adding restrooms and trash cans to site
- Mormon Trail, Oregon Trail, and Dragoon Trail Historical Marker
  - ◊ Consider improving parking area
  - ◊ Consider restoring some of mown area to native vegetation
  - ◊ Consider adding vegetation-screening along fence line to limit view
- Pony Creek Park
  - ◊ Consider restoring some of the mown area to native vegetation to reduce mowing needed
- Salem Lutheran Church & Plummer Cemetery
  - ◊ *Add interpretive signage (panel - Early Settler theme & German heritage)*
  - ◊ Consider adding off-site directional signs guiding visitors to a parking area for the site
  - ◊ Consider adding site identification sign at entrance
  - ◊ Consider adding a small parking area
- Wabash Trace Trail Stop - Mineola
  - ◊ Consider adding off-site directional signs guiding visitors to the site
  - ◊ Consider adding site identification sign at entrance
- West Oak Forest
  - ◊ *Add hike-to scenic overlook*
  - ◊ Consider adding off-site directional signs guiding visitors to the site
  - ◊ Consider improvements to the entryway configuration for traffic safety

**Fremont County**

- Fremont County Historical Museum
  - ◊ Consider adding off-site directional signs guiding visitors to the museum
- O.S. Wing Wildlife Area
  - ◊ Consider improving parking area surfacing
- Pinky's Glen
  - ◊ *Add hiking trails*
  - ◊ *Add drive-up scenic overlook with interpretive signage*
  - ◊ Consider adding off-site directional signs guiding visitors to the site
  - ◊ Consider adding site identification sign at entrance
  - ◊ Consider improving entry drive drainage and surfacing
  - ◊ Consider increased maintenance to improve appearance of the site
- Riverton Wildlife Area
  - ◊ Consider adding site identification sign at entrance
- Todd House Museum
  - ◊ Consider adding off-site directional signs guiding visitors to a parking area for the site
- Waubonsie-Wa-Shawtee State Park
  - ◊ *Add interpretive historic panels - (Native American culture or Loess Hills forest ecosystem theme)*
  - ◊ Convert lodge to interpretive/education center
  - ◊ Develop trails to prairie ridges
  - ◊ Add bathroom/shower facilities

**Amenity Action #2**
Recommendations for amenity additions address deficiencies also identified through the research, evaluation and modeling activities. The location and number of proposed amenity additions considered need, geographic distribution and relevant development and management plans of state and county agencies. Proposed amenity additions include:

- Scenic overlooks
- Historic sites
- Picnic areas
- Restroom facilities
- Interpretive and educational sites
- Information centers

Amenity additions proposed for each county in the Corridor include:

**Plymouth County**

- Scenic overlook – Butcher Road area
- Historic site – several existing undeveloped sites to choose from
- Picnic area – Five Ridge Prairie area
- Interpretive/education site

**Woodbury County**

- Picnic area – Bronson area
- Scenic overlook – near Smithland area – possibly at Southwood Conservation Area
- Historic site – candidate site must be identified
- Restroom facility – Sergeant Bluff or Bronson areas
- Interpretive/education site – Bronson area; possibly in city park

**Monona County**

- Scenic overlook – near Loess Hills Wildlife Area
- Historic site – near Loess Hills Wildlife area; possibly Areola town site
- Historic site – near Preparation Canyon State Park; several known sites in and around park
- Interpretive/education site – near Preparation Canyon State Park Restroom facility – Castana

**Harrison County**

- Interpretive/education site – Sawmill Hollow area
- Scenic overlook – near Magnolia; possibly in one of several cemeteries on L23
- Historic site — undeveloped site near Calhoun or Sawmill Hollow
- Welcome/information center (unmanned) in Rest Area at I-29 exit south of Little Sioux

**Pottawattamie County**

- Restroom facility – McClelland
- Restroom facility – near Hwy 370 and Hwy 275 juncture
- Historic site – near Hitchcock Nature Area
- Historic site – undeveloped site near Iowa School for the Deaf
- Scenic overlook – near Hwy 370 and Hwy 275 juncture

**Mills County**

- Scenic overlook – near Mile Hill Lake
- Pay phone – Mineola
- Interpretive/education facility on Glenwood culture

**Fremont County**

- Hiking trail – Pinky's Glen or Forney's Lake
- Scenic overlook – near Pinky's Glen/Tabor area
- Restroom facility – Thurman
- Historic site – undeveloped site at Waubonsie State Park

### *Concept Plans for Selected Amenities*

To illustrate features at three common amenities, concept plans were developed for:

- Roadside Pull-Off for Developed Historic or Cultural Site located on a gravel county road and includes an interpretive panel, historic or cultural marker and walkways;
- Roadside Pull-Off for Undeveloped Historic or Cultural Site located on a county highway and includes an interpretive panel; and
- Scenic Overlook Site located on a state highway and includes a picnic area, interpretive panels, observation platform, walkways and trails.

The concept plans provide guidance for the design, location and construction of components commonly located at these three types of amenities. Actual locations in the Scenic Byway Corridor were used to develop the concept plans.

***Maps, Plans, and Tables***

Recommended Site Improvements - Map

Proposed Amenity Additions - Map

Concept Plans for Selected Amenities - Plans and Tables

Additional Cultural and Historic Sites - Table

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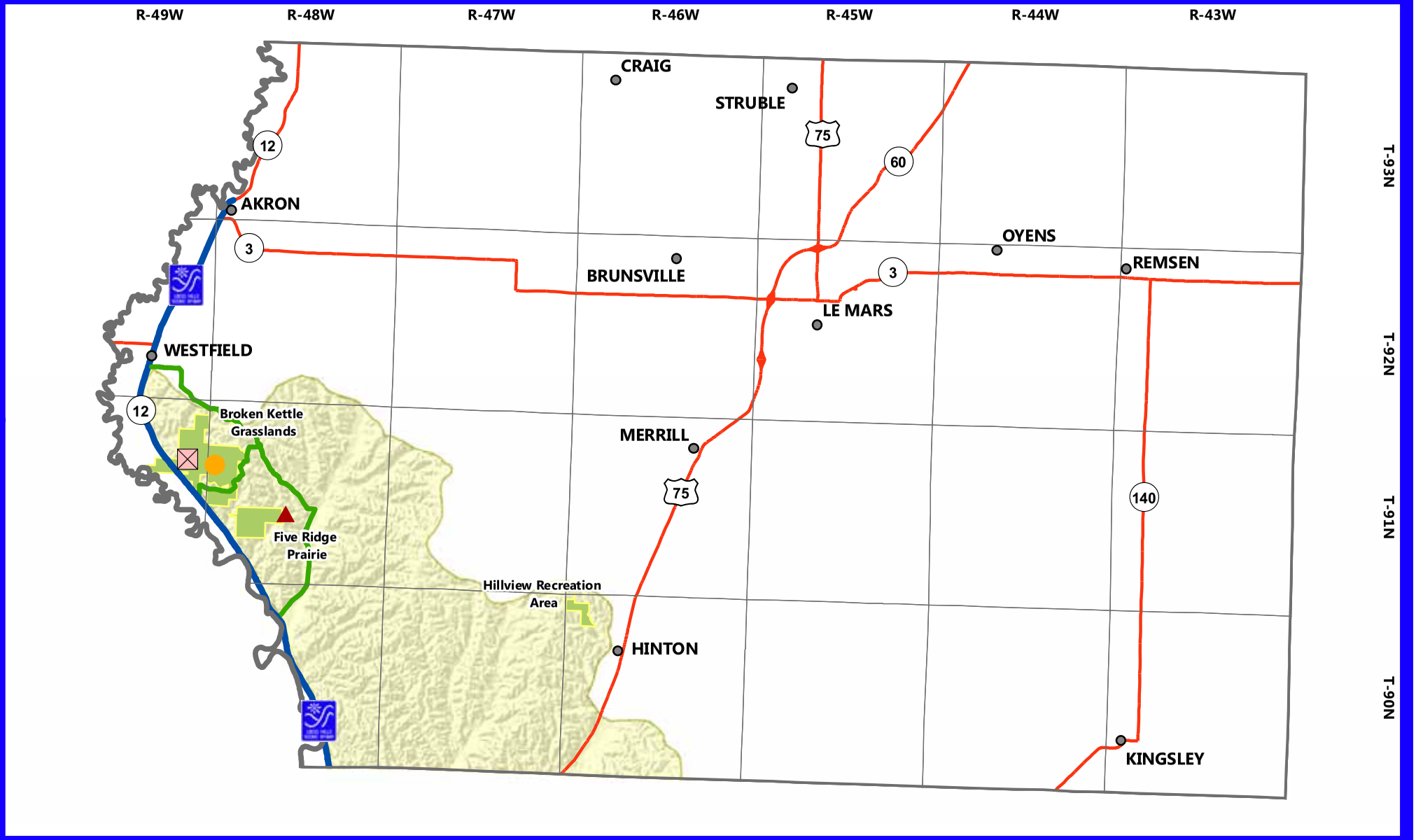
# Recommended Site Improvements

## Plymouth County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department




Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Highways
Recreational Area
Interpretive Panel
Picnic Area
Scenic Overlook

0 1.25 2.5 5 7.5 Miles

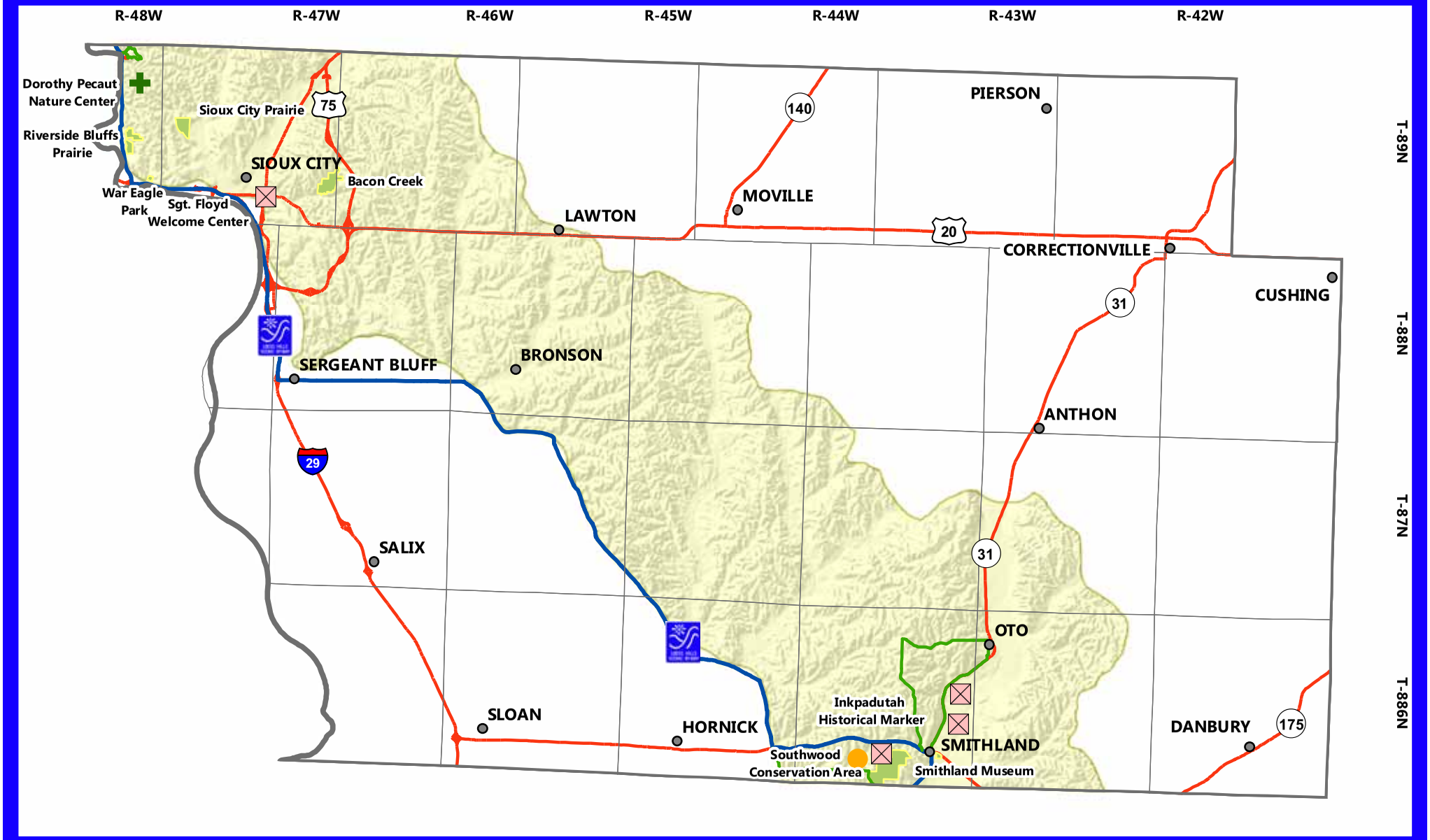
N W E S

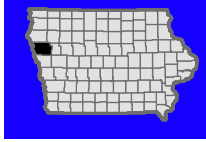
# Recommended Site Improvements

## Woodbury County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Highways
Recreational Area
Hiking
Interpretive Panel
Scenic Overlook

0 1.25 2.5 5 7.5 Miles

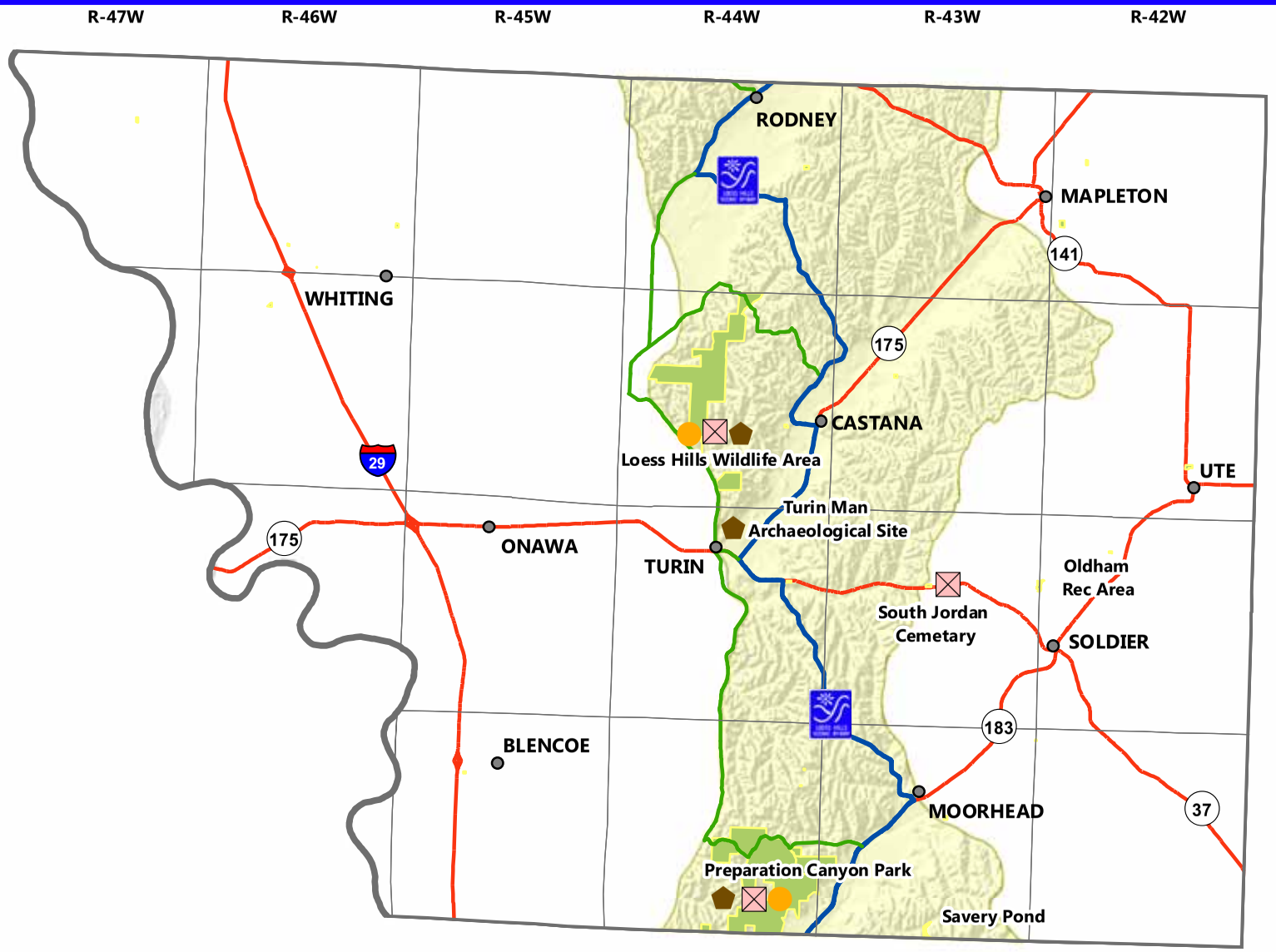
N W E S

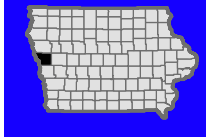
# Recommended Site Improvements

## Monona County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Highways
Recreation Area
Historic Site
Interpretive Panel
Location Sign
Picnic Area
Scenic Overlook

0 1.25 2.5 5 7.5 Miles

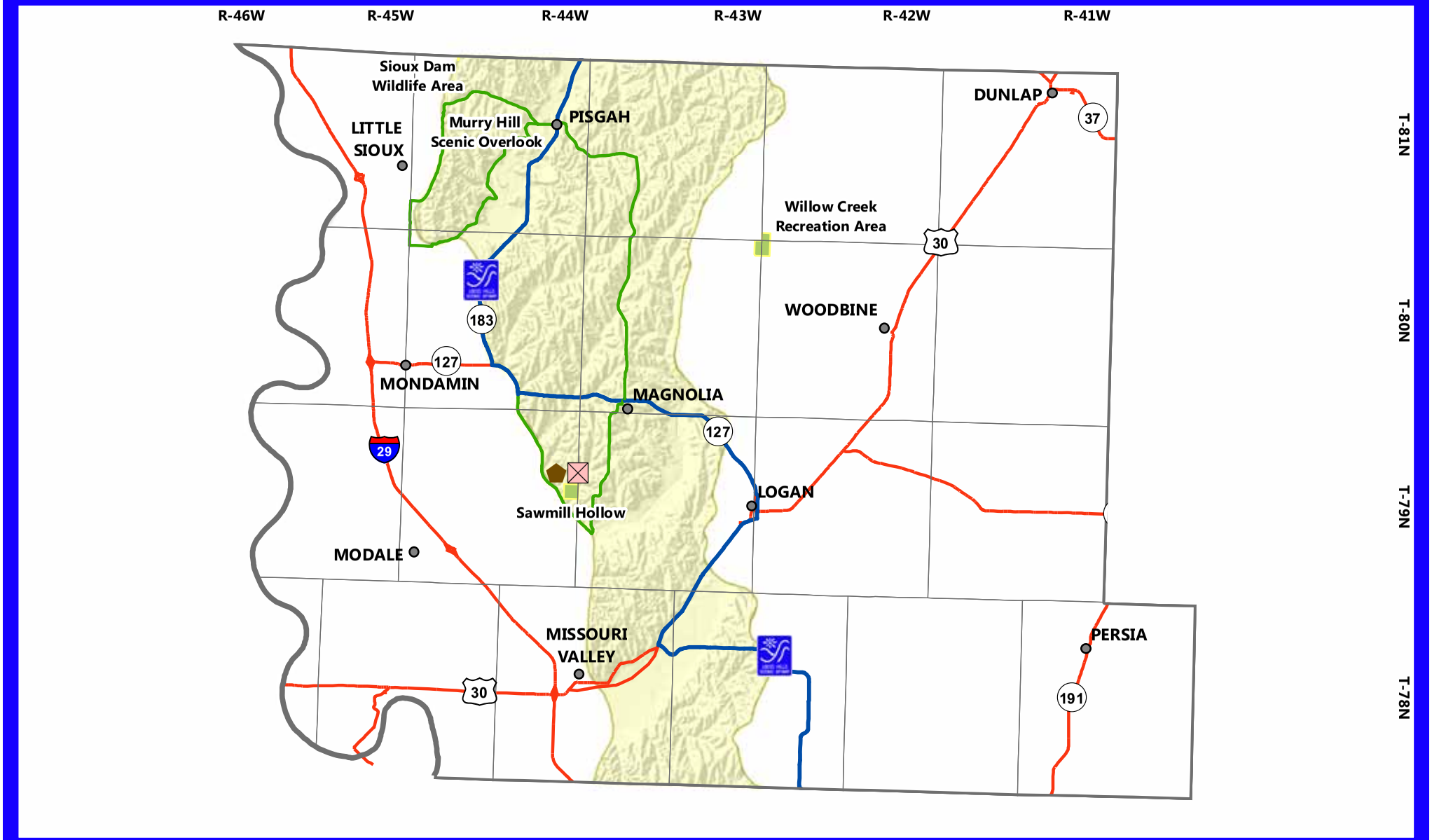
N
W E
S

# Recommended Site Improvements

## Harrison County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department

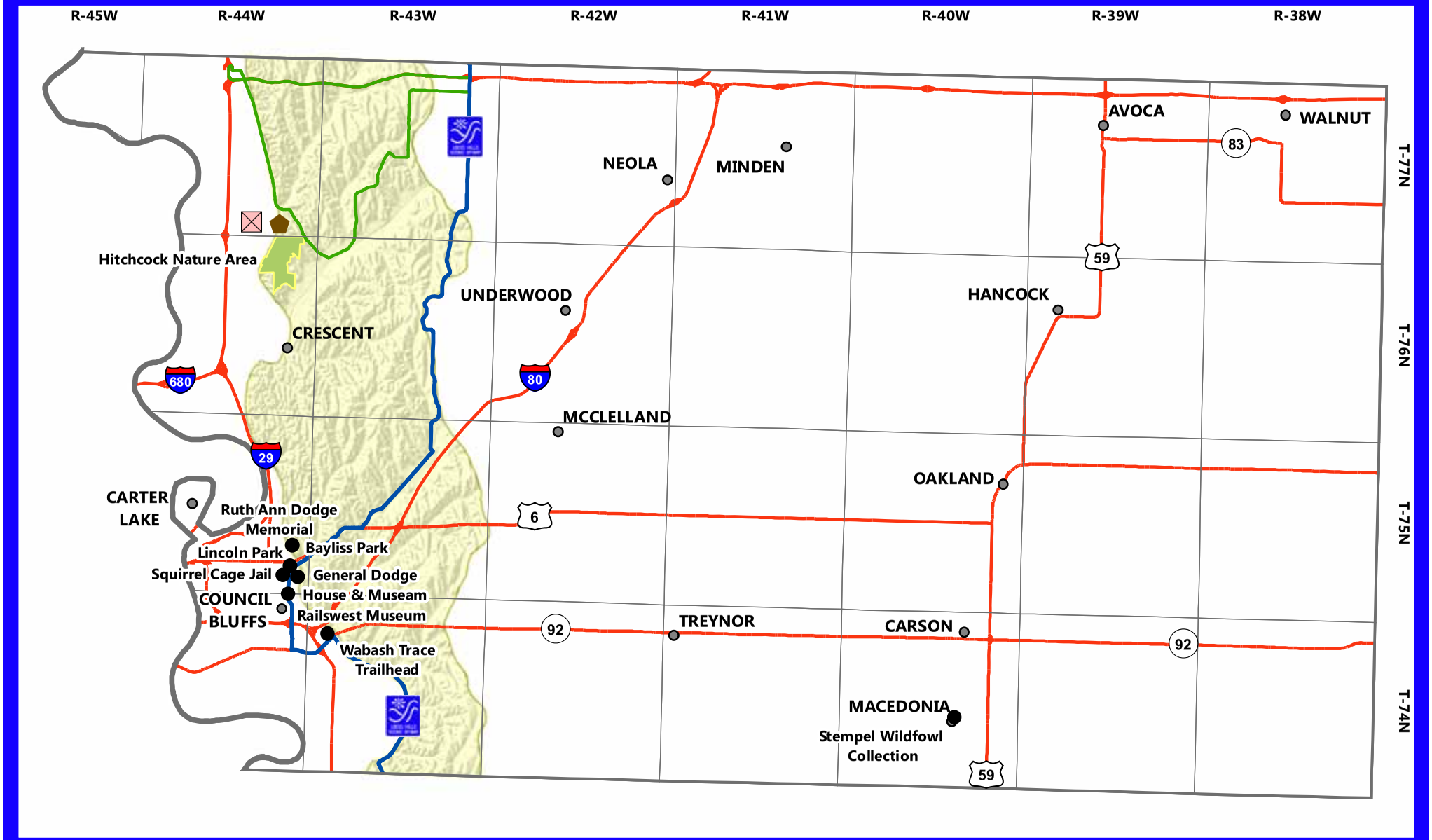


# Recommended Site Improvements

## Pottawattamie County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department

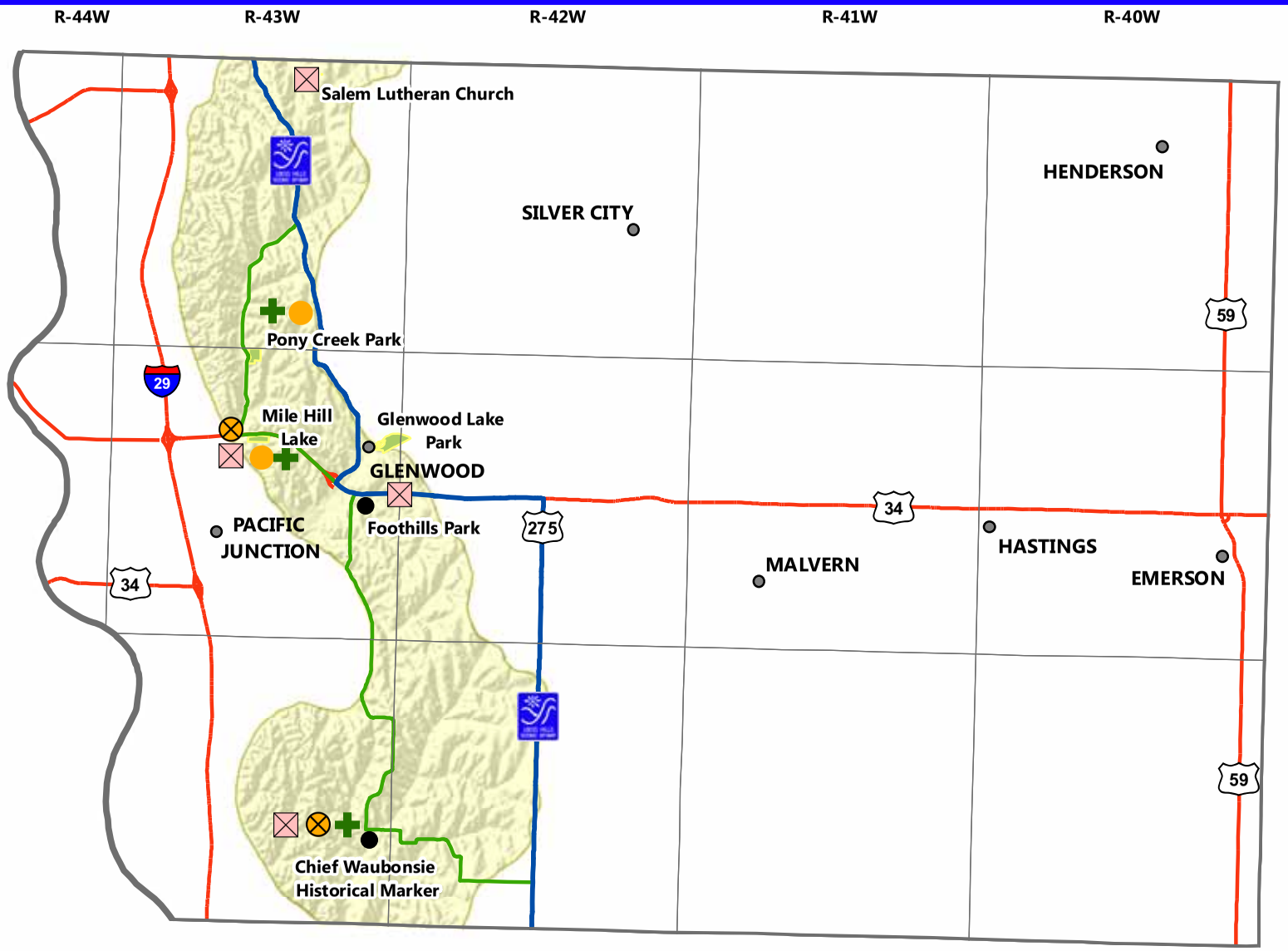


# Recommended Site Improvements

## Mills County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department




Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Highways
Recreational Area
Facility Parking
Hiking
Interpretive Panel
Scenic Overlook

0 1 2 4 6 Miles

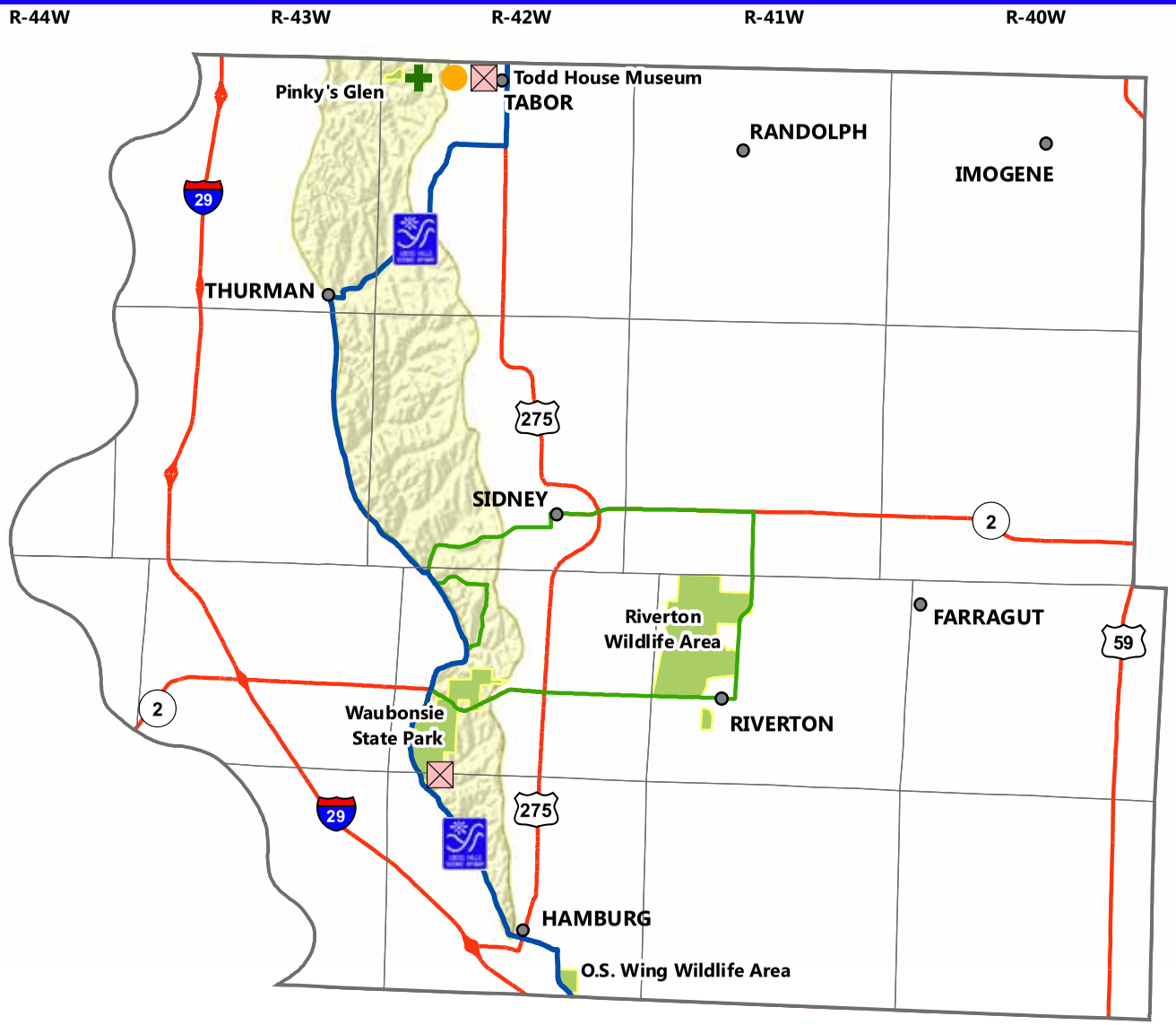
N W E S

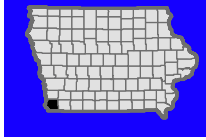
# Recommended Site Improvements

## Fremont County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Highways
Recreation Area
Hiking
Interpretive Panel
Scenic Overlook

0 1.25 2.5 5 7.5 Miles

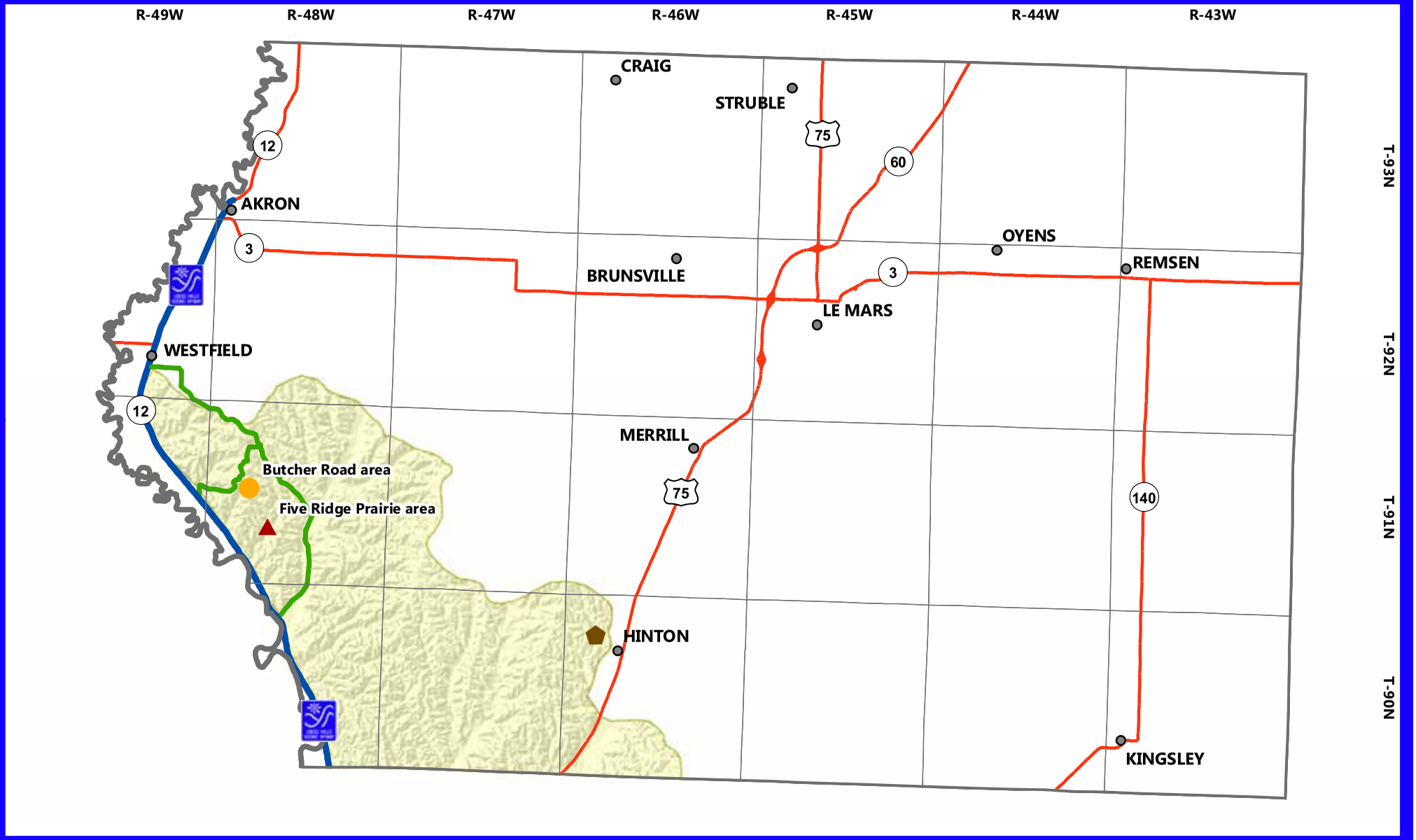
N W E S

# Proposed Amenity Additions

## Plymouth County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department

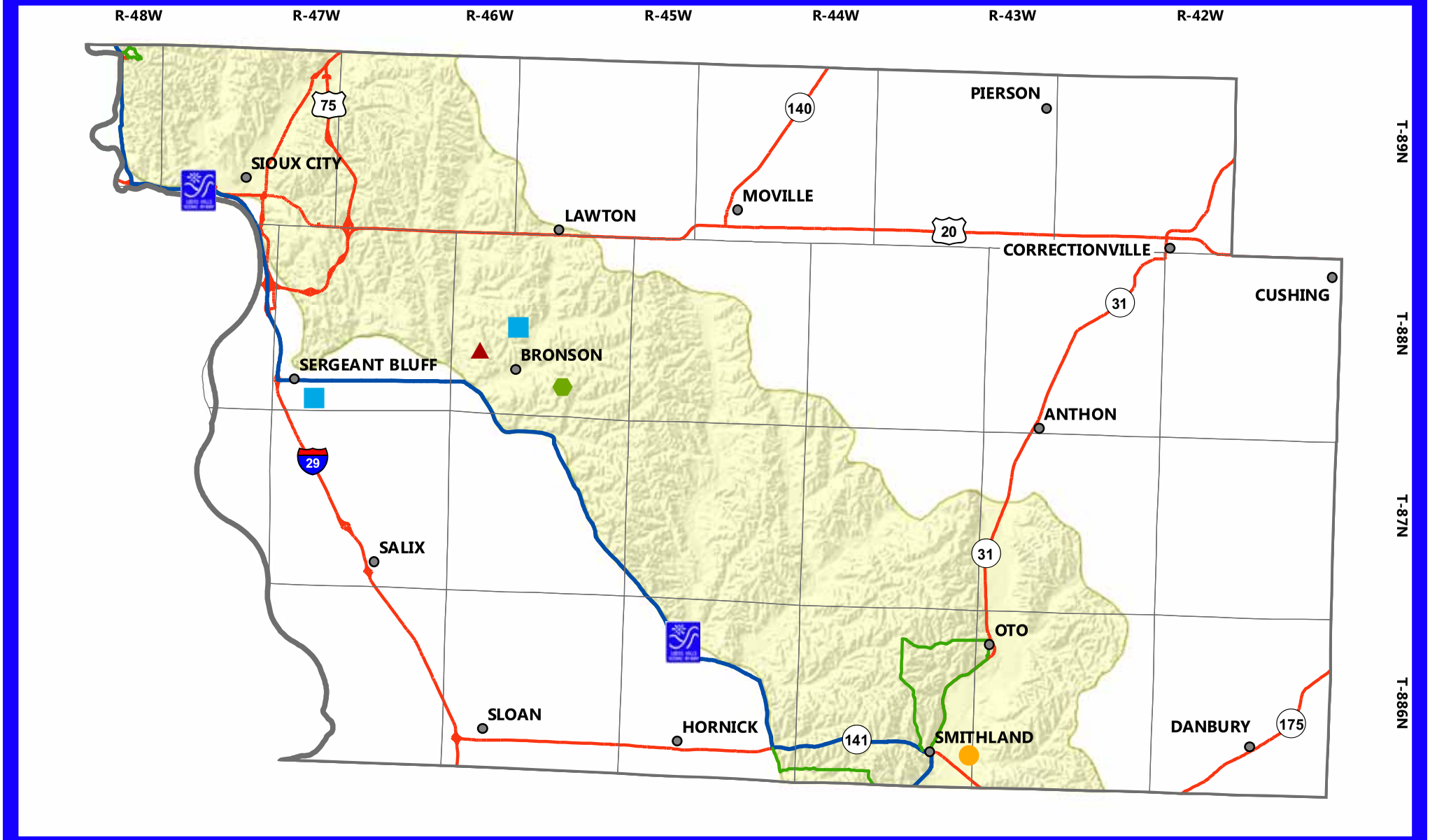


# Proposed Amenity Additions

## Woodbury County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department




Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Highways
Historic Site
Interpretive/Education Site
Picnic Area
Restroom Facility
Scenic Overlook
Welcome Centers

0 1.25 2.5 5 7.5 Miles

N W E S

# Proposed Amenity Additions

## Monona County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department

Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Highways
Historic Site
Interpretive/Education Site
Picnic Area
Restroom Facility
Scenic Overlook
Welcome Centers

0 1.25 2.5 5 7.5 Miles

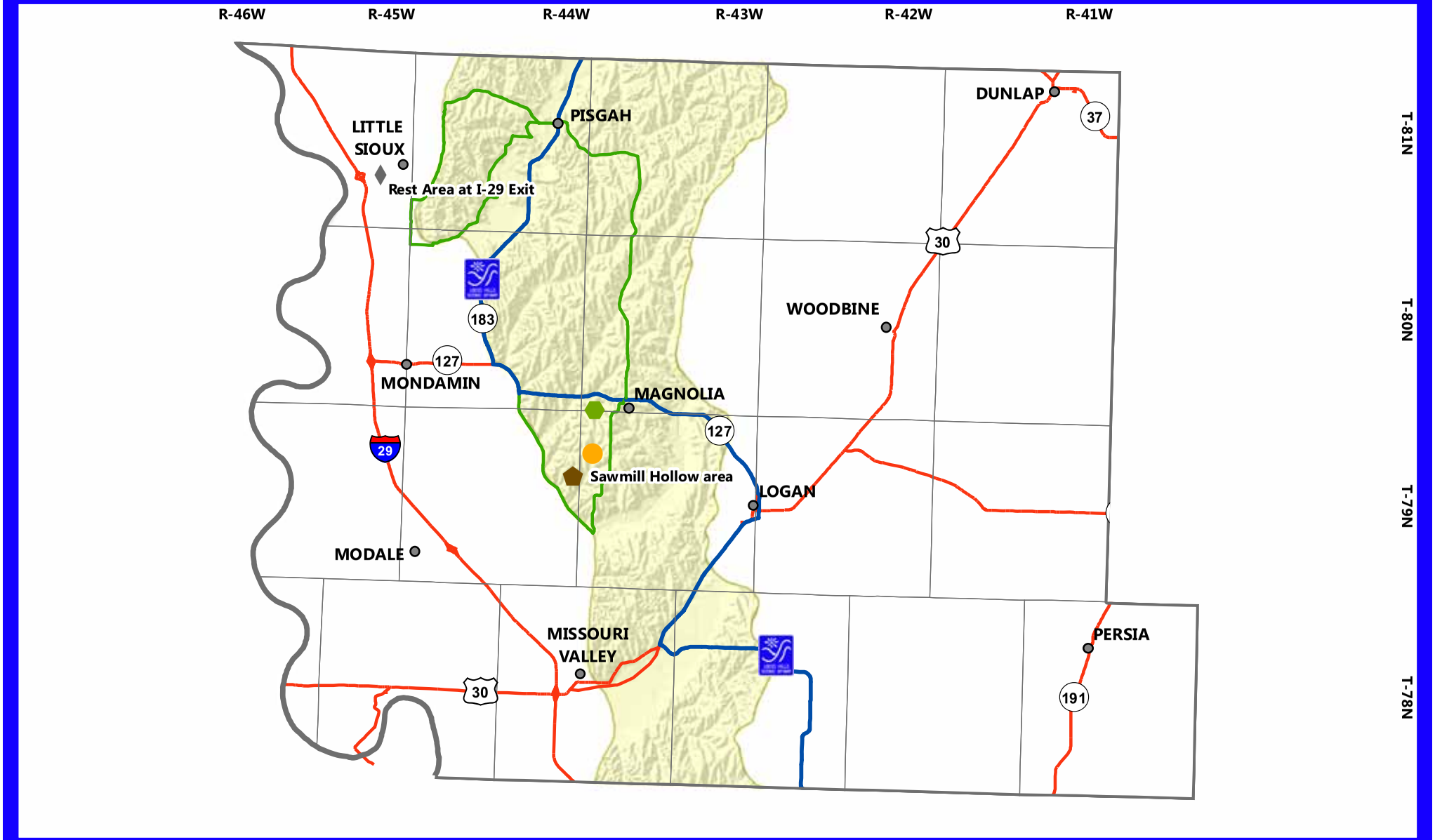
N W E S

# Proposed Amenity Additions

## Harrison County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department




Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Highways
Historic Site
Interpretive/Education Site
Picnic Area
Restroom Facility
Scenic Overlook
Welcome Centers

0 1.25 2.5 5 7.5 Miles

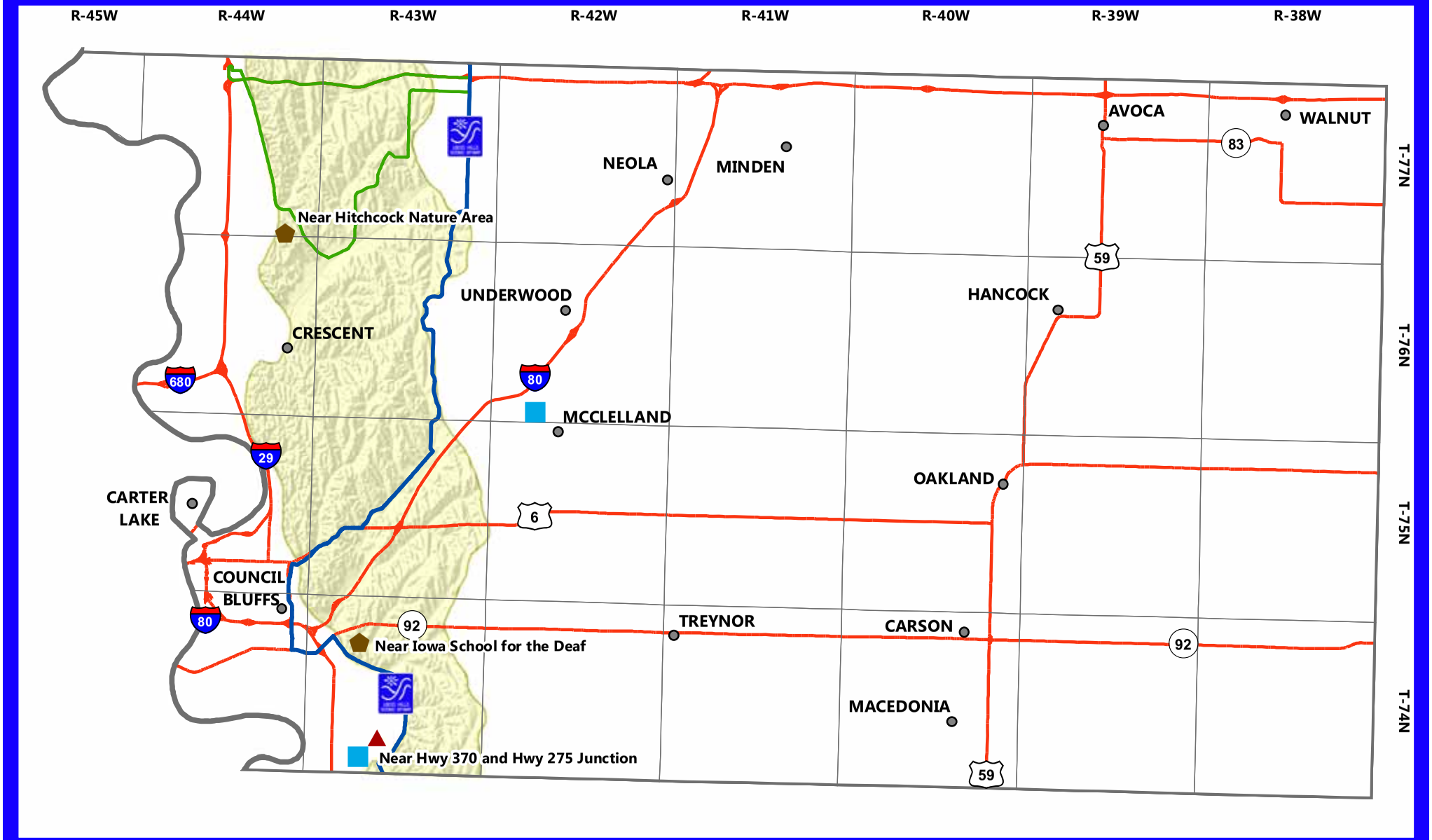
N W E S

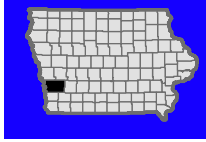
# Proposed Amenity Additions

## Pottawattamie County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Highways
Historic Site
Interpretive/Education Site
Picnic Area
Restroom Facility
Scenic Overlook
Welcome Centers

0 1.25 2.5 5 7.5 Miles

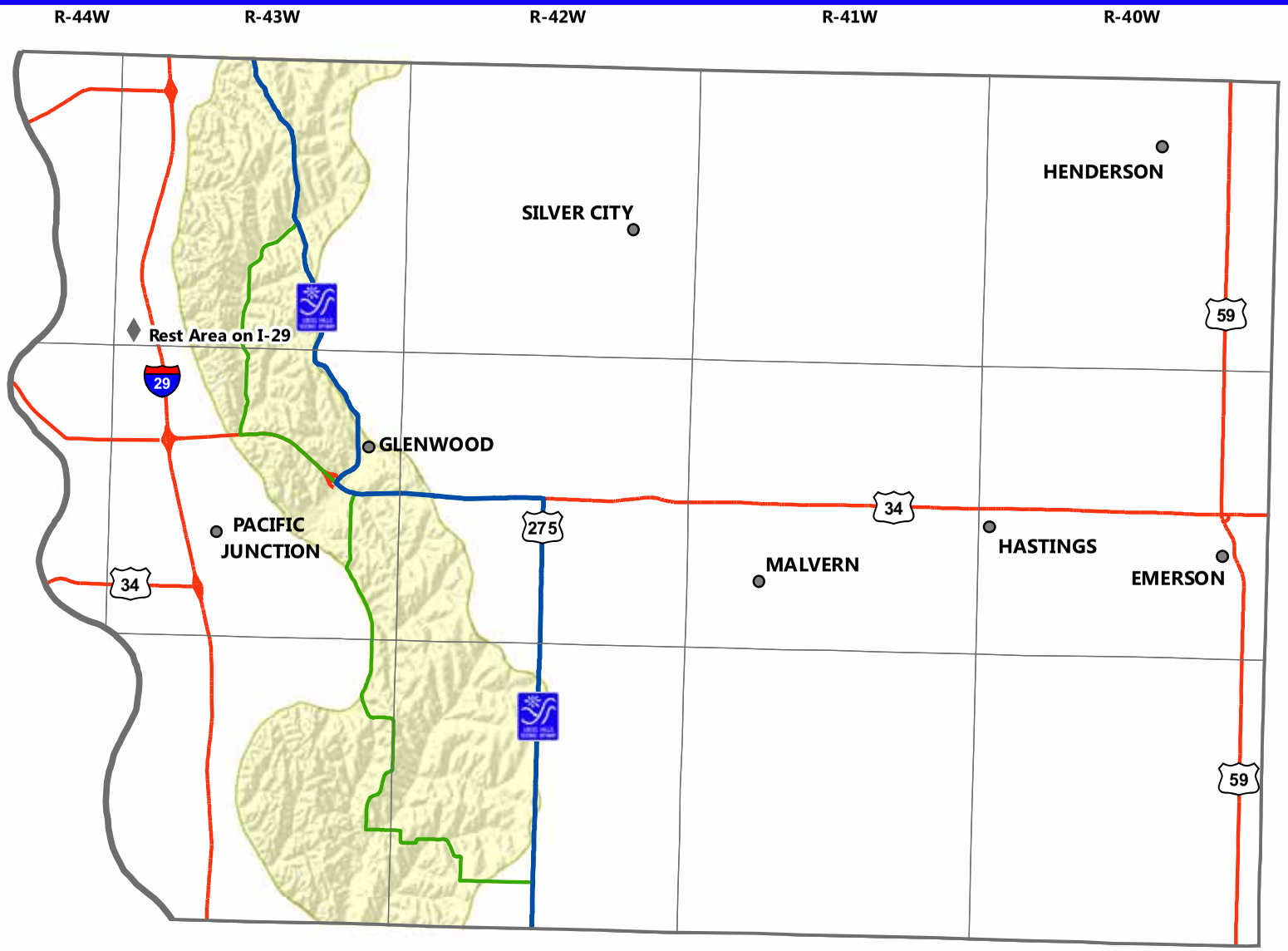
N W E S

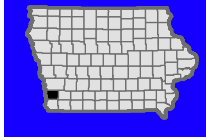
# Proposed Amenity Additions

## Mills County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Highways
Historic Site
Interpretive/Education Site
Picnic Area
Restroom Facility
Scenic Overlook
Welcome Centers

0 1 2 4 6 Miles

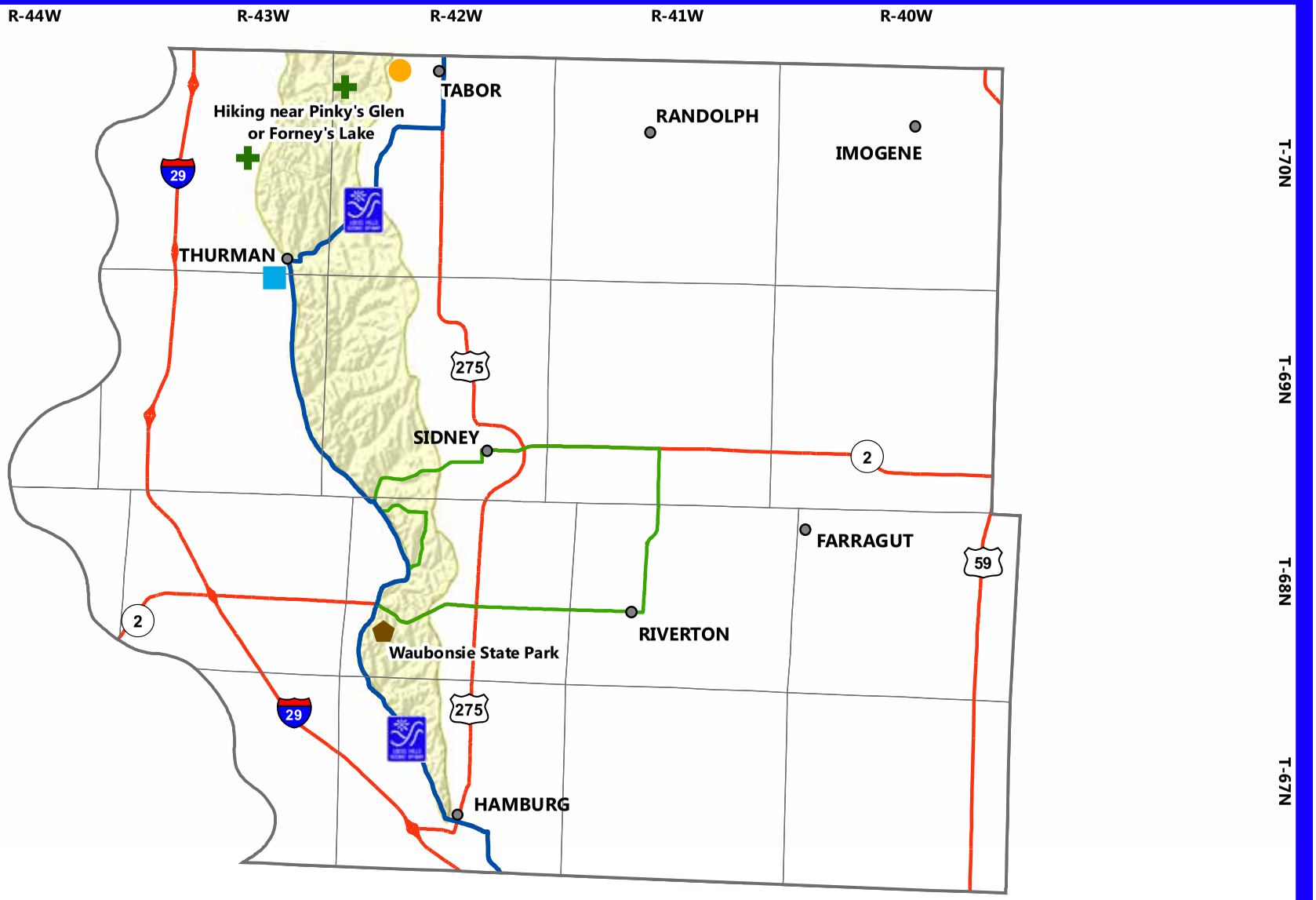
N W E S

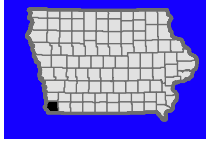
# Proposed Amenity Additions

## Fremont County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Highways
Historic Site
Interpretive/Education Site
Hiking
Restroom Facility
Scenic Overlook
Welcome Centers

0 1.25 2.5 5 7.5 Miles

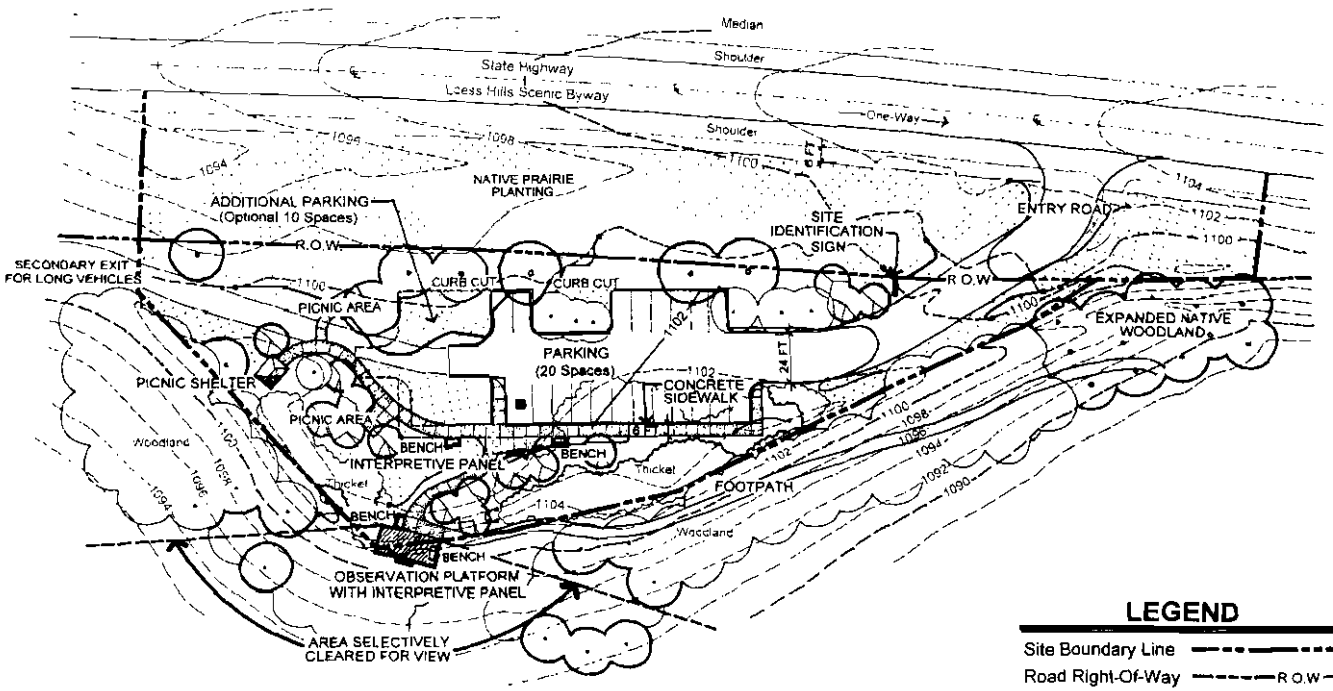
N W E S

**TRAILS**

- Footpath
- 6 Ft. – Paved Walkway

**NOTES:**

- Refer to Iowa Department of Transportation's Design Manual - Chapter 6 Geometric Design for proper sight distances required
- Allow for 6 foot minimum width mown area or short-grass (ie Buffalograss) along shoulder of roadway




## LEGEND

- Site Boundary Line
- Road Right-Of-Way — R.O.W.
- Existing Contour — 1104
- Proposed Contour — 1104
- Existing Tree
- Proposed Understory Tree
- Proposed Overstory Tree

NORTH

30 0 30 60 90

SCALE

## TYPICAL MATERIALS & QUANTITIES

| ITEM | QUANTITY/ UNITS | UNIT COST | TOTAL COST |
|---|---|---|---|
| **Project Data:** | | | |
| • Area of Site (to road edge) | 1.63 ac | | |
| • Area of Excavation | 0.68 ac | | |
| • Area of Parking & Entry Drive | 1,264.8 syd | | |
| - Concrete | | | |
| - Asphalt | | | |
| - Gravel | | | |
| • Curbing (Parking Area) (Curbs, Parking Barriers) | 440 lf | | |
| • Area of Optional Parking | 313.9 syd. | | |
| • Total Area Parking/Drive And Optional Parking Area | 1,578.7 syd. | | |
| • Paved Walkway -6' width (Concrete, Asphalt) | 410 lf. | | |
| • Footpath - 6' width | 340 lf | | |
| • Native Prairie Seeding Area | 0.70 ac | | |
| **Earthwork Data:** | | | |
| • Cut Volume | 432.2 cyd. | | |
| • Fill Volume | 432.2 cyd. | | |
| • Topsoil Volume Placed | 293.7 cyd. | | |
| **Site Amenities:** | | | |
| • Interpretive Panel | 2 | | |
| • Entry Identification Sign | 1 | | |
| • Picnic Shelter with 10' x 12' Concrete Pad | 1 | | |
| • Picnic Table with 10' x 12' Concrete Pad | 2 | | |
| • 6' Bench | 4 | | |
| • Ornamental Tree | 15 | | |
| • Overstory Tree | 6 | | |
| • Wooden Observation Deck (15' x 30') | 450 sf | | |

**NOTE:**

- Place topsoil at 6" minimum depth.
- Distribute excess cut volume in sculptural mounding in front of parking area to screen from highway, or remove from site

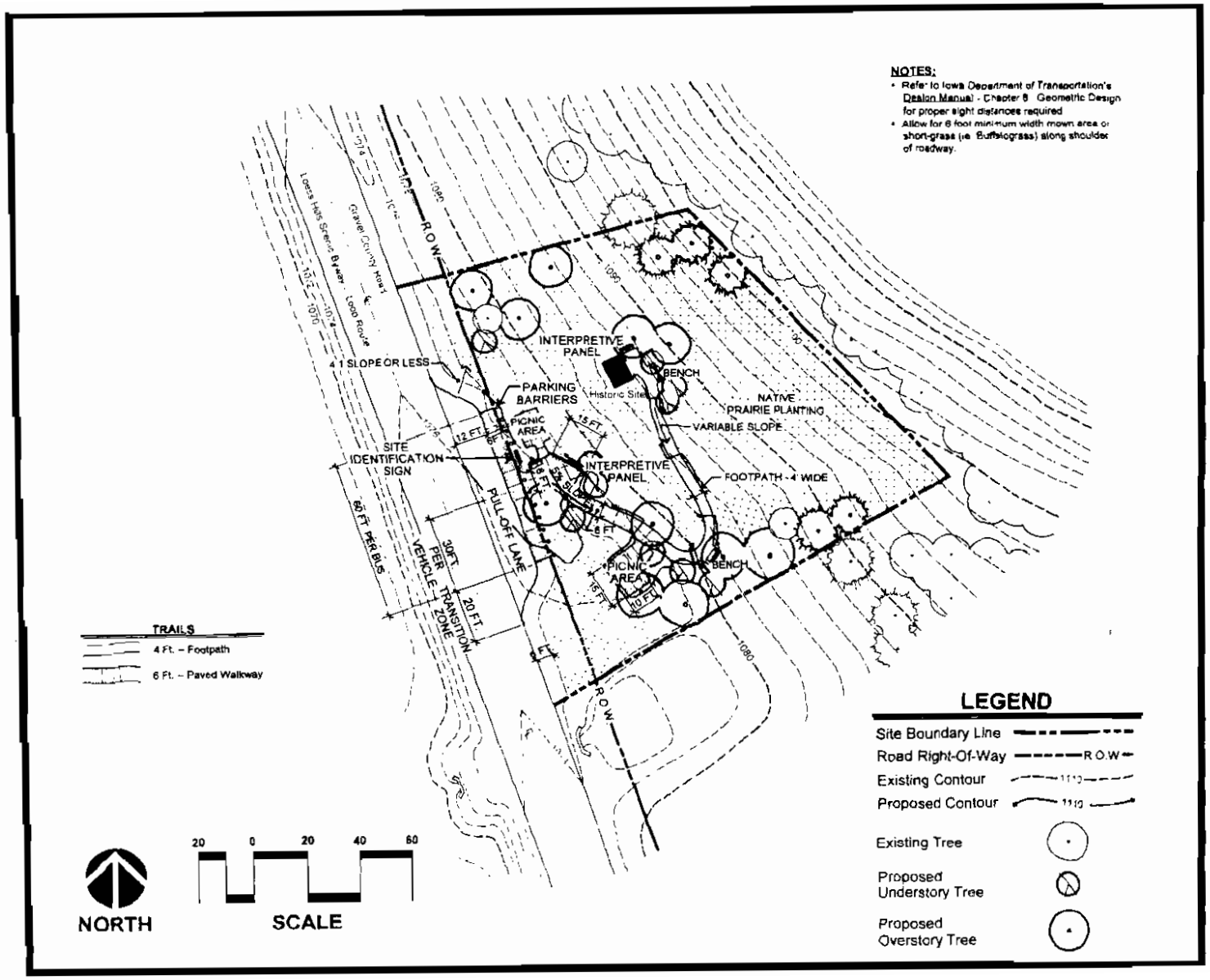
**Abbreviations:**

ac -- acres
cyd – cubic yards
lf – linear feet
sf – square feet
syd. – square yards

# SCENIC OVERLOOK SITE


**Prepared By:**
**GOLDEN HILLS RC&D**
**Oakland, Iowa**


LOESS HILLS SCENIC BYWAY




## TYPICAL MATERIALS & QUANTITIES

| ITEM | QUANTITY/ UNITS | UNIT COST | TOTAL COST |
|---|---|---|---|
| **Project Data:** | | | |
| • Area of Site (to road edge) | 0.49 ac | | |
| • Area of Excavation | 0.12 ac | | |
| • Area of Pull-off Lane | 107.8 syd | | |
| - Concrete | | | |
| - Asphalt | | | |
| - Gravel | | | |
| • Parking Barrier | 60 lf | | |
| • Paved Walkway - 8' width (Concrete Asphalt) | 150 lf | | |
| • Footpath - 4' width | 120 lf | | |
| • Native Prairie Seeding Area | 0.30 ac | | |
| **Earthwork Data:** | | | |
| • Cut Volume | 92.9 cyd | | |
| • Fill Volume | 92.9 cyd | | |
| • Topsoil Volume Placed | 53.2 cyd | | |
| **Site Amenities:** | | | |
| • Site Identification Sign | 1 | | |
| • Interpretive Panel | 2 | | |
| • Picnic Table with 10'x15' Concrete Pad | 2 | | |
| • 6' Bench | 3 | | |
| • Understory Tree | 10 | | |
| • Overstory Tree | 11 | | |
| • Evergreen Tree | 5 | | |

NOTE:
- Place topsoil at 6" minimum depth
- Distribute excess cut volume in sculptural mounding in front of Pull-off area, or remove from site

**Abbreviations**
ac. – acres
cyd. – cubic yards
lin. – linear feet
sf. – square feet
syd. – square yards

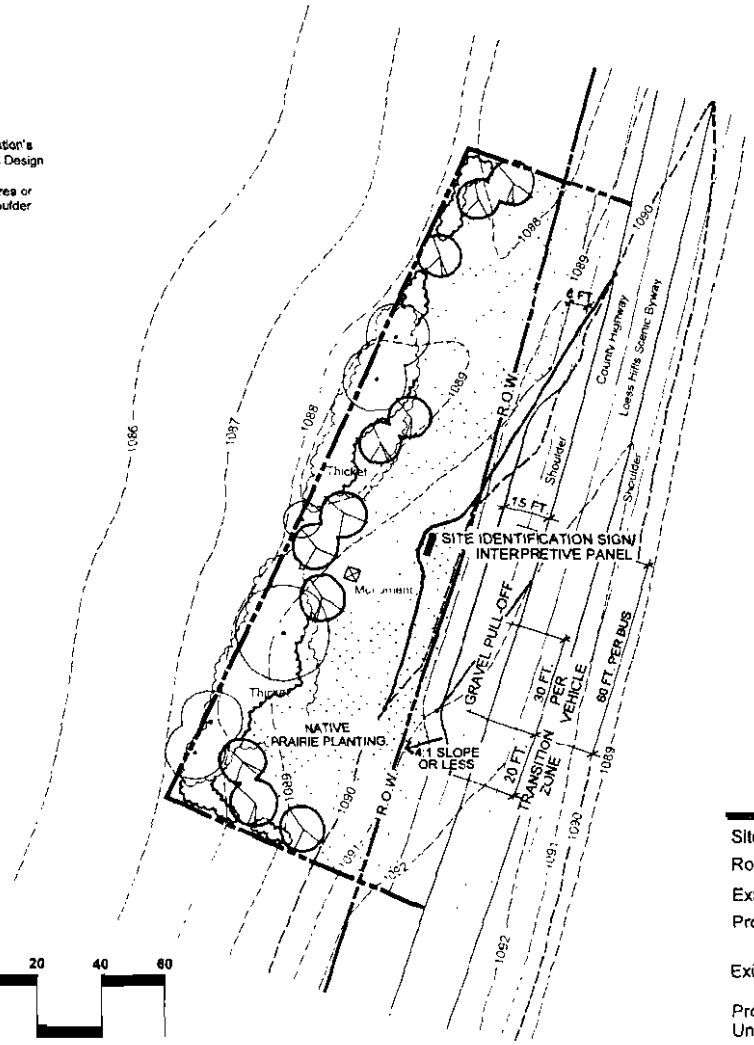
# DEVELOPED HISTORIC OR CULTURAL SITE

Prepared By:
GOLDEN HILLS RC&D
Oakland, Iowa

LOESS HILLS SCENIC BYWAY

**NOTES:**

- Refer to Iowa Department of Transportation's Design Manual - Chapter 6: Geometric Design for proper sight distances required.
- Allow for 6 foot minimum width mown area or short-grass (ie. Buffalograss) along shoulder of roadway.




NORTH

20 0 20 40 60

SCALE

## LEGEND

- Site Boundary Line
- Road Right-Of-Way — R.O.W.
- Existing Contour — 1088
- Proposed Contour — 1090
- Existing Tree
- Proposed Understory Tree
- Proposed Overstory Tree

## TYPICAL MATERIALS & QUANTITIES

| ITEM | QUANTITY/ UNITS | UNIT COST | TOTAL COST |
|---|---|---|---|
| **Project Data:** | | | |
| Area of Site (to road edge) | 0.37 ac | | |
| Area of Excavation | 0.09 ac. | | |
| Area of Pull-off Lane | 120.2 syd | | |
| • Concrete | | | |
| • Asphalt | | | |
| • Gravel | | | |
| Native Prairie Seeding Area | 0.26 ac | | |
| **Earthwork Data:** | | | |
| Cut Volume | 51.0 cyd | | |
| Fill Volume | 51.0 cyd. | | |
| Topsoil Volume Placed | 74.0 cyd | | |
| **Site Amenities:** | | | |
| • Site Identification / Interpretive Panel | 1 | | |
| • Understory Tree | 11 | | |

**NOTE:**

- Place topsoil at 6" minimum depth
- Distribute excess cut volume in sculptural mounding in front of parking area to screen from highway, or remove from site

**Abbreviations:**

ac – acres
cyd. – cubic yards
lin. – linear feet
sf – square feet
syd – square yards

# UNDEVELOPED HISTORIC OR CULTURAL SITE


**Prepared By:**
**GOLDEN HILLS RC&D**
**Oakland, Iowa**


LOESS HILLS SCENIC BYWAY

## Roadside Pull-Off for Developed Historic or Cultural Site

Project Data:

- Area of Site (to road edge)
- Area of Excavation
- Pull-Off Area
- Area of Sidewalk (concrete)
- Area of Walkway (4 ft. width)
- Seeding Area (native warm season grasses)

Earthwork Summary:

- Subsoil Cut Volume
- Subsoil Fill Volume
- Subsoil Fill Volume (+10%)
- Topsoil Volume Stripped (6" depth)
- Topsoil Volume Replaced (6" depth)
- Topsoil Borrowed and Spread
- Excess Topsoil to be Distributed
- Excess Subsoil Cut to be Distributed

**Note:** Replace topsoil at 9" depth to eliminate excess topsoil volume.

Other Items:

- Site Identification Sign
- Interpretive Panel
- Picnic Table
- 6 ft. Bench
- Understory Trees
- Overstory Trees
- Evergreen Trees
- Parking Barrier (pull-off area)

## Roadside Pull-Off for Undeveloped Historic or Cultural Site

Project Data:

- Area of Site (to road edge)
- Area of Excavation
- Pull-Off Area
- Seeding Area (native warm season grasses)

Earthwork Summary:

- Subsoil Cut Volume
- Subsoil Fill Volume
- Subsoil Fill Volume (+10%)
- Topsoil Volume Stripped (6" depth)
- Topsoil Volume Replaced (6" depth)
- Topsoil Borrowed and Spread
- Excess Topsoil to be Distributed
- Excess Subsoil Cut to be Distributed

**Note:** Replace topsoil at 8" depth to eliminate excess topsoil volume

Other Items:

- Site Identification/Interpretive Panel
- Understory Trees

**Scenic Overlook Site**

Project Data

- Area of Site (to road edge)
- Area of Excavation
- Area of Parking and Entry Drive
- Area of Extra Optional Parking
- Total Area of Parking/Drive with Optional Area
- Area of Walkways (6 ft. width)
- Seeding Area (native warm season grasses)

Earthwork Summary:

- Subsoil Cut Volume
- Subsoil Fill Volume
- Subsoil Fill Volume (+10%)
- Topsoil Volume Stripped (6" depth)
- Topsoil Volume Replaced (6" depth)
- Topsoil Borrowed and Spread
- Excess Topsoil to be Distributed
- Excess Subsoil Cut to be Distributed

**Note:** Replace topsoil at 11" depth to eliminate excess topsoil volume. Excess subsoil cut volume to be distributed in sculptural mounding in front of parking area to screen from highway.

Other Items:

- Interpretive Panel
- Entry Identification Sign
- 10 x 12' Picnic Shelter
- Picnic Table
- 10' x 12' Concrete Pad (picnic shelter)
- 6' Bench
- Ornamental Trees
- Overstory Trees
- 15' x 30' Wooden Observation Deck
- Walkway (6' width; minimum amount of hard surfaced walkway)
- Barrier Curbing (parking area)

## Additional Cultural and Historic Sites

### Plymouth County

**Rainbow Site** - native American site found in Hillview Recreation Area when excavating to build a pond in 1977, artifacts of Woodland Culture Indians are now located in Plymouth County Historical Museum in LeMars.

### Woodbury County

**Theophile Bruguier Log Cabin** - located in Riverside Park in Sioux City, built in 1849 by French settler Bruguier served as an Indian trading post. Bruguier was married to two of Chief War Eagle's daughters.

### Harrison County

**Smith Lake** - battle site where Sioux and Omaha devastated the Pottawattamie in 1846. Referred as "blood lake" because of the awful death toll of this battle, native Americans also believed it to be the place of incarceration of the "evil spirit".

**Harrison/Monona Drainage Ditch** - built in 1909, it made farming possible in this area, followed a washout area from the 1880 flood.

**Murray Hill** - named after settler Michael Murray, old country schoolhouse once located at base of the hill on the west side, foundation can still be found. Cemetery site also located in that area.

**Fountainbleu Town Site** - fur trading settlement founded by Charles Larpenteur in 1855 on the banks of the Little Sioux River with a group of Mormon pioneers who left the migration to Utah.

**Village of Calhoun** - first village to be established in the county - 1848, founded by person believed to be first white settler in the county, Daniel Brown. Located near west bank of Willow River it prospered in the late 1860s and had a Post Office 1855-1900.

**St. John's** - small town south of present day Missouri Valley on southeast side of Boyer River, founded 1857. Once had hotel, post office (1858-71), general store, hardware store and other shops. Primary town in the county prior to railroad and establishment of Missouri Valley.

## Additional Cultural and Historic Sites

### Harrison County

**Indian Kiln, Fireplace** - in a field north of the cemetery north of Calhoun town site a kiln or fireplace was unearthed which was believed to be from an early Indian settlement. No site remains.

**Mount Pisgah** - was one of the 'Stakes of Zion' or places where Mormons stopped to raise a crop or two before continuing on westward. 1847-1852 Mormons controlled the entire county.

**Cincinnati** - village platted in 1857 in Sec. 22 of Cincinnati Township on the banks of the Missouri River. Located approximately 1 mile south of California Junction and the original site of the Yazoo post office. Must be within boundaries of DeSoto National Wildlife Refuge

**Parish City** - platted in 1858 in Sec. 21 and 22 of Cincinnati Township, adjacent to and rival of the town of Cincinnati.

### Pottawattamie County

**Mormon Battalion Mustering Grounds & Grand Encampment** - historical markers on campus of Iowa School for the Deaf in Council Bluffs. Grand Encampment was area where Mormon pioneers heading for Utah stopped and rested before crossing the Missouri River and continued westward. From Highways 92 and 66 it spread out nearly nine miles back east toward Treynor.

**Block House** - built by U.S. Dragoons in 1837 to protect newly arrived Pottawattamie, Ottawa and Chippewa from the local Sac and Dakota Sioux Indians. Served as Belgian Jesuit Mission - St. Joseph - St. Mary Mission & School to Indians 1838-1853 headed by Father Felix Verrydt and also served as Blockhouse Branch of the Church of Jesus Christ of Latter Day Saints 1846-1853. Two markers on the site facing E. Pierce St. between Grace St. and Union St. in Council Bluffs.

**Fort Croghan** - established in April 1842 near Lake Manawa by the U.S. Dragoons to attempt to stop whiskey trade moving illegal loads of liquor by boat on the Missouri River. Also said to be built for the protection of the Pottawattamie Indians who were under threat of attack by the Sioux. Abandoned in October 1843 due to flooding of the Missouri River, no remnants remain.

## Additional Cultural and Historic Sites

### Pottawattamie County

**Hard Heart Trading Post Site** - trading post established by Ioway Chief Wang-e-waha just east of Big Lake (approximately 1819-1832). Located near springs east of Big Lake Park, east of Mynster Springs Rd., one block south of Big Lake Rd. railroad underpass.

**Captain Billy Caldwell's Village** - last Chief of local Pottawattamie tribe had a village located just south of Fairmont Park on Indian Creek in Council Bluffs. Population of 450 Indians.

**Digger's Mill** - built 1848 by Madison Digger, originally a grist mill with a saw added later, powered by waters diverted from Indian Creek along what is now Washington Ave. in Council Bluffs, dam near Benton Ave.

**Cartersville** - first school in county established in 1847, had a population over 200 in 1851; located approximately 3 miles east of Kanesville.

**Lone Tree Ferry** - established in 1849 just north of current site of 1840 bridge across from Davenport St. in Omaha by the Council Bluffs & Nebraska Ferry Co. William D. Brown, a former sheriff from southeast Iowa, was heading for the California Gold Rush and saw all the wagons waiting to cross the river and decided to make his fortune ferrying people instead.

**North Mormon Ferry Site** - located just north of the I 680 bridge across the Missouri River opposite Ferry St. in the Florence area of Omaha. Most heavily used river crossing by Latter Day Saints, gold rushers and sod busters.

**Middle Mormon Ferry Site** - located in area known as Council Point this crossing was found across from "Y" St. in Omaha but was moved north to the North Mormon Ferry Site.

**Bullock's Grove** - settlement established in 1852.

**Old Swing Bridge** - railroad bridge near Council Bluffs.

**Fields Trace** - first road established in the fall of 1819 through southwest Iowa by U.S. Military, crossed Missouri River at Fort Calhoun, Nebraska and continued to Franklin, Missouri. Used to drive cattle and move food to the Fort for the winter.

## Additional Cultural and Historic Sites

### Pottawattamie County

**Cold Springs Trace** - another military road from Fort Calhoun moving up the Boyer River Valley eventually leading all the way to St. Paul, Minnesota. Used primarily by the military for security.

**Mormon Pioneer Trail** - originally located along Pottawattamie County Road G66.

### Mills County

**Traders Point/Point aux Poules (Prairie Chicken Point)** - French and Indian village site located in the northwest corner of the county right on the county line shared with Pottawattamie County across from Bellevue, Nebraska where the Platte and the Missouri River meet. Wives of French, Spanish and American fur traders and trappers waited here for their husbands to return down the Platte (from southern area of Rocky Mountains) and Missouri Rivers (from northern area of Rocky Mountains) from a year or two of trapping and trading (then connecting on to St. Louis). Site of Second Middle Ferry. First white settlement in Mills County, established by the American Fur Company approximately 1812 and washed away by the river in 1875. Reach area from Highway 275 via Barstow Rd.

**California Junction/Florence** - abandoned town 8 miles south of "Traders Point" established 1849. Community grew to over 25 families and included a school, church and several businesses, including a sawmill and blacksmith shop before fading away by the turn of the century.

**Bethlehem/East Plattsmouth/Junction City/Sharpsburg** - tiny Mormon settlement established 1846. Site of south Mormon Ferry across from Plattsmouth.

**Pacific City** - "Old Pacific", established 1857, but disappeared after railroad made Pacific Junction a depot stop 1-1/2 miles to the south.

**Rushville** - Mormon Settlement established in August 1846 on the banks of Keg Creek, 4 miles north of Fremont/Mills County line.

**Hillsdale** - east side of Highway 275, 7 miles north of Tabor, flourishing settlement established about 1870 which had a population of over 300, disappeared in 1900 when railroad established in Balfour. Once included: 2 general stores, post office, shoe shop, jail, grocery and drug store, 2 blacksmith shops, grain elevator, newspaper, school and Methodist church. As of 1985 the jail (1885) was the only remaining original structure.

## Additional Cultural and Historic Sites

### Mills County

**Indian Earth Lodges** - several found within Highway 34 right-of-way discovered during construction.

**St. Mary's** - established in 1851 by Samuel Allis, located 3 miles down river from Bellevue, Nebraska, it once had its own newspaper "The St. Mary Gazette". Second only to Glenwood in size and importance in the County. Community included: several windmills for grinding flour and making shingles and running machinery of various kinds. It also included 2 hotels or taverns, a number of stores and a Catholic chapel. Located on a low ridge approximately one mile east of the Missouri River, it disappeared as the river shifted east approximately 1861, no remnants remain.

**Mills County Caves** - several caves used by early-day outlaws and horse thieves, can be found in northwest Mills County Horses stolen from early settlers of the vicinity were hidden in the caves and sold by the outlaws to Mormons, emigrant parties, and California gold-rushers.

### Fremont County

**French Village** - first white settlement in the County along the Nishnabotna River, fur trading settlement established 1836, disappeared around 1900, cemetery site is all that remains.

**Pumpkin Center** - small settlement along Possum Creek at base of the bluffs.

**Knox** - "Lickskillet", small town between Sidney and Nebraska City, trading center established by Major Stephen Cooper. Post office 1885-1903.

**Baseline Road** - original, or thought to be original, Iowa/Missouri state line. Because of poor marking there was a 10 mile discrepancy as to where the state line was resulting in the "Honeybee War", no shots actually fired but argument between the states as to who controlled the land.

**Indian Burial Mound/Grounds** - site believed to be possible native American burial mound or grounds north of borrow pit by the Interstate west of Bartlet.

**Austin** - first county seat established approximately 1850; 7-1/2 miles south of Sidney. Site located west side of Nishnabotna River where CB & Q railroad bridge crosses.

## Additional Cultural and Historic Sites

### Fremont County

**Lacy Grove** - Indian artifacts found in this area, believed to be a settlement site of Indians from the Glenwood culture.

**Tabor College** - located in Tabor, established 1854 by Congregationalists who called it the Tabor Literary Institute; admission to the college was not to be made on condition of race or sex because founders were anti-slavery; founders include: Rev. John Todd, George B. Gaston, James L. Smith, Jonas Jones and Origen Cumings; Congregational church was part of the College and some buildings have been turned into apartments.

**Waubonsie State Park** - early settler burial just inside of park entry, Highway 2 construction unearthed Indian burial ground, Shaw-tee sub-chief believed to be one exhumed--reburial site unknown.

**Civil Bend** - current site of Blanchard Cemetery 2-3 miles west of Percival, a collection of homestead sites known for their underground railroad activity. Started by Congregationalists who moved to Tabor after repeated flooding. Settlements included: Gaston—1849, Eureka—1857, Eastport—1867 and Percival—1868. Town of Civil Bend—established in 1850 in western part of Benton Township near Percival.

**Jonas Jones House** - located in Tabor, founder of Tabor College and housed John Brown while he recuperated and planned for Harper's Ferry attack.

**George Gaston House** - located in Tabor, founder of Tabor College and site of underground railroad, probably sheltered more black people than Todd House.

**John Brown Memorial** - Tabor City Park, marks the site where he drilled his recruits preparing for the Civil War.

**Huntsaker Ferry** - ferry crossing site of Missouri River across from Old Fort Kearney site in Nebraska City.

**Big Springs** - approximately 2 miles south of Knox was Major Cooper's first settlement, a site where a spring came out of the hills and fed into a lake at the foot of the hills.

**Thurman Limestone Quarry** - many fossils found, Mastodon tusk in Sidney museum, other fossils at University of Nebraska - Lincoln museum.

**Dawsonburg** - located near central part of Green township on original stage coach trail, town site with post office 1851-57.

# Sign Plan

### *Signs and Scenic Byways*

A well planned, implemented and maintained sign system is essential to providing a positive and safe experience for travelers in a scenic byway corridor. An effective sign system for byway routes and associated attractions contributes enormously to fulfilling the resource protection and community and economic development potential of a scenic byway. Poor design, improper placement and inadequate maintenance of signs can greatly discourage travel in the corridor. An ineffective sign system can threaten the very existence of a scenic byway.

A sign is defined as an inscribed board, plate or space that provides information, warning or guidance. Signs provide a single message. Entrance signs, traffic signs, directional signs and regulation signs are examples (Trapp et al. 1994, 8). Each part of a sign is important. Signs not only provide information, they create an impression and set a tone. The *Manual of Uniform Traffic Control Devices for Streets and Highways* (*MUTCD*) published by the Federal Highway Administration (1988) is an excellent resource for guidance on the various types and specifications of signs to meet identified needs. According to the MUTCD, the three parts of a sign are:

- Sign face - includes all the elements that compose the surface;
- Sign panel - the physical backboard on which the sign face is inscribed; and
- Supports - anchors the sign to the site physically and visually.

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Material requirements and location for signs are important considerations. Thought should be given to:

- Readability by motorists traveling at various speeds and in a variety of weather conditions;
- Use of local materials and service;
- Fabrication, installation, maintenance, and replacement costs;
- Sustainability, e.g., degree of permanence of message;
- Durability, e.g., degree of resistance to vandalism;
- Ability to accept night lighting;
- Siting and adaptability in diverse settings; and
- Uniformity of appearance: color, font, size, materials, etc.

A sign system for a scenic byway corridor performs a variety of functions. At its most basic level, a sign system should provide travelers in the corridor with:

- Directions for traveling the scenic byway;
- Directions to attractions in the corridor; and
- Information about the intrinsic qualities or resources of the scenic byway corridor.

Signs in a scenic byway corridor should also:

- Express warmth, hospitality and welcoming impression conveyed to viewers;
- Provide easy readability in various light and weather conditions;
- Provide reliability - attractions marked with signs should meet minimum standards of quality and service;
- Integrate well with lure pieces, trip planning literature and in-route travel guides; and
- Encourage travelers to visit attractions and enjoy visitor services such as food and lodging.

A plan providing guidelines for the appropriate use of signs is also a requirement for scenic byway designation at the national level. According to the National Scenic Byways Program, a sign plan that demonstrates how the number and placement of signs associated with a scenic byway will be supportive of the visitor experience should be included as part of the byway's corridor management plan (U.S. Federal Government Register 26759, 1995).

## A Sign Plan for the Loess Hills Scenic Byway Corridor

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Travelers in the Loess Hills Scenic Byway Corridor have repeatedly confirmed the importance of an effective sign system in making their experience more enjoyable. This traveler input, the results of an extensive inventory and evaluation of signs and sign needs, and principles of sound transportation planning have been used to develop a sign plan for the Scenic Byway corridor. The plan is based on the primary sign types described below:

### *Sign Types for the Loess Hills Scenic Byway Corridor*

- Loess Hills Scenic Byway Route Signs - these signs are placed along those state, county and city roadways that have been designated as part of the Loess Hills Scenic Byway. The signs help travelers identify and follow those routes that are part of the recognized Scenic Byway system;
- Attraction or Point of Interest Signs - these signs are placed along interstate, state, county and city roadways in the Loess Hills Scenic Byway corridor. The signs help travelers identify and locate major points of interest in the Corridor. These signs are also placed at the entrances to the attractions;
- Tourist Orientation Directional Signs (TODS): - these signs provide identification and directional information for businesses and private attractions the major portion of whose income or visitors come from motorists not residing in the immediate area. They are intended for use on non-freeway primary highways;
- Interpretive Signs - these signs are placed at attractions in the Loess Hills Scenic Byway Corridor. The signs are an integral part of the interpretive program for the Corridor. These signs educate and entertain travelers with information about the intrinsic qualities of the Scenic Byway corridor. They also provide travelers with information about the Scenic Byway itself and to help them locate other attractions and information sites in the Corridor;
- Community and Attraction Recognition Signs (Hospitality Signs) - these signs are placed along state, county and city roadways that enter communities and at entrances to attractions in the Loess Hills Scenic Byway Corridor. The signs are an integral part of the hospitality program for the Scenic Byway Corridor. These signs will indicate the availability of traveler information in communities and at attractions; and
- Bicycle Route Signs - the development of bicycle routes in the Loess Hills Scenic Byway Corridor may require the installation of signs. These signs would be placed along state, county and city roadways that are part of designated bicycle routes in the Scenic Byway Corridor. The signs will help bicyclists locate and follow established bicycle routes, advise motorists of the presence of bicyclists and warn bicyclists of any hazardous riding conditions

.

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### *Implementing the Sign Plan for the Loess Hills Scenic Byway Corridor*

The Sign Plan for the Loess Hills Scenic Byway Corridor gives direction to stakeholder organizations regarding the placement of appropriate signs, types of signs needed and specifications for sign design and fabrication. The Sign Plan attempts to balance the need for uniformity with the attraction of local uniqueness in the design and fabrication of signs for the Scenic Byway Corridor. The implementation matrix at the end of the "Corridor Development Actions" section identifies actions and stakeholder responsibilities for installing and maintaining signs in the Loess Hills Scenic Byway Corridor.

It is important to note that the sign system for the Loess Hills Scenic Byway corridor should complement printed materials produced for travelers such as brochures and discovery guides. Care should be taken to ensure that the information communicated to travelers through signs and printed materials is both accurate and consistent. Travelers should be able to rely on brochures or discovery guides together with signs to help them easily navigate and enjoy the Scenic Byway Corridor.

### *Loess Hills Scenic Byway Logo*

**Status**

In the late 1980s, as work began on the Loess Hills Scenic Byway in Harrison and Monona Counties, local residents developed and adopted a logo for the Loess Hills Scenic Byway. The logo features a stylized design symbolizing the Loess Hills, native vegetation and Missouri River.

Residents worked on the logo design with a local artist, Mr. Walter Ordway of Soldier, Iowa. Mr. Ordway donated his work for the benefit of public tourism development efforts in Iowa and waived license and/or royalty fees for the use of the logo in promoting the Loess Hills Scenic Byway corridor.

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The Loess Hills Scenic Byway logo features white lettering and symbols PMS #414U or 3M #3290 on Blue PMS #293C or 3M #710
.

### Applications

The logo plays a very important role in developing and maintaining a sense of unity in a regional attraction like the Loess Hills. The logo is an identifying symbol that can be the one constant throughout a byway traveler's experience. It reassures the traveler that they are on the Byway or in a Byway community or attraction.

The Byway's logo is currently displayed on route signs and the informational brochure. Scenic Byway logos should also be displayed on signs identifying communities and attractions in the Scenic Byway Corridor that participate in the Loess Hills hospitality training program; interpretive panels and displays; and published materials including future brochures, advertisements, and discovery guides. The logo also provides opportunities for travelers to purchase merchandise bearing an identifying logo that tells others that "they were here".

### A Licensing Program for the Scenic Byway Logo

The purpose of a licensing program is to protect the commercial use of a developed mark, icon, symbol or logo and the good name and reputation of the licensing party. This protection ensures that the mark, icon, symbol or logo is reproduced accurately from a design standpoint and that specific designs and pantone colors are used in its reproduction. A licensing program also ensures that a wide variety of products perhaps from various manufacturers bearing the mark, icon, symbol or logo will be of the highest quality. It is not unusual to be approached by manufacturers whose products are below the standards of the licensing party.

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A licensing program provides the process whereby proposed uses of the mark in conjunction with commercial products can be accepted or rejected by the licensing party. In addition, a licensing program provides a legal process whereby an unlicensed manufacturer who is using the protected mark(s) on products can be required to pay royalties. The manufacturer of products or licensees benefit from the implied affiliation and in return, the licensee pays a royalty fee to the licensing party for the right to use the mark(s). This implied affiliation helps with marketability and protection from unlicensed competition. Retailers benefit from the association of the licensing party when they become an outlet for the officially licensed products. Lastly, consumers benefit from the quality standards built into the licensing process and the knowledge that the licensing party will realize the

royalty income to support designated activities. The licensing party may offer to enhance the success of the licensing program by working closely with each licensee to assist in the marketing and distribution of products.

Obtaining a copyright or trademark for a mark, icon, symbol or logo is a legal process. An attorney experienced in this area can discuss the benefits of either a copyright or trademark. Once a legal request is made, a search is done through the Secretary of State to ensure that approval has not been previously granted. If it has not, approval is granted and the licensee is entitled to all of the rights, benefits and privileges that accompany either a copyright or a trademark.

Non-commercial use of a mark, icon, symbol or logo can always be granted by the licensing party. The request should come in writing as to how specifically the mark will be used. If the usage meets with the goals of the licensing party and the artwork has been reproduced accurately, written approval is then given regarding the non-commercial usage. Non-commercial usage does provide benefit to commercial usage by increasing the visibility and desirability of the developed mark, icon, symbol or logo *(*Ubiñas 1).

**Sign Plan Action #1**

The Loess Hills Hospitality Association in Moorhead, Iowa has registered the Scenic Byway logo as a trademark with the Office of the Secretary of State in Iowa. The Hospitality Association, Western Iowa Tourism Region, and Golden Hills RC&D are working together to develop a licensing program that will ensure the appropriate use and protection of the Loess Hills Scenic Byway logo. The program will provide guidance for both the non-commercial and commercial use of the Scenic Byway logo.

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### *Loess Hills Scenic Byway Route Signs*

According to the *MUTCD*, scenic byway route signs should be uniform in size, shape, color and message. The *MUTCD* also states that in many instances signs must be applied and located differently. For example, it is recognized that urban traffic conditions differ from rural and the Loess Hills Scenic Byway travels through both rural and urban areas. In urban areas where traffic is heavy and motorists have to make quick decisions there is a need for more signs than on a rural road with light traffic and few intersections. Signs should be placed so users of the Byway can make timely and safe decisions.

**Status**

A plan for the placement of route signs for the Loess Hills Scenic Byway has been completed. This plan was developed with the participation of representatives from the seven counties through which the Scenic Byway travels and the Iowa DOT. Design of the route signs for the Loess Hills Scenic Byway has been completed. The design utilizes the Loess Hills logo of white symbols and lettering on a blue background. As of 1997, many of the required route signs are already in place. There is still a need, however, for the installation of additional Loess Hills Scenic Byway route signs to guide travelers.

The need for route signs has been identified on city, county and state roadway segments of the Scenic Byway in each of the seven counties in the corridor. In most cases, these signs are needed in certain locations to reassure travelers that they are on designated Scenic Byway routes and to more clearly mark intersections to help travelers identify the Byway. In some cases, existing signs are in need of replacement.

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A comprehensive inventory of route signs and route sign needs on the Loess Hills Scenic Byway has produced a database that identifies:

- Planned location of route signs;
- Existing signs;
- Required signs; and
- Sign type at each location

Maps have been prepared that illustrate the information in the database.

The sign plan includes 582 Loess Hills Scenic Byway route signs. Approximately 293 of these signs are in need of installation or replacement. Included in the sign plan are four special directional signs in Woodbury (two signs) and Pottawattamie (two signs) Counties. These special route signs direct travelers along segments of Interstates 29 and 680 to exits for the Loess Hills Scenic Byway.

**Sign Plan Action #2**

City, county and state officials responsible for the installation and maintenance of route signs along the Loess Hills Scenic Byway should implement the sign plan in accordance with the specifications, database and maps in this chapter. A regular maintenance program should be carried by each of these entities. All signs should be kept in proper position, clean and legible at all times. Damaged signs should be replaced without delay. To assure adequate maintenance, a suitable schedule for inspection, cleaning and replacement to signs should be established.

Employees of public agencies whose duties require that they travel on the highways should be encouraged to report any damaged or obscured signs at the first opportunity. Special attention and necessary action should be taken to see that weeds, trees, shrubbery and construction materials do not obscure the face of any sign.

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All Loess Hills Scenic Byway route signs should meet the following specifications:

**Loess Hills Scenic Byway Route Signs**

| Sign Component | Specification |
|---|---|
| Sign Face Size | 24 inches wide x 30 inches high with 1-7/8 inch radius and 7/16 inch holes |
| Materials and Finish | Aluminum with engineer grade reflective finish |
| Logo, Lettering, and Border | White PMS #414U or 3M #3290; logo 19.429 x 15.43 inches; lettering 3 inch D Series LOESS HILLS SCENIC BYWAY; 5/8 inch outside border |
| Background Color | Blue PMS #293C or 3M #710 |

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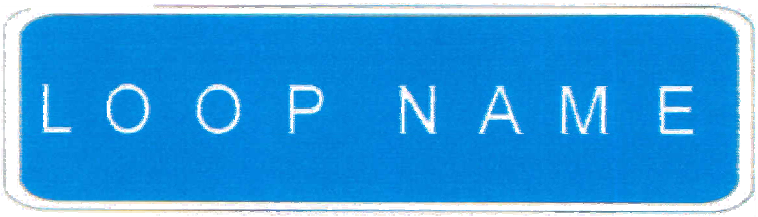
Scenic Byway excursion loop name signs, excursion loop end signs and directional arrow signs are used in combination with the Loess Hills Scenic Byway route signs. All of these signs should meet the following specifications:

**Scenic Byway Excursion Loop Name Signs**

| Sign Component | Specifications |
|---|---|
| Sign Face Size | 24 inch width x variable height depending on name with 1-7/8 inch radius and 7/16 inch holes. |
| Materials and Finish | Aluminum with engineer grade reflective finish |
| Lettering and Border | White PMS #414U or 3M #3290; lettering 4 inch D Series LOOP NAME ; 5/8 inch outside border |
| Background Color | Blue PMS #293C or 3M #710 |

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**Excursion Loop End Signs**

| Sign Component | Specification |
|---|---|
| Sign Face Size | 24 inch width x 12 inch height with 1-7/8 inch radius and 7/16 inch holes |
| Materials and Finish | Aluminum with engineer grade reflective finish |
| Lettering and Border | White PMS #414U or 3M #3290; lettering 6 inch D Series LOOP NAME; 5/8 inch outside border |
| Background Color | Blue PMS #293C or 3M #710 |

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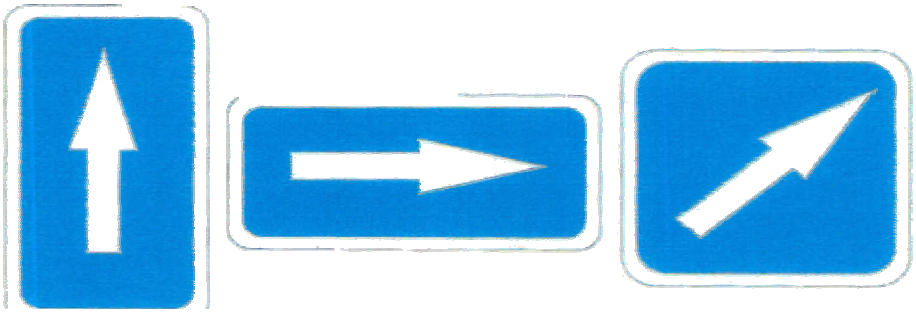
**Directional Arrow Signs.**

| Sign Component | Specifications |
|---|---|
| Sign Face Size | 24 inch width x 12 inch height (horizontal and vertical arrows); 24 inch width x 24 inch height (diagonal arrows) with 1-7/8 inch radius and 7/16 inch holes |
| Materials and Finish | Aluminum with engineer grade reflective finish. |
| Arrow and Border | White PMS #414U or 3M #3290; 5/8 inch outside border |
| Background Color | Blue PMS #293C or 3M #710. |



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Loess Hills Scenic Byway route identification signs are used in various combinations with the excursion loop name signs, loop end signs and arrow signs. The following combinations or six distinct sign types placed along the Loess Hills Scenic Byway are illustrated in the photographs below:

**Sign Type #1 - Route Sign on Spine**

**Sign Type #2 - Route Sign on Excursion Loop**

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**Sign Type #3 - Route Sign on Excursion Loop with Loop Name**

**Sign Type #3 - Route Sign on Excursion Loop with Loop Name and END**

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**Sign Type #4 - Route Sign on Spine with Directional Arrow**

**Sign Type #5 - Route Sign on Excursion Loop with Directional Arrow**

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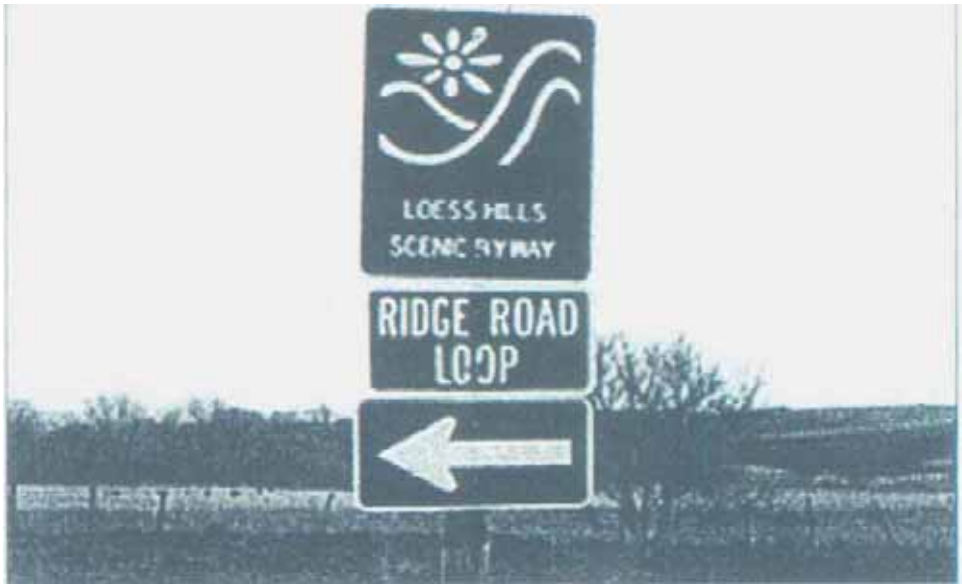
**Sign Type #6 - Route Sign on Excursion Loop with Loop Name and Directional Arrow**




**Special Directional Signs**

The need for four special directional signs has been identified in developing the sign plan for the Loess Hills Scenic Byway. These signs direct travelers along segments of Interstate 29 in Woodbury County and Interstate 680 in Pottawattamie County.

**Woodbury County (I-29 segment) Special Directional Signs**

| Sign Component | Specifications |
|---|---|
| Sign Face Size | 90 inch width x 30 inch height depending on loop name with 1-7/8 inch radius and 7/16 inch holes |
| Materials and Finish: | Aluminum with engineer grade reflective finish |
| Lettering and Border | White PMS #414U or 3M #3290: lettering 5 inch D Series; 5/8 inch outside border |
| Wording: | LOESS HILLS SCENIC BYWAY<br>CONTINUES ON I-29 SOUTH AT EXIT 141<br>LOESS HILLS SCENIC BYWAY<br>CONTINUES ON I-29 NORTH AT EXIT 151 |
| Background Color | Blue PMS #293C or 3M #710. |

**Pottawattamie County (I-680 segment) Special Directional Sign**

| Sign Component | Specifications |
|---|---|

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| | |
|---|---|
| Sign Face Size | 90 inch width x 30 inch height depending on a loop name with 1-7/8 inch radius and 7/16 inch holes |
| Materials and Finish | Aluminum with engineer grade reflective finish |
| Lettering and Border | White PMS #414U or 3M #3290; lettering 5 inch D Series; 5/8 inch outside border |
| Wording | HITCHCOCK LOOP OF LOESS HILLS SCENIC BYWAY CONTINUES ON I-29 NORTH AT EXIT 72<br>HITCHCOCK LOOP OF LOESS HILLS SCENIC BYWAY CONTINUES ON I-680 EAST AT EXIT 21 |
| Background Color | Blue PMS #293C or 3M #710 |

**Installation of Signs**

According to the *MUTCD*, signs should be (2A, 1988):

- Located on the right hand side of the roadway, where the driver is looking for them;
- Erected on separate posts or mountings except where one sign supplements another or where route or directional signs must be grouped; and
- Located so that they do not obscure each other or are hidden from view by other roadside objects.

Signs erected at the side of the road in rural districts shall be mounted at a height of at least five feet, measured from the bottom of the sign to the near edge of the pavement. In business, commercial and residential districts where parking and/or pedestrian movement is likely to occur or where there are other obstructions to view, the clearance to the bottom of the sign shall be at least seven feet. A route marking assembly consisting of a route marker with an auxiliary plate is treated as a single sign.

Sign posts and their foundations and sign mounting shall be so constructed as to hold signs in a proper and permanent position, to resist swaying in the wind or displacement by vandalism. In some cases, especially in urban districts, signs can be correctly placed on existing supports used for other purposes, such as traffic signals, street lights, and public utility poles where permitted, thereby saving expense and minimizing sidewalk obstructions (MUTCD 2A, 1988).

### *Attraction or Point of Interest Signs*

The Recreational and Cultural Interest Area Signs section in the *MUTCD* describes the scope, application, design requirements, placement and other general information regarding signs for points of interest. The purpose of these signs is to guide motorists to a general area and then to specific attractions within the area. The signs may be used on or off the road network, as appropriate.

The *MUTCD* defines recreational and cultural interest areas as attractions, or traffic generators, that are open to the general public for the purpose of play, amusement and relaxation. Recreational attractions include such facilities as parks, race tracks and ski areas, while examples of cultural attractions include museums and art galleries.

According to the *MUTCD*, there are two different types of signs for recreational and cultural interest areas: 1) Symbol Signs and 2) General Guide Signs. Symbol signs shall be square or rectangular in shape and shall have a white symbol or message and border on a brown background. Guide signs may be posted for recreational and cultural interest areas that are a significant destination on conventional roads, expressways and freeways. White on brown directional guide signs may be placed at least to the first point at which an access road intersects the highway (2H, 1998).

Other types of signs in this category include (MUTCD 2H, 1998):

- **General Information Recreational and Cultural Interest Area Symbol Signs** - used to inform the public of rules and regulations and to direct persons to facilities and structures located within recreational and cultural interest areas.
- **Motorist Services Recreational and Cultural Interest Area Symbol Signs** - used to inform motorists of the availability of motor vehicle related services such as gas, food and lodging within recreational and cultural interest areas.
- **Accommodation Services Recreational and Cultural Interest Area Symbol Signs** - used to inform the general public of the availability of non-motor vehicle services such as showers, sleeping shelters and laundries which may be needed in general travel through recreational and cultural interest areas.
- **Water Recreational and Cultural Interest Area Symbol Signs** - used to inform motorists of the availability of water services such as boat ramps, sailboating, swimming and canoeing which are located within recreational and cultural interest areas.
- **Winter Recreational and Cultural Interest Area Symbol Signs** - used to inform motorists of the availability of winter services such as skiing, ice skating and snowmobiling which are located within recreational and cultural interest areas.

**Sign Plan Action #3**

An inventory of off-site and on-site points of interest signs was conducted as part of the evaluation of existing amenities in the Loess Hills Scenic Byway corridor. This inventory produced a series of recommendations that address the condition and placement of signs at attractions. These recommendations are presented below. Scenic Byway stakeholder organizations responsible for the placement and maintenance of signs for attractions should implement these recommendations. In addition, as new attractions are identified and developed the responsible stakeholder organization should ensure that the appropriate signs are installed.

**Sign Recommendations for Attractions in the Loess Hills Scenic Byway Corridor**

| County | Site | Sign Recommendation |
|---|---|---|
| **Plymouth** | Dunham Prairie Preserve | • Off-site directional signs guiding visitors to a parking area for the site |
| | Five Ridge Prairie Area | • Site identification sign at entrance |
| **Woodbury** | Bacon Creek Park | • Off-site directional signs |
| | Loess Ridge Nature Center | • Off-site directional signs |
| | Riverside Bluffs Prairie Preserve | • Off-site directional signs<br>• Site identification sign at entrance |
| | Sioux City Prairie Preserve | • Off-site directional signs |
| | Smithland Museum & Log Cabin | • Site identification sign at entrance |
| **Monona** | Loess Hills Wildlife Area | • Off-site directional signs |
| | Preparation Town Site | • Off-site directional signs |
| | South Jordan Cemetery | • Off-site directional signs<br>• Site identification sign at entrance |
| | Turin Man Archeological Site | • Off-site directional signs |
| **Harrison** | Charles Larpenteur Family Burial Site | • Off-site directional signs<br>• Site identification sign at entrance |
| | Murray Hill Scenic Overlook | • Improve visibility of site identification sign |
| | Sawmill Hollow | • Off-site directional signs |
| | Willow Creek Recreation Area | • Add more off-site directional signs |

| | | |
|---|---|---|
| **Pottawattamie** | Bayliss Park | • Off-site directional signs<br>• Site identification sign at entrance |
| | Lincoln Monument | • Off-site directional signs |
| | "Squirrel Cage" Jail | • Off-site directional signs |
| | Railswest Museum & HO Model Railroad | • Off-site directional signs |
| | Ruth Ann Dodge "Black Angel" Memorial | • Off-site directional signs guiding visitors to a parking area for the site<br>• Provide signs identifying on-street parking |
| | Stempel Wildfowl Collection | • Off-site directional signs<br>• Site identification sign at entrance |
| | Wabash Trace Trailhead - Council Bluffs | • Off-site directional signs<br>• Site identification sign at entrance<br>• |
| **Mills** | Chief Waubonsie Historical Marker | • Off-site directional signs<br>• Site identification sign |
| | Foothills Park | • Site identification sign at park entrance |
| | Mile Hill Lake | • Off-site directional signs |
| | Salem Lutheran Church & Plummer Cemetery | • Off-site directional signs<br>• Site identification sign at entrance |
| | Wabash Trace Trail Stop - Mineola | • Off-site directional signs<br>• Site identification sign at entrance |
| **Fremont** | Fremont County Historical Museum | • Off-site directional signs |
| | Pinky's Glen | • Off-site directional signs<br>• Site identification sign at entrance |
| | Riverton Wildlife Area | • Site identification sign at entrance |
| | Todd House Museum | • Off-site directional signs |

### *Interstate Signs*

The Loess Hills Scenic Byway itself does not meet the current Iowa DOT criteria for placement of signs viewed from interstates for attractions. However, specific attractions in the Scenic Byway Corridor at which travelers may obtain information regarding the Byway may meet Iowa DOT criteria for interstate signs. Iowa DOT criteria for supplemental destination signs on the interstate system includes (Policy No. 620.10 C. IDOT):

- Recreational areas which are open to the public, generate significant traffic volumes, are located within 30 miles of the interchange and have at least 15,000 visitors annually;
- Historic sites or facilities or other tourist attractions which have a regional or national significance, are open to the public, generate significant traffic volumes, are located within 30 miles of the interchange and have at least 15,000 visitors annually;
- The area or facility must be on or within one mile of the intersected route;
- No more than two supplemental destinations accessible from the interchange shall be shown on the interstate sign. If more than two areas or facilities qualify, the closest, regardless of size or significance, shall be shown; and
- Historic sites and tourist attractions shall be in operation eight hours per day between 7:00 a.m. and 9:00 p.m., six days per week, year round. For those attractions which are seasonal by nature, operations may be suspended during certain parts of the year. In that event, consideration should be given to removing or covering the message when the attraction is closed.

**Sign Plan Action #4**

Several attractions currently have signs placed on Interstates 29, 80 and 680 within the Scenic Byway Corridor. There are a number of additional attractions in the Scenic Byway Corridor that may meet Iowa DOT criteria for the placement of interstate signs. A number of these attractions are listed below. Scenic Byway stakeholder organizations responsible for the management, and specifically the signing, of these attractions should pursue the placement of interstate signs with Iowa DOT. As additional attractions are identified and developed that appear to satisfy the criteria for interstate signs, the responsible stakeholder organization should work with Iowa DOT to evaluate and request their placement.

**Recommended Interstate Signs for Attractions in the Loess Hills Scenic Byway Corridor**

| County | Attraction |
|---|---|
| **Woodbury** | • Loess Ridge Nature Center |
| **Monona** | • Preparation Canyon State Park |
| **Pottawattamie** | • Hitchcock Nature Area<br>• National Western Historical Trails Center (Council Bluffs)<br>• Wabash Trace Nature Trail and Trailhead (Council Bluffs) |
| **Mills** | • Mile Hill Lake Scenic Overlook |

### *Tourist Oriented Directional Signs*

Many businesses and privately owned attractions in the Loess Hills Scenic Byway Corridor provide products and services for travelers. Many of these may not be directly on the Scenic Byway and require signage to inform travelers of their location. Tourist Oriented Directional Signs (TODS) provide identification and directional information for businesses and private attractions, the major portion of whose income or visitors are derived from motorists not residing in the immediate area. They are intended for use only on non-freeway primary highways and provide information about the availability of products, services, activities or sites of interest to the traveling public.

In Iowa, the design, fabrication and installation of TODS is subject to a series of general and special requirements established by Iowa DOT. For example, TODS can only be placed in communities with less than 1,500 population or rural areas. Similarly, businesses and attractions requesting TODS that provide traveler services must be open eight hours a day, six days a week, 12 months a year. TODS feature the name of the business or attraction, mileage to the facility and the direction. Requirements for TODS, along with additional information about design and sign location are explained in Iowa DOT publication *Guide to Iowa Outdoor Advertising Sign Regulations*. Specifications for TODS, including information about design and sign location, are also presented in the *MUTCD*.

Businesses and attractions seeking TODS must submit an application to the Iowa DOT and receive approval from a committee of professionals with expertise in signage, advertising and economic development. This committee meets monthly to review and approve applications.

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### Sign Plan Action #5

Businesses and privately owned attractions in the Loess Hills Scenic Byway Corridor should be encourage to evaluate the need for, and apply to receive approval to install, tourist oriented directional signs.

### *Interpretive Signs*

Interpretive signs at selected sites are an excellent way to enhance the traveler's experience during their trip in the Loess Hills Scenic Byway Corridor. Interpretive signs not only provide information, but give travelers an opportunity to immerse themselves in the region by engaging their mind or body through the use of questions or suggested activities. The messages on these signs need to be uniform, consistent and reinforce the region's identity. The signs should be constructed with high quality materials and installed for easy access by the reader.

The development and implementation of an interpretive plan is an essential step in providing travelers with information and educational opportunities in the Loess Hills Scenic Byway Corridor. A plan will make the process of implementing an interpretive program, including the design, fabrication and placement of interpretive signs, for the Scenic Byway Corridor more efficient and cost effective. Prototype interpretive signs for sites in the Loess Hills Scenic Byway Corridor are currently being developed. Illustrations of these signs are included at the end of this chapter.

**Sign Plan Action #6**

An inventory of interpretive sign needs was conducted as part of the evaluation of existing amenities in the Loess Hills Scenic Byway Corridor. This inventory produced recommendations for the installation of interpretive signs at attractions. These recommendations are presented below. Once an interpretive plan has been completed, Scenic Byway stakeholder organizations responsible for the operation and maintenance of these attractions should work together to design, fabricate, and install the recommended interpretive signs. The remaining attractions without interpretive signs should then be prioritized for their installation. In addition, as new attractions are identified and developed the responsible stakeholder organization should ensure that interpretive signs are installed as needed. The design, fabrication, installation and maintenance of interpretive signs should follow National Park Service recommendations presented in *Wayside Exhibit Guidelines—The ABC's of Planning, Design, and Fabrication* (Hopkins).

**Interpretive Sign Recommendations for Attractions in the Loess Hills Scenic Byway Corridor**

| County | Site |
|---|---|
| **Plymouth** | • Broken Kettle Grassland<br>• Five Ridge Prairie Area (native prairie theme)<br>• Hillview Recreation Area (historical theme) |
| **Woodbury** | • Iowa Welcome Center and Sergeant Floyd Riverboat Museum (river theme)<br>• Inkapaduta Historical Marker<br>• Loess Ridge Nature Center<br>• Smithland Museum and Log Cabin (historical theme)<br>• Southwood Conservation Area<br>• War Eagle Monument |
| **Monona** | • Loess Hills Wildlife Area<br>• Preparation Canyon State Park (historical and natural resource themes)<br>• Preparation Town Site (historical theme)<br>• South Jordan Cemetery<br>• Turin Man Archeological Site |
| **Harrison** | • Larpenteur Family Burial Site<br>• Murray Hill Scenic Overlook<br>• Sawmill Hollow Area |
| **Pottawattamie** | • Hitchcock Nature Area<br>• National Western Historical Trails Center |
| **Mills** | • Chief Waubonsie Historical Marker<br>• Foothills Park<br>• Mile Hill Lake<br>• Salem Church/Plummer Cemetery (early settler and German heritage theme) |
| **Fremont** | • Pinky's Glen<br>• Waubonsie State Park (historic or natural resource theme) |

**Interpretive Signs at Interstate Rest Areas**

Interpretive signs should be installed at all interstate rest areas in the Loess Hills Scenic Byway Corridor. These signs will reach and involve travelers on the interstate highways who may not have planned to visit the Loess Hills. Interpretive signs at interstate rest areas may entice those travelers to return and more fully explore the Loess Hills and travel the Loess Hills Scenic Byway.

Currently there are no interpretive signs at rest areas on Interstates 29, 80, or 680 in the Loess Hills Scenic Byway Corridor. Rest areas along the Interstates through and adjacent to the Loess Hills Scenic Byway Corridor are exceptional locations for interpretive signs. In almost all cases, the Loess Hills are visible to travelers at these rest areas. The signs will provide all travelers at interstate rest areas an opportunity to learn about and gain an appreciation for the Loess Hills.

### *Loess Hills Community and Attraction Recognition Signs*

The marketing plan for the Loess Hills Scenic Byway proposes the creation of a hospitality training program for residents of communities and staff at attractions in the Corridor. Participation in the hospitality program will improve the knowledge and skills of residents and staff to assist travelers in the Scenic Byway Corridor.

Recognition signs for communities attractions in the Scenic Byway Corridor will be an important part of the hospitality program. Recognition signs will be awarded to communities and attractions in the Corridor once local residents and staff have completed the activities in the Loess Hills Hospitality Program. Community and attraction recognition signs will indicate to travelers the availability of information and services to help them enjoy their trip in the Loess Hills Scenic Byway Corridor.

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**Sign Plan Action #7**
Communities and attractions in the Scenic Byway Corridor will be encouraged to participate in the hospitality program. Western Iowa Tourism Region with other stakeholders will organize and conduct the hospitality training. The Tourism Region will certify completion of the program by communities and attractions and award the recognition signs. Communities attractions awarded recognition signs should contact the county engineer or Iowa DOT for assistance with their installation.

The installation and maintenance of community and attraction recognition signs should comply with following specifications:

**Community and Attraction Recognition Signs**

| Sign Component | Specifications |
|---|---|
| Sign Face Size | 24 inch width x 30 inch height with 1-7/8 inch radius and 7/16 inch holes |
| Materials and Finish | Aluminum with engineer grade reflective finish |
| Logo, Lettering and Border | White - PMS #414U or 3M #3290; logo 19.429 x 15.43 inches; lettering 3 inch D Series LOESS HILLS COMMUNITY or LOESS HILL ATTRACTION; 5/8 inch outside border |
| Background Color | Blue - PMS #293C or 3M #710 |

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**Bicycle Route Signs**
According to the *MUTCD*, bicycle-use related signs on highways and bikeways serve three basic purposes:

- Regulating bicycle usage;
- Directing bicyclists along pre-established routes; and
- Warning bicyclists of unexpected conditions.

The display of bicycle route identification signs can help guide bicyclists along designated routes and warn them of hazardous conditions without lessening the value of their bicycling experience. Bicycle route signs should be placed at intervals frequent enough to keep bicyclists informed of changes in route direction and to remind motorists of the presence of bicyclists.

The *MUTCD* contains the standards, specifications and installation guidelines for bicycle route signs. The design, fabrication and placement of signs for bicycle facilities should comply with these *MUTCD* guidelines. Bicycle route signs should be uniform in shape, color, symbols, lettering, wording and illumination or reflectorization. All signs should be reflectorized for bicycle trails as well as for shared roadway and designated bicycle lane facilities.

The "Bicycle Routes" chapter in the *Corridor Management Plan* identifies proposed bicycle routes in the Loess Hills Scenic Byway Corridor. The bicycle routes are located primarily along roadways in the Corridor and have been categorized into different ride types to match the interests and skill levels of a variety of bicyclists. Members of bicycle clubs in western Iowa who assisted with the selection of bicycle routes in the Corridor indicated that signs are needed to warn motorists of the presence of bicyclists on designated routes and to make bicyclists and motorists aware of hazardous driving and riding conditions. Bicycle club members expressed a strong desire for a map as a complement to signs to help guide bicyclists along selected routes in the Scenic Byway Corridor.

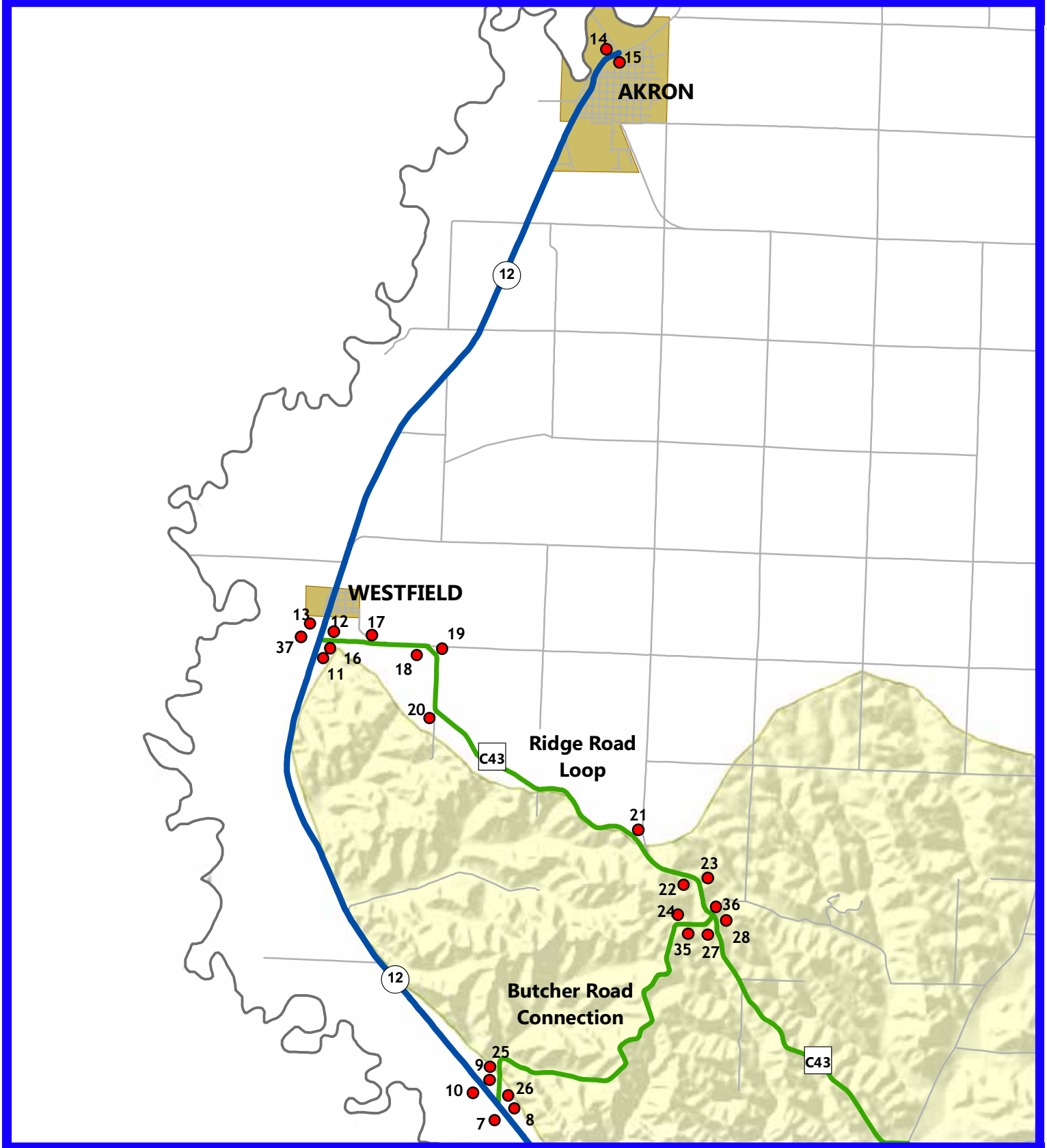
**Sign Plan Action #8**

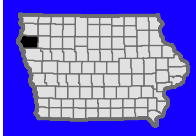
City, county and state officials responsible for the placement of signs along designated bicycle routes in the Loess Hills Scenic Byway Corridor should install and maintain bicycle route signs needed to advise motorists of the presence of bicyclists and warn motorists and bicyclists of hazardous driving and riding conditions. Bicycle route signs should be consistent with, and complemented by a map of bicycle routes in the Scenic Byway Corridor.

# Loess Hills Scenic Byway Sign Plan
## (North) Plymouth County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Sign Location
City or Town
Loess Hills Landform
Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Roads

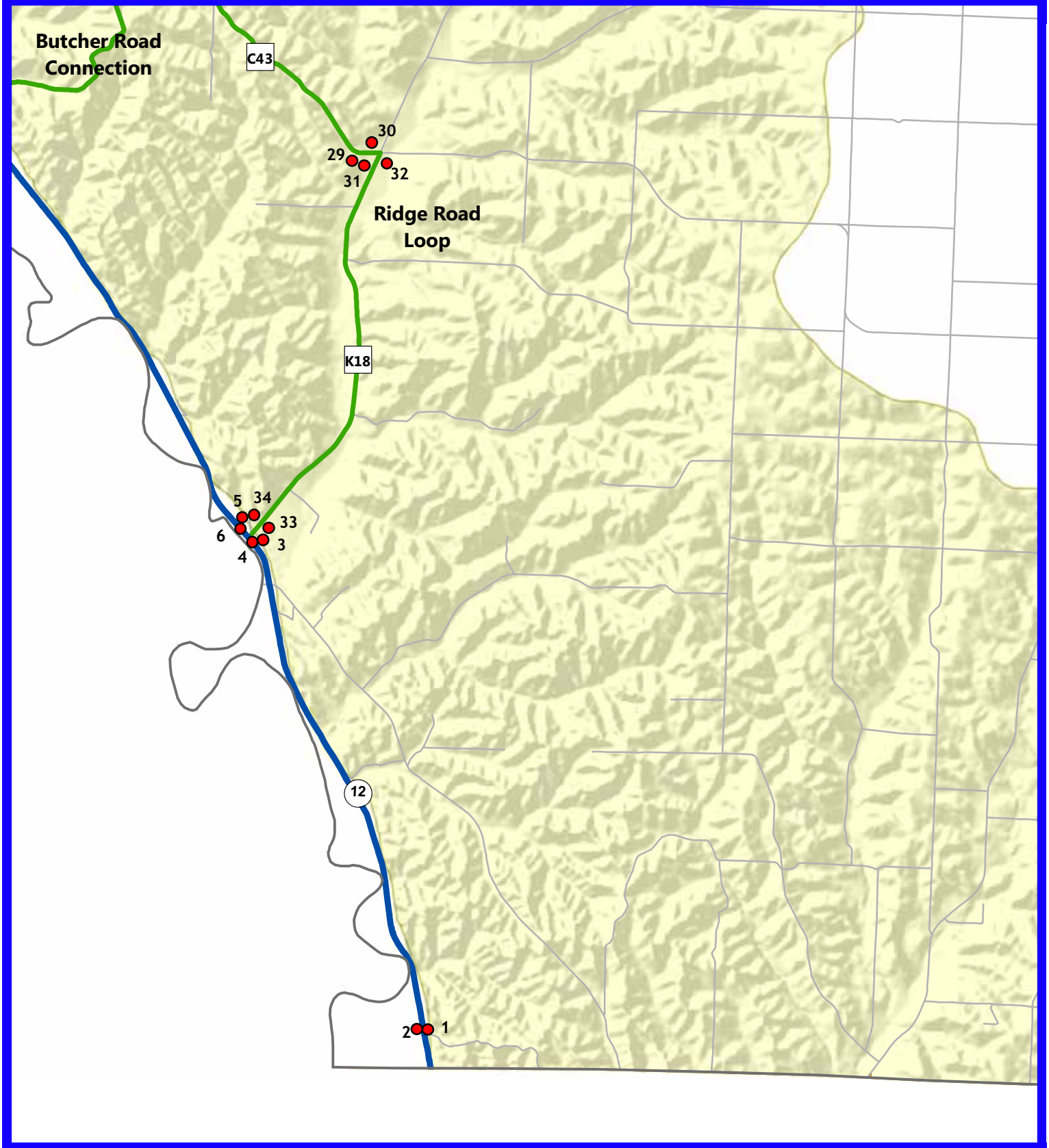
0 0.375 0.75 1.5 2.25 Miles

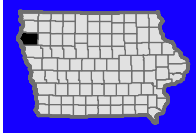
N W E S

# Loess Hills Scenic Byway Sign Plan
## (South) Plymouth County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Sign Location
City or Town
Loess Hills Landform
Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Roads

0 0.375 0.75 1.5 2.25 Miles

N W E S

# Loess Hills Scenic Byway Sign Plan Recommendations

## Plymouth County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

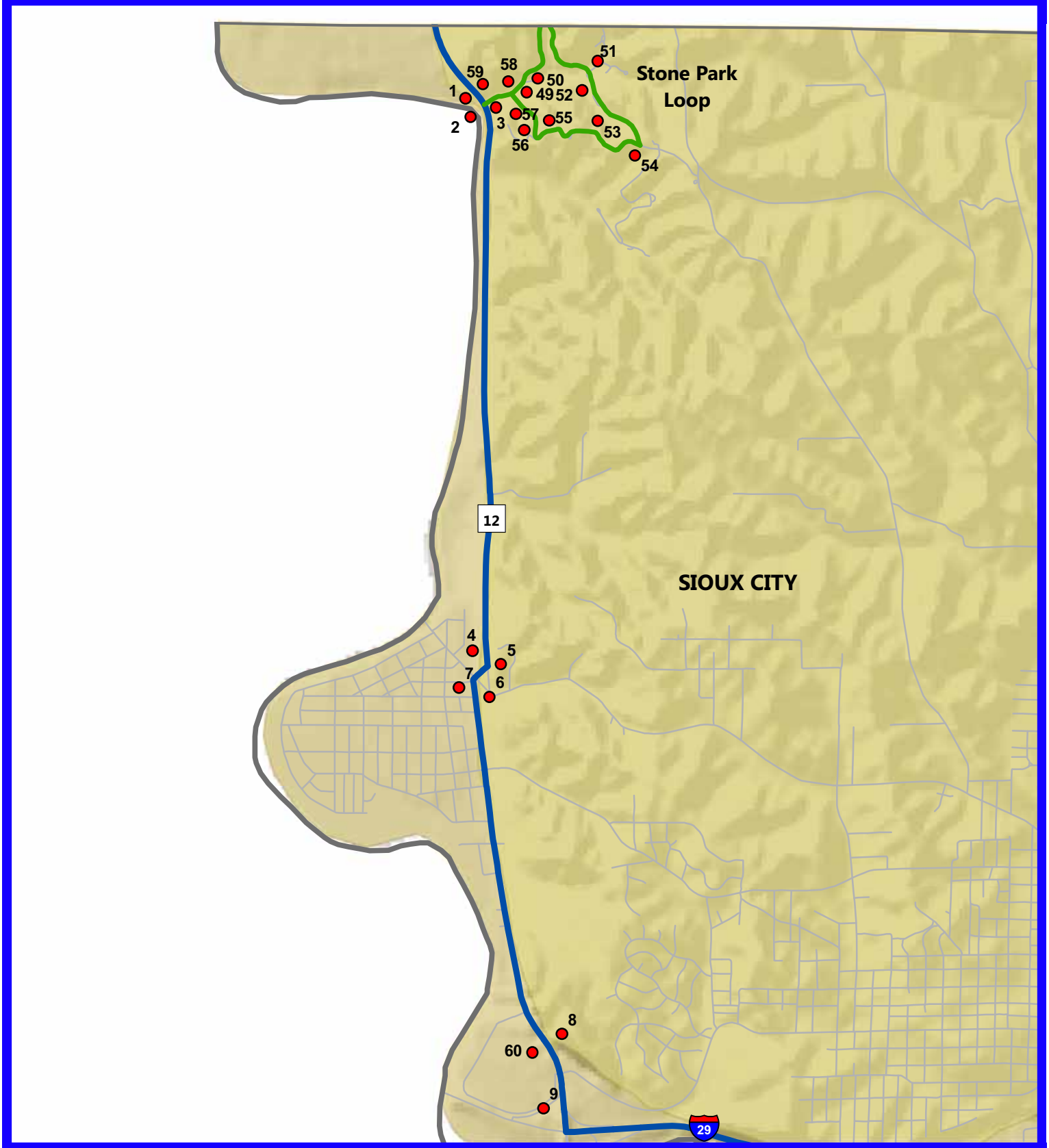
Prepared By: Pottawattamie County GIS Department

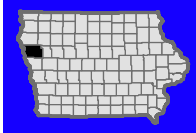
| Sign # | Type | Exists | Recommendations |
|---|---|---|---|
| 1 | 1 | Y | None |
| 2 | 1 | Y | None |
| 3 | 6 | Y | None |
| 4 | 1 | Y | None |
| 5 | 1 | Y | None |
| 6 | 6 | Y | None |
| 7 | 1 | Y | None |
| 8 | 6 | Y | None |
| 9 | 1 | Y | None |
| 10 | 6 | Y | None |
| 11 | 6 | Y | None |
| 12 | 1 | Y | None |
| 13 | 6 | Y | None |
| 14 | 1 | Y | None |
| 15 | 1 | Y | Need Sign: END |
| 16 | 3 | Y | None |
| 17 | 3 | Y | None |
| 18 | 6 | Y | None |
| 19 | 5 | Y | None |
| 20 | 2 | Y | None |
| 21 | 2 | Y | None |
| 22 | 6 | Y | None |
| 23 | 3 | Y | None |
| 24 | 3 | Y | None |
| 25 | 3 | Y | None |
| 26 | 3 | Y | None |
| 27 | 3 | Y | None |
| 28 | 6 | Y | None |
| 29 | 5 | Y | None |
| 30 | 2 | Y | None |
| 31 | 3 | Y | None |
| 32 | 6 | Y | None |
| 33 | 3 | Y | None |
| 34 | 3 | N | Need Signs: Loess Hills Scenic Byway: Ridge Road Loop: END |
| 35 | 3 | N | Need Signs: Loess Hills Scenic Byway: Butcher Road Connection: END |
| 36 | 6 | N | Need Signs: Loess Hills Scenic Byway: Ridge Road Loop: R/L Arrow |
| 37 | 1 | N | Need Sign: Loess Hills Scenic Byway |

# Loess Hills Scenic Byway Sign Plan
## (North) Woodbury County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Sign Location
City or Town
Loess Hills Landform
Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Roads

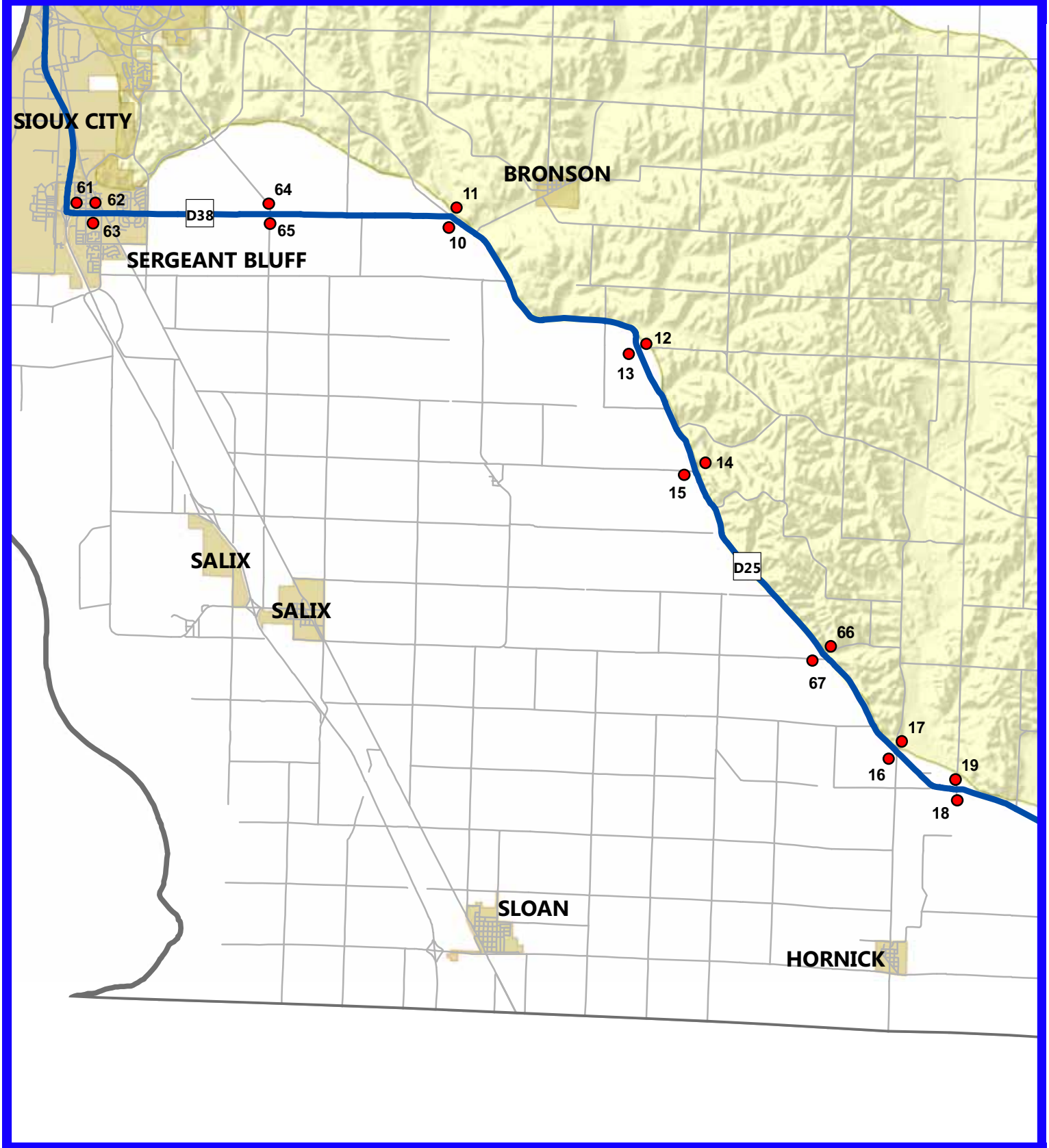
0 0.15 0.3 0.6 0.9 Miles

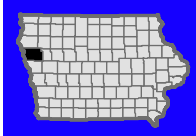
N W E S

# Loess Hills Scenic Byway Sign Plan
## (Central) Woodbury County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Sign Location
City or Town
Loess Hills Landform
Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Roads

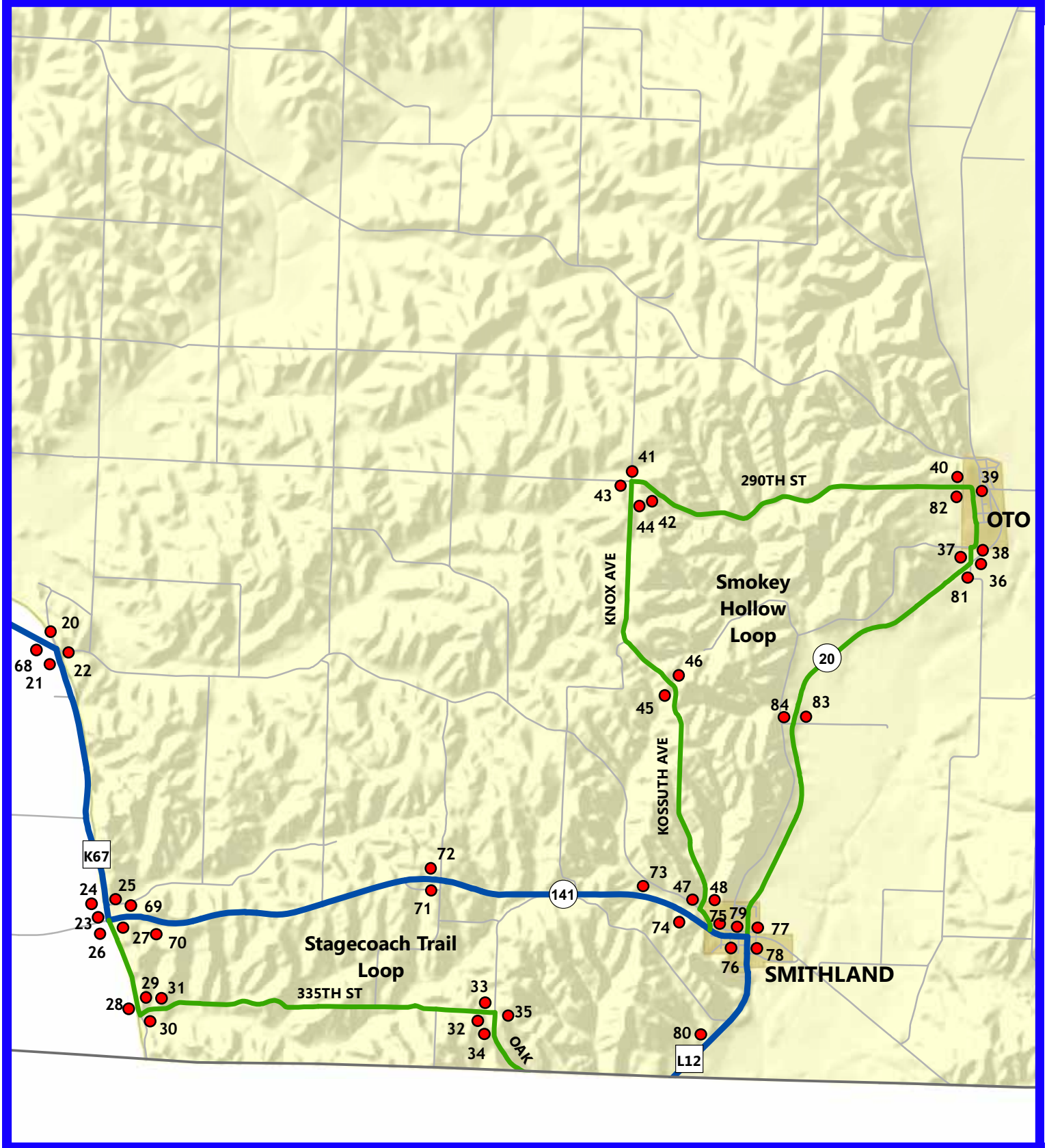
0 0.5 1 2 3 Miles

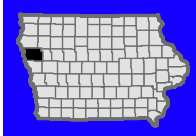
N W E S

# Loess Hills Scenic Byway Sign Plan
## (South) Woodbury County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Sign Location
City or Town
Loess Hills Landform
Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Roads

0 0.35 0.7 1.4 2.1 Miles

N W E S

# Loess Hills Scenic Byway Sign Plan Recommendations

## Woodbury County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

| Sign # | Type | Exists | Recommendations |
|---|---|---|---|
| 1 | 6 | Y | None |
| 2 | 1 | Y | None |
| 3 | 6 | Y | None |
| 4 | 1 | Y | None |
| 5 | 4 | Y | None |
| 6 | 1 | Y | None |
| 7 | 1 | Y | None |
| 8 | 1 | Y | None |
| 9 | Special | Y | None |
| 10 | 1 | Y | None |
| 11 | 1 | Y | Need Sign: Add Left Arrow |
| 12 | 1 | Y | None |
| 13 | 1 | Y | None |
| 14 | 1 | Y | None |
| 15 | 1 | Y | None |
| 16 | 1 | Y | None |
| 17 | 1 | Y | None |
| 18 | 1 | Y | None |
| 19 | 1 | Y | None |
| 20 | 1 | Y | None |
| 21 | 1 | Y | None |
| 22 | 4 | Y | None |
| 23 | 4 | Y | None |
| 24 | 3 | Y | Need Sign: Add Forward Arrow |
| 25 | 1 | Y | None |
| 26 | 3 | Y | None |
| 27 | 3 | Y | None |
| 28 | 6 | Y | None |
| 29 | 3 | Y | None |
| 30 | 3 | Y | None |
| 31 | 6 | Y | None |
| 32 | 6 | Y | None |
| 33 | 3 | Y | None |
| 34 | 2 | Y | None |
| 35 | 6 | Y | None |
| 36 | 3 | Y | None |
| 37 | 6 | Y | None |
| 38 | 6 | Y | None |
| 39 | 6 | Y | None |
| 40 | 3 | Y | None |
| 41 | 6 | Y | None |
| 42 | 3 | Y | None |
| 43 | 3 | Y | None |
| 44 | 6 | Y | None |
| 45 | 3 | Y | None |
| 46 | 3 | Y | None |
| 47 | 6 | Y | Need Sign: Add END |
| 48 | 3 | Y | None |
| 49 | 3 | Y | None |
| 50 | 3 | Y | None |

# Loess Hills Scenic Byway Sign Plan Recommendations

## Woodbury County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

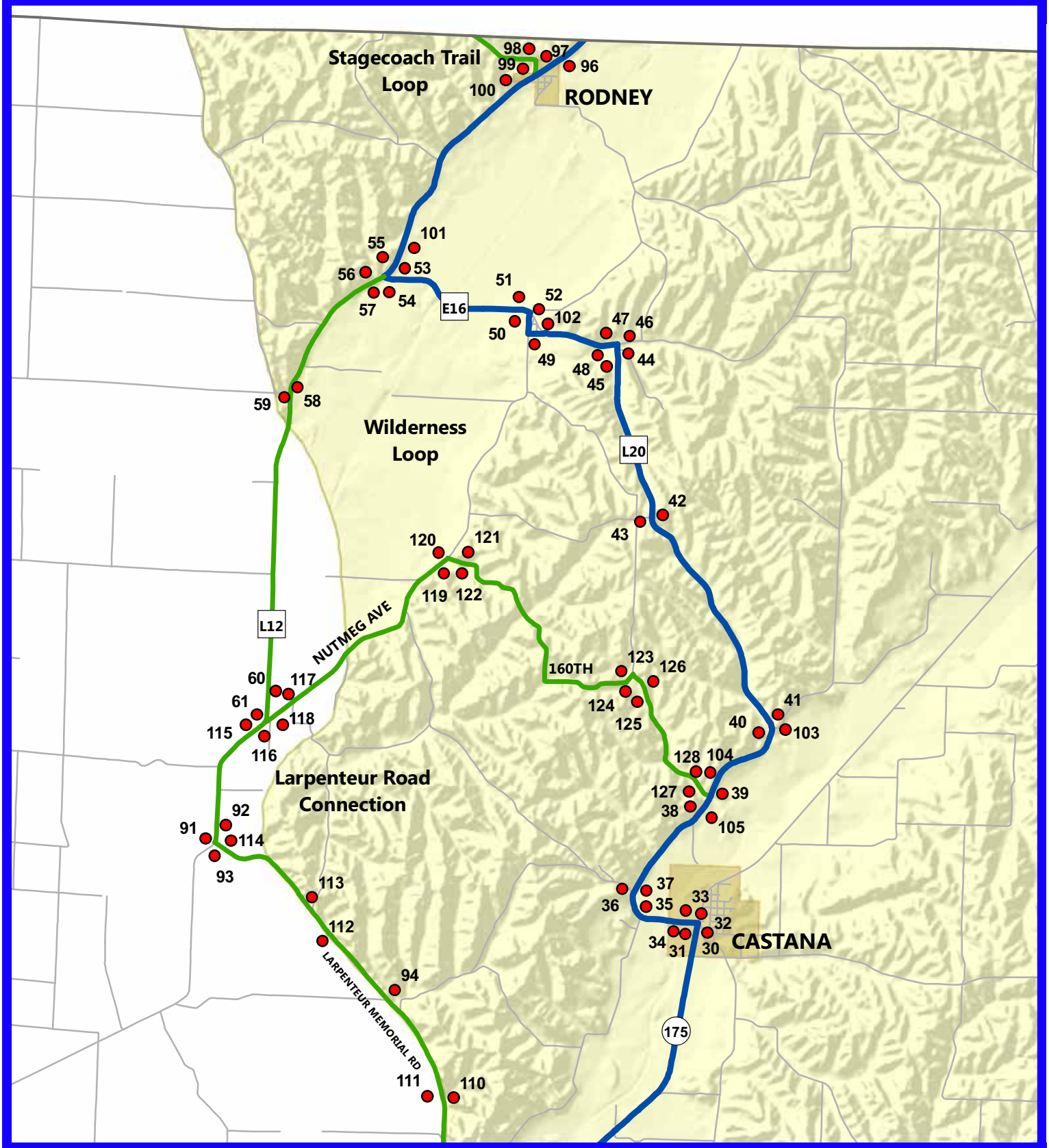
Prepared By: Pottawattamie County GIS Department

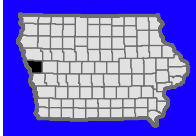
| Sign # | Type | Exists | Recommendations |
|---|---|---|---|
| 51 | 3 | Y | None |
| 52 | 3 | Y | None |
| 53 | 6 | Y | None |
| 54 | 6 | Y | None |
| 55 | 6 | Y | None |
| 56 | 6 | Y | None |
| 57 | 3 | Y | None |
| 58 | 3 | Y | None |
| 59 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 60 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 61 | Special | N | Need Sign: Special Route ID |
| 62 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 63 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 64 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 65 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 66 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 67 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 68 | 4 | N | Need Signs: Loess Hills Scenic Byway: Right Arrow |
| 69 | 4 | N | Need Signs: Loess Hills Scenic Byway: Right Arrow: Stagecoach Trail Loop: Left Arrow |
| 70 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 71 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 72 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 73 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 74 | 6 | N | Need Signs: Loess Hills Scenic Byway: Smokey Hollow Loop: Left Arrow |
| 75 | 6 | N | Need Signs: Loess Hills Scenic Byway: Smokey Hollow Loop: Right Arrow |
| 76 | 4 | N | Need Signs: Loess Hills Scenic Byway: Right Arrow: Smokey Hollow Loop: Left Arrow |
| 77 | 3 | N | Need Signs: Loess Hills Scenic Byway: Smokey Hollow Loop |
| 79 | 3 | N | Need Signs: Loess Hills Scenic Byway: Smokey Hollow Loop: End |
| 78 | 4 | N | Need Signs: Loess Hills Scenic Byway: Left Arrow |
| 80 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 81 | 5 | N | Need Signs: Loess Hills Scenic Byway: Left Arrow |
| 82 | 5 | N | Need Signs: Loess Hills Scenic Byway: Right Arrow |
| 83 | 2 | N | Need Sign: Loess Hills Scenic Byway |
| 84 | 2 | N | Need Sign: Loess Hills Scenic Byway |

# Loess Hills Scenic Byway Sign Plan
## (North) Monona County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Monona_SignPlan
City or Town
Loess Hills Landform
Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Roads

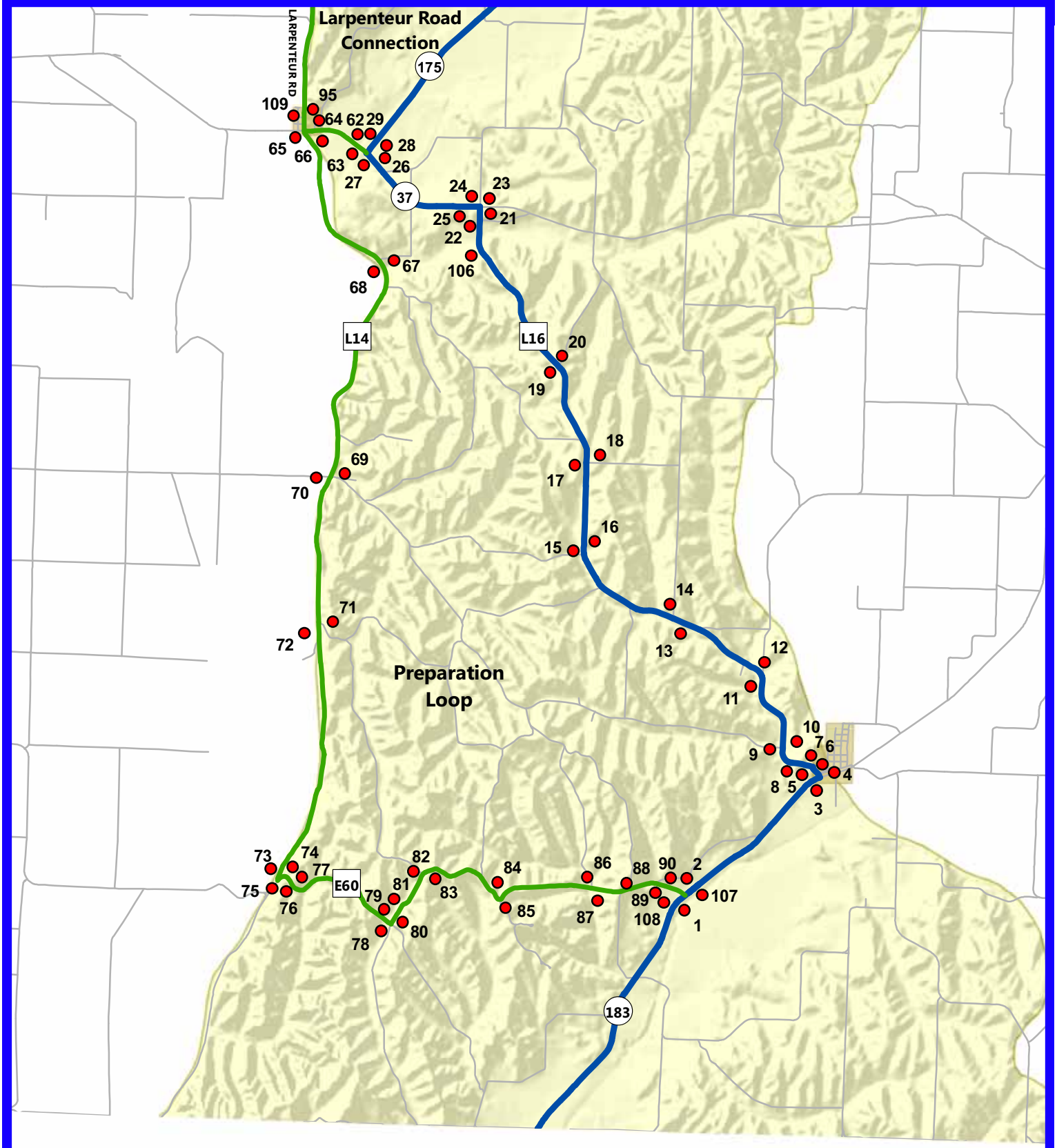
0 0.45 0.9 1.8 2.7 Miles

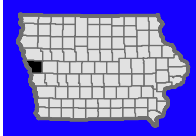
N W E S

# Loess Hills Scenic Byway Sign Plan
## (South) Monona County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Monona_SignPlan
City or Town
Loess Hills Landform
Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Roads

0 0.45 0.9 1.8 2.7 Miles

N W E S

# Loess Hills Scenic Byway Sign Plan Recommendations

## Monona County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

| Sign # | Type | Exists | Recommendations |
|---|---|---|---|
| 1 | 6 | Y | Need Signs: Loess Hills Scenic Byway: Preparation Loop: Left Arrow (Replace white sign) |
| 2 | 6 | Y | Need Signs: Loess Hills Scenic Byway: Preparation Loop: Right Arrow (Replace white sign) |
| 3 | 4 | Y | Need Signs: Loess Hills Scenic Byway: Left Arrow (Replace white signs) |
| 4 | 4 | Y | Need Signs: Loess Hills Scenic Byway: Double Arrow (Right/Forward) (Replace white sign) |
| 5 | 4 | Y | Need Sign: Right Arrow (Replace white sign/blue arrow with blue sign/white arrow) |
| 6 | 4 | Y | Need Sign: Left Arrow (Replace white sign/blue arrow with blue sign/white arrow) |
| 7 | 1 | Y | None |
| 8 | 4 | Y | Need Sign: Right Arrow (Replace white sign/blue arrow with blue sign/white arrow) |
| 9 | 1 | Y | None |
| 10 | 1 | Y | None |
| 11 | 1 | Y | Straighten sign post |
| 12 | 1 | Y | None |
| 13 | 1 | Y | None |
| 14 | 1 | Y | None |
| 15 | 1 | Y | None |
| 16 | 1 | Y | Straighten sign post |
| 17 | 1 | Y | None |
| 18 | 1 | Y | None |
| 19 | 1 | Y | None |
| 20 | 1 | Y | None |
| 21 | 4 | Y | Need Sign: Left Arrow (Replace white sign/blue arrow with blue sign/white arrow) |
| 22 | 1 | Y | None |
| 23 | 4 | Y | Need Signs: Loess Hills Scenic Byway: Double Arrow (Left/Forward) (Replace white sign) |
| 24 | 1 | Y | Need Sign: Loess Hills Scenic Byway (Replace white sign) |
| 25 | 4 | Y | Need Signs: Loess Hills Scenic Byway: Right Arrow (Replace white signs) |
| 26 | 6 | Y | Need Signs: Loess Hills Scenic Byway: Preparation Loop: Forward Arrow (Replace white sign) |
| 27 | 1 | Y | Need Sign: Loess Hills Scenic Byway (Replace white sign) |
| 28 | 1 | Y | Need Sign: Loess Hills Scenic Byway (Replace white sign) |
| 29 | 6 | Y | Need Signs: Loess Hills Scenic Byway: Preparation Loop: Right Arrow (Replace white sign) |
| 30 | 4 | Y | Need Signs: Loess Hills Scenic Byway: Left Arrow (Replace white signs) |
| 31 | 1 | Y | Need Sign: Loess Hills Scenic Byway (Replace white sign) |
| 32 | 4 | Y | Need Signs: Loess Hills Scenic Byway: Double Arrow (Right/Forward) (Replace white sign) |
| 33 | 1 | Y | None |
| 34 | 4 | Y | Need Sign: Right Arrow (Replace white sign/blue arrow with blue sign/white arrow) |
| 35 | 1 | Y | Straighten sign post |
| 36 | 1 | Y | None |
| 37 | 1 | Y | None |
| 38 | 1 | Y | None |
| 39 | 1 | Y | None |
| 40 | 1 | Y | None |
| 41 | 1 | Y | None |
| 42 | 1 | Y | None |
| 43 | 1 | Y | None |
| 44 | 4 | Y | Need Sign: Left Arrow (Replace white sign/blue arrow with blue sign/white arrow) |
| 45 | 1 | Y | None |
| 46 | 4 | Y | Need Sign: Double Arrow (Left/Forward) |
| 47 | 1 | Y | None |
| 48 | 4 | Y | Need Sign: Right Arrow (Replace white sign/blue arrow with blue sign/white arrow) |
| 49 | 1 | Y | None |
| 50 | 1 | Y | None |

# Loess Hills Scenic Byway Sign Plan Recommendations

**Monona County, IA**

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

| Sign # | Type | Exists | Recommendations |
|---|---|---|---|
| 51 | 1 | Y | None |
| 52 | 1 | Y | Need Sign: Double Arrow (Left/Right) |
| 53 | 6 | Y | Need Signs: Loess Hills Scenic Byway: Right Arrow: Wilderness Loop: Left Arrow |
| 54 | 1 | Y | None |
| 55 | 6 | Y | Need Signs: Loess Hills Scenic Byway: Left Arrow: Wilderness Loop: Forward Arrow |
| 56 | 2 | Y | Need Sign: Wilderness Loop |
| 57 | 4 | Y | Need Signs: Wilderness Loop: END |
| 58 | 2 | Y | None |
| 59 | 2 | Y | None |
| 60 | 2 | Y | None |
| 61 | 2 | Y | Move sign back before intersection: Need Sign: Left Arrow |
| 62 | 3 | Y | Need Signs: Loess Hills Scenic Byway: Preparation Loop (Replace white signs) |
| 63 | 3 | Y | Need Signs: Loess Hills Scenic Byway: Preparation Loop: END |
| 64 | 5 | Y | Need Signs: Loess Hills Scenic Byway: Right/Left Arrow (Replace white signs) |
| 65 | 5 | Y | Need Signs: Loess Hills Scenic Byway: Right/Left/Forward Arrow (Replace white signs) |
| 66 | 5 | Y | Need Sign: Double Arrow (Right/Forward) |
| 67 | 2 | Y | None |
| 68 | 2 | Y | None |
| 69 | 2 | Y | None |
| 70 | 2 | Y | None |
| 71 | 2 | Y | None |
| 72 | 2 | Y | Straighten sign post |
| 73 | 5 | Y | Need Sign: Left Arrow (Replace white sign/blue arrow with blue sign/white arrow) |
| 74 | 2 | Y | None |
| 75 | 2 | Y | Need Sign: Double Arrow (Left/Right) |
| 76 | 2 | Y | None |
| 77 | 2 | Y | Need Sign: Right Arrow (Replace white sign/blue arrow with blue sign/white arrow) |
| 78 | 5 | Y | Need Sign: Left Arrow (Replace white sign/blue arrow with blue sign/white arrow) |
| 79 | 2 | Y | None |
| 80 | 2 | Y | None |
| 81 | 5 | Y | Need Sign: Right Arrow (Replace white sign/blue arrow with blue sign/white arrow) |
| 82 | 2 | Y | None |
| 83 | 2 | Y | Need Sign: Loess Hills Scenic Byway |
| 84 | 2 | Y | None |
| 85 | 2 | Y | None |
| 86 | 2 | Y | None |
| 87 | 2 | Y | None |
| 88 | 2 | Y | None |
| 89 | 3 | Y | Need Signs: Loess Hills Scenic Byway: Preparation Loop: END |
| 90 | 3 | Y | Need Signs: Loess Hills Scenic Byway: Preparation Loop |
| 91 | 5 | Y | Need Sign: Left Arrow (Replace white sign/blue arrow with blue sign/white arrow) |
| 92 | 2 | Y | None |
| 93 | 2 | Y | None |
| 94 | 2 | Y | Sign needs to be pivoted 90 degrees counterclockwise |
| 95 | 3 | Y | Need Signs: Loess Hills Scenic Byway: Larpenteur Road Connection |
| 96 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 97 | 6 | N | Need Signs: Loess Hills Scenic Byway: Stagecoach Trail Loop: Right Arrow |
| 98 | 3 | N | Need Signs: Loess Hills Scenic Byway: Stagecoach Trail Loop |
| 99 | 3 | N | Need Signs: Loess Hills Scenic Byway: Stagecoach Trail Loop: END |
| 100 | 1 | N | Need Sign: Loess Hills Scenic Byway |

# Loess Hills Scenic Byway Sign Plan Recommendations

## Monona County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

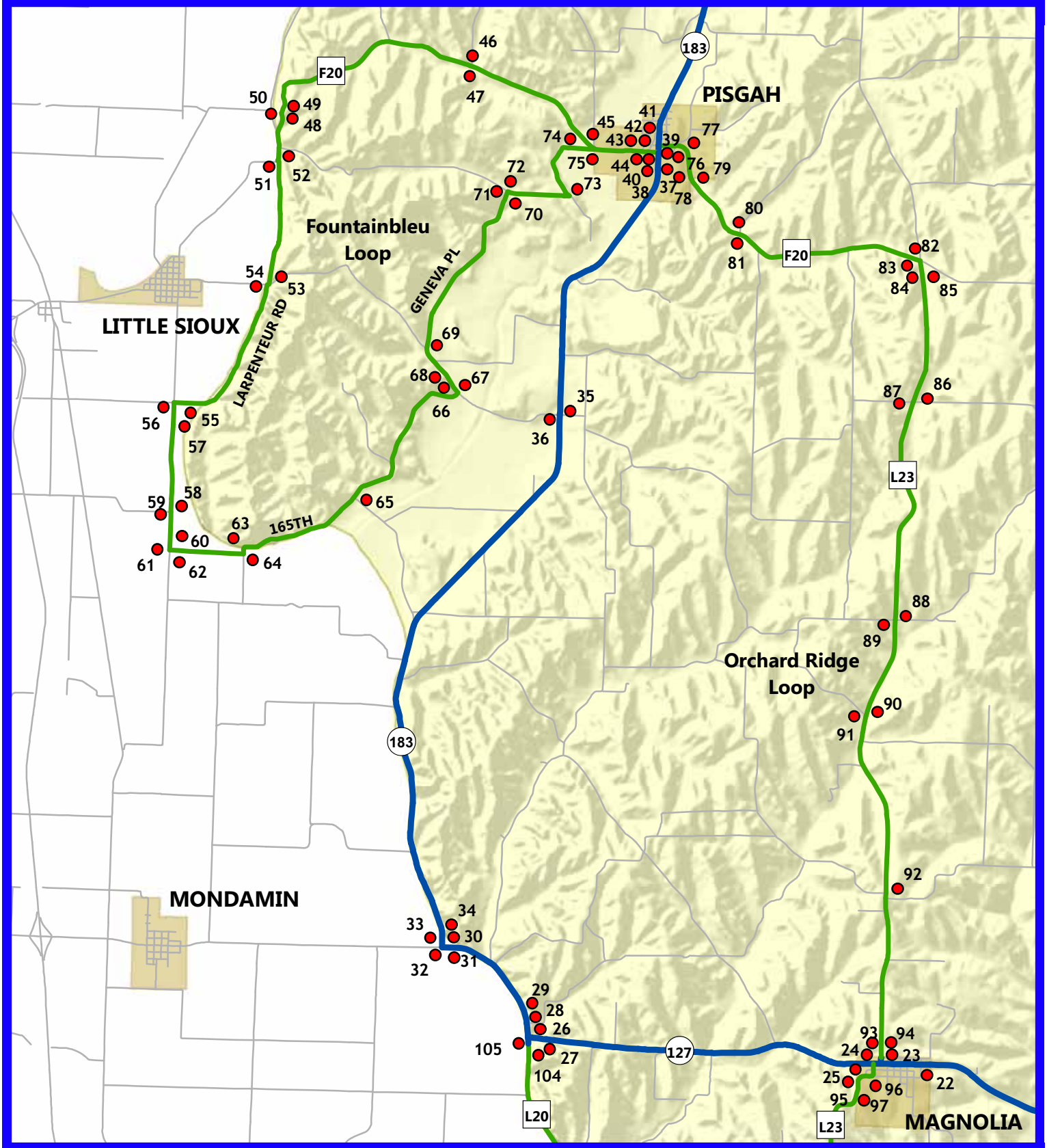
Prepared By: Pottawattamie County GIS Department

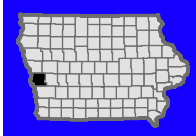
| Sign # | Type | Exists | Recommendations |
|---|---|---|---|
| 101 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 102 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 103 | 1 | N | Take Down |
| 104 | 6 | N | Need Signs: Loess Hills Scenic Byway: Wilderness Loop: Right Arrow |
| 105 | 6 | N | Need Signs: Loess Hills Scenic Byway: Wilderness Loop: Left Arrow |
| 106 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 107 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 108 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 109 | 3 | N | Need Signs: Loess Hills Scenic Byway: Larpenteur Road Connection: END |
| 110 | 2 | N | Need Sign: Loess Hills Scenic Byway |
| 111 | 2 | N | Need Sign: Loess Hills Scenic Byway |
| 112 | 2 | N | Need Sign: Loess Hills Scenic Byway |
| 113 | 2 | N | Need Sign: Loess Hills Scenic Byway |
| 114 | 5 | N | Need Signs: Loess Hills Scenic Byway: Right Arrow |
| 115 | 3 | N | Need Signs: Loess Hills Scenic Byway: Larpenteur Road Connection |
| 116 | 3 | N | Need Signs: Loess Hills Scenic Byway: Larpenteur Road Connection: END |
| 117 | 5 | N | Need Signs: Loess Hills Scenic Byway: Double Arrow (Right/Left) |
| 118 | 2 | N | Need Sign: Loess Hills Scenic Byway |
| 119 | 5 | N | Need Signs: Loess Hills Scenic Byway: Right Arrow |
| 120 | 2 | N | Need Sign: Loess Hills Scenic Byway |
| 121 | 5 | N | Need Sign: Loess Hills Scenic Byway: Left Arrow |
| 122 | 2 | N | Need Sign: Loess Hills Scenic Byway |
| 123 | 2 | N | Need Sign: Loess Hills Scenic Byway |
| 124 | 5 | N | Need Signs: Loess Hills Scenic Byway: Right Arrow |
| 125 | 2 | N | Need Sign: Loess Hills Scenic Byway |
| 126 | 5 | N | Need Sign: Loess Hills Scenic Byway: Left Arrow |
| 127 | 3 | N | Need Signs: Loess Hills Scenic Byway: Right Arrow: Wilderness Loop: END |
| 128 | 3 | N | Need Signs: Loess Hills Scenic Byway: Right Arrow: Wilderness Loop |

# Loess Hills Scenic Byway Sign Plan
## (North) Harrison County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Sign Location
City or Town
Loess Hills Landform
Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Roads

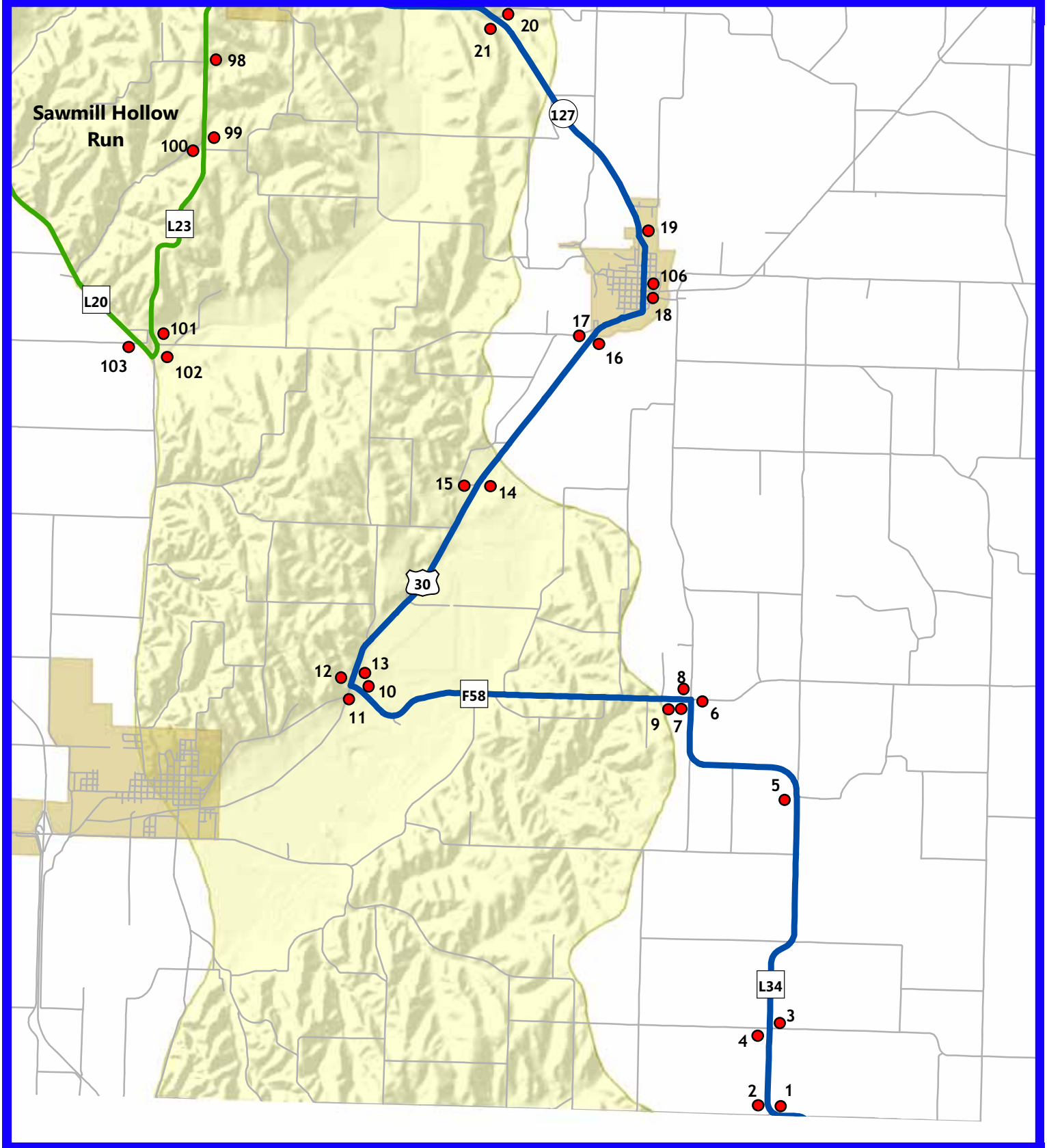
0 0.4 0.8 1.6 2.4 Miles

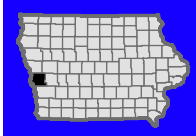
N W E S

# Loess Hills Scenic Byway Sign Plan
## (South) Harrison County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Sign Location
City or Town
Loess Hills Landform
Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Roads

0 0.45 0.9 1.8 2.7 Miles

N W E S

# Loess Hills Scenic Byway Sign Plan Recommendations

**Harrison County, IA**

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

| Sign # | Type | Exists | Recommendations |
|---|---|---|---|
| 1 | 1 | Y | None |
| 2 | 1 | Y | None |
| 3 | 1 | Y | None |
| 4 | 1 | Y | None |
| 5 | 1 | Y | None |
| 6 | 4 | Y | None |
| 7 | 1 | Y | None |
| 8 | 1 | Y | None |
| 9 | 4 | Y | None |
| 10 | 4 | Y | None |
| 11 | 1 | Y | None |
| 12 | 4 | Y | None |
| 13 | 1 | Y | None |
| 14 | 1 | Y | None |
| 15 | 1 | Y | None |
| 16 | 1 | Y | None |
| 17 | 1 | Y | None |
| 18 | 4 | Y | None |
| 19 | 1 | Y | None |
| 20 | 1 | Y | None |
| 21 | 1 | Y | None |
| 22 | 1 | Y | None |
| 23 | 6 | Y | None |
| 24 | 1 | Y | None |
| 25 | 4 | Y | None |
| 26 | 1 | Y | Need Sign: Right/Left Arrow |
| 27 | 1 | Y | None |
| 28 | 1 | Y | None |
| 29 | 1 | Y | None |
| 30 | 4 | Y | None |
| 31 | 1 | Y | None |
| 32 | 4 | Y | None |
| 33 | 4 | Y | None |
| 34 | 1 | Y | None |
| 35 | 1 | Y | None |
| 36 | 1 | Y | None |
| 37 | 6 | Y | None |
| 38 | 1 | Y | None |
| 39 | 6 | Y | None |
| 40 | 6 | Y | None |
| 41 | 6 | Y | None |
| 42 | 4 | Y | None |
| 43 | 3 | Y | None |
| 44 | 3 | Y | None |
| 45 | 2 | Y | None |
| 46 | 2 | Y | None |
| 47 | 2 | Y | None |
| 48 | 2 | Y | None |
| 49 | 6 | Y | Need Sign: Change Arrow to White/Blue Background (Right Arrow) |
| 50 | 2 | Y | None |

# Loess Hills Scenic Byway Sign Plan Recommendations

**Harrison County, IA**

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

| Sign # | Type | Exists | Recommendations |
|---|---|---|---|
| 51 | 3 | Y | Put Loop ID Sign Below Loess Hills Sign |
| 52 | 2 | Y | Need Sign: Replace Loess Hills Scenic Byway: It has bullet holes |
| 53 | 2 | Y | None |
| 54 | 2 | Y | None |
| 55 | 2 | Y | None |
| 56 | 2 | Y | None |
| 57 | 5 | Y | Need Sign: Change Arrow to White/Blue Background (Right Arrow) |
| 58 | 2 | Y | None |
| 59 | 2 | Y | None |
| 60 | 2 | Y | None |
| 61 | 5 | Y | Need Sign: Change Arrow to White/Blue Background (Left Arrow) |
| 62 | 2 | Y | None |
| 63 | 2 | Y | None |
| 64 | 2 | Y | Need Sign: Replace Loess Hills Scenic Byway: It has bullet holes |
| 65 | 2 | Y | None |
| 66 | 2 | Y | None |
| 67 | 2 | Y | None |
| 68 | 5 | Y | Need Sign: Change Arrow to White/Blue Background (Right Arrow) |
| 69 | 2 | Y | None |
| 70 | 5 | Y | Need Sign: Change Arrow to White/Blue Background (Right Arrow) |
| 71 | 2 | Y | None |
| 72 | 5 | Y | Need Sign: Change Arrow to White/Blue Background (Left Arrow) |
| 73 | 5 | Y | Need Sign: Change Arrow to White/Blue Background (Right Arrow) |
| 74 | 2 | Y | None |
| 75 | 5 | Y | Need Sign: Change Left Arrow to Double Arrow (Left and Forward) |
| 76 | 3 | Y | None |
| 77 | 3 | Y | None |
| 78 | 2 | Y | None |
| 79 | 2 | Y | None |
| 80 | 2 | Y | None |
| 81 | 2 | Y | None |
| 82 | 2 | Y | None |
| 83 | 6 | Y | None |
| 84 | 2 | Y | None |
| 85 | 6 | Y | None |
| 86 | 2 | Y | None |
| 87 | 2 | Y | None |
| 88 | 2 | Y | None |
| 89 | 2 | Y | None |
| 90 | 2 | Y | None |
| 91 | 2 | Y | None |
| 92 | 2 | Y | None |
| 93 | 3 | Y | None |
| 94 | 3 | Y | None |
| 95 | 3 | Y | None |
| 96 | 3 | Y | None |
| 97 | 2 | Y | None |
| 98 | 2 | Y | None |
| 99 | 2 | Y | Need Sign: Replace Loess Hills Scenic Byway: It has bullet holes |
| 100 | 2 | Y | None |

# Loess Hills Scenic Byway Sign Plan Recommendations

## Harrison County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

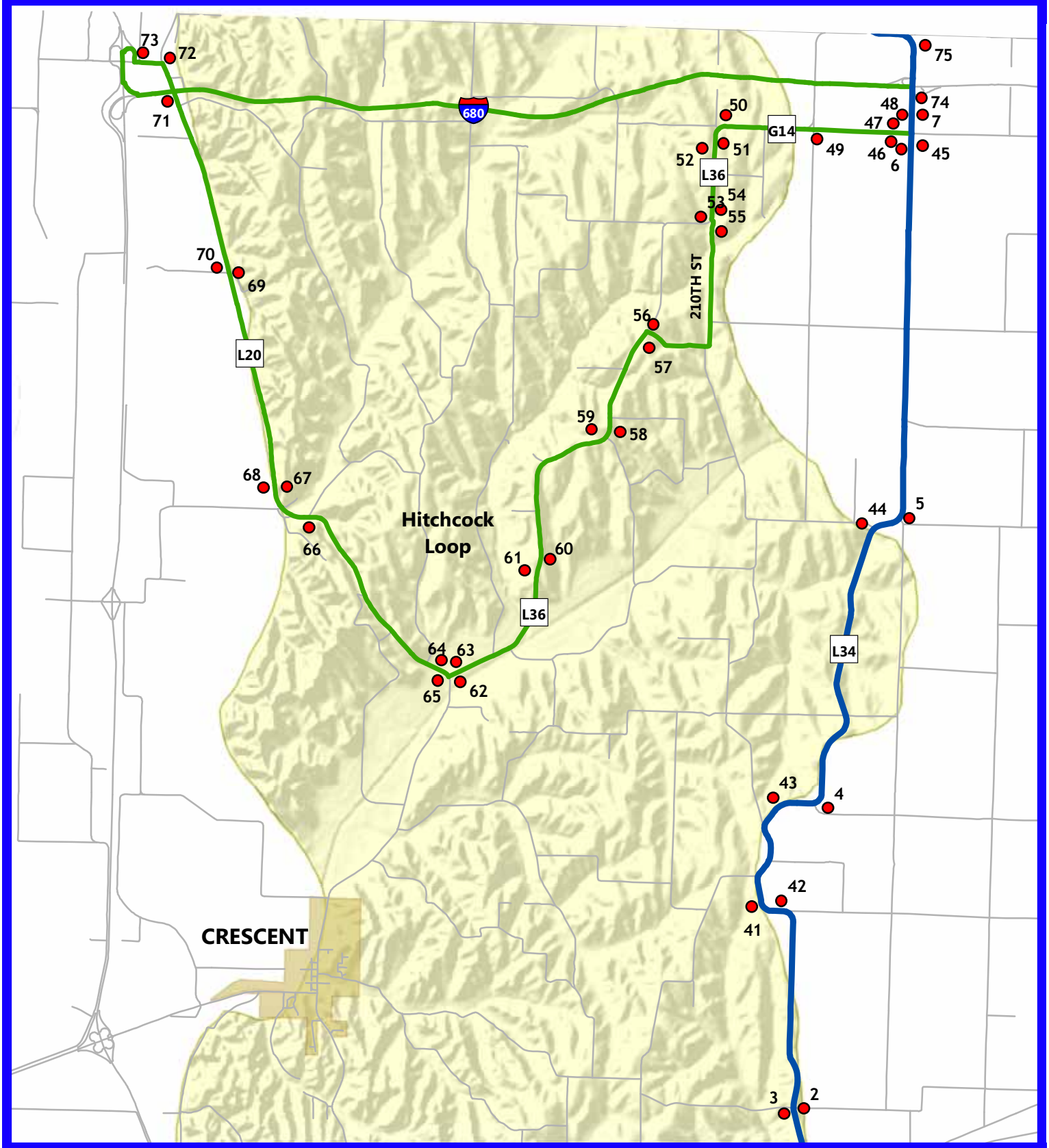
Prepared By: Pottawattamie County GIS Department

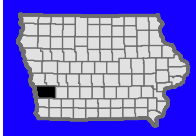
| Sign # | Type | Exists | Recommendations |
|---|---|---|---|
| 101 | 2 | Y | None |
| 102 | 2 | Y | None |
| 103 | 6 | Y | None |
| 104 | 3 | Y | None |
| 105 | 3 | Y | Need Sign: Add Arrow (Forward) |
| 106 | 4 | N | Need Signs: Loess Hills Scenic Byway: Left/Right Arrow |

# Loess Hills Scenic Byway Sign Plan
## (North) Pottawattamie County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Sign Location
City or Town
Loess Hills Landform
Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Roads

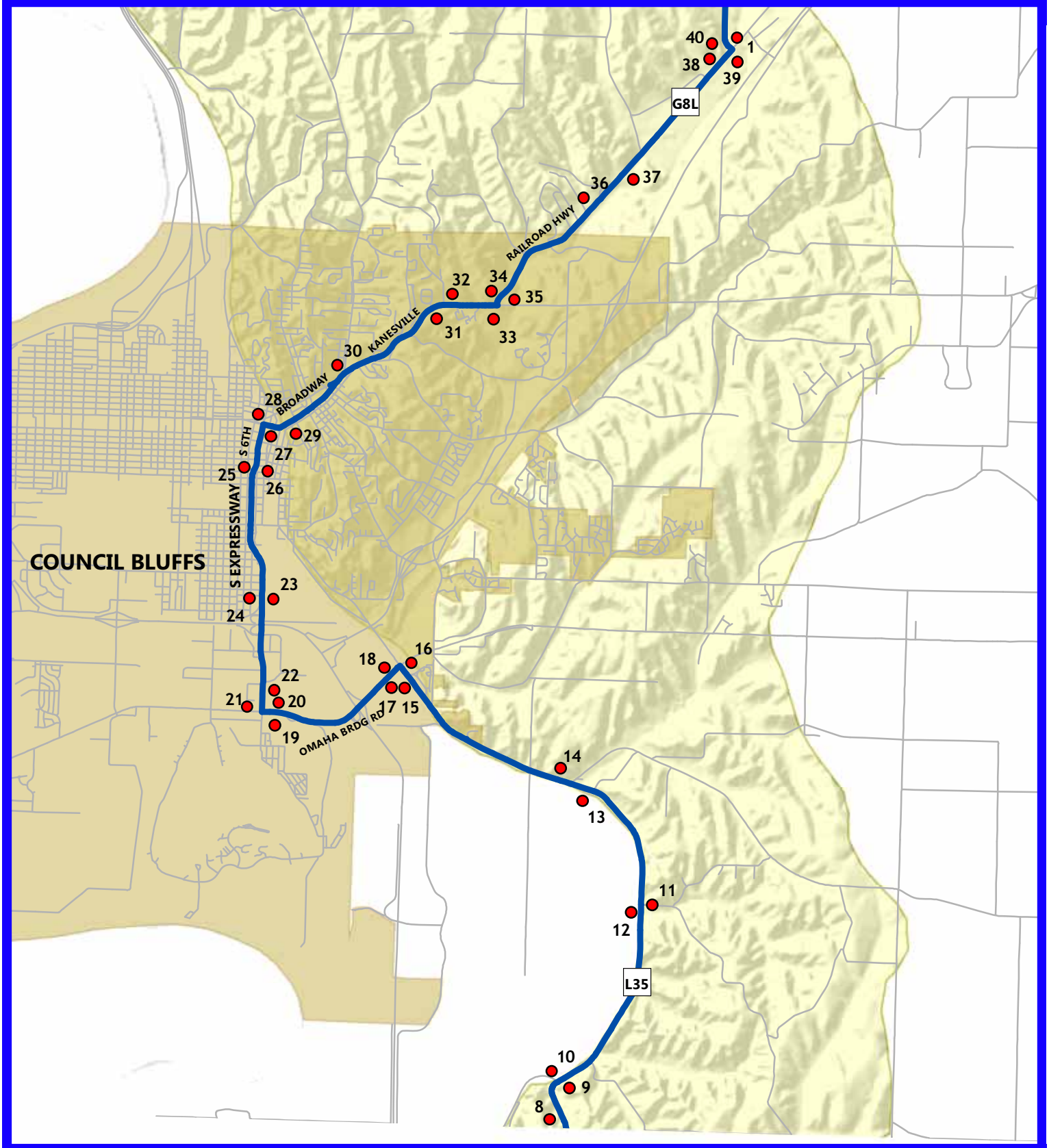
0 0.35 0.7 1.4 2.1 Miles

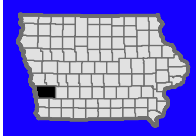
N W E S

# Loess Hills Scenic Byway Sign Plan
## (South) Pottawattamie County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Sign Location
City or Town
Loess Hills Landform
Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Roads

0 0.35 0.7 1.4 2.1 Miles

N W E S

# Loess Hills Scenic Byway Sign Plan Recommendations

**Pottawattamie County, IA**

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

| Sign # | Type | Exists | Recommendations |
|---|---|---|---|
| 1 | 1 | Y | None |
| 2 | 1 | Y | None |
| 3 | 1 | Y | None |
| 4 | 1 | Y | None |
| 5 | 1 | Y | None |
| 6 | 1 | Y | None |
| 7 | 1 | Y | None |
| 8 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 9 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 10 | 4 | N | Need Signs: Loess Hills Scenic Byway: Left Arrow |
| 11 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 12 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 13 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 14 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 15 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 16 | 4 | N | Need Signs: Loess Hills Scenic Byway: Left Arrow |
| 17 | 4 | N | Need Signs: Loess Hills Scenic Byway: Right Arrow |
| 18 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 19 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 20 | 4 | N | Need Signs: Loess Hills Scenic Byway: Right Arrow |
| 21 | 4 | N | Need Signs: Loess Hills Scenic Byway: Left Arrow |
| 22 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 23 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 24 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 25 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 26 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 27 | 4 | N | Need Signs: Loess Hills Scenic Byway: Right Arrow |
| 28 | 4 | N | Need Signs: Loess Hills Scenic Byway: Left Arrow |
| 29 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 30 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 31 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 32 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 33 | 4 | N | Need Signs: Loess Hills Scenic Byway: Left Arrow |
| 34 | 4 | N | Need Signs: Loess Hills Scenic Byway: Right Arrow |
| 35 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 36 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 37 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 38 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 39 | 4 | N | Need Signs: Loess Hills Scenic Byway: Left Arrow |
| 40 | 4 | N | Need Signs: Loess Hills Scenic Byway: Right Arrow |
| 41 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 42 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 43 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 44 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 45 | 6 | N | Need Signs: Loess Hills Scenic Byway: Hitchcock Loop: Left Arrow |
| 46 | 3 | N | Need Signs: Loess Hills Scenic Byway: Hitchcock Loop: END |
| 47 | 3 | N | Need Signs: Loess Hills Scenic Byway: Hitchcock Loop |
| 48 | 6 | N | Need Signs: Loess Hills Scenic Byway: Hitchcock Loop: Right Arrow |
| 49 | 2 | N | Need Sign: Loess Hills Scenic Byway |
| 50 | 5 | N | Need Signs: Loess Hills Scenic Byway: Left Arrow |

# Loess Hills Scenic Byway Sign Plan Recommendations

**Pottawattamie County, IA**

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

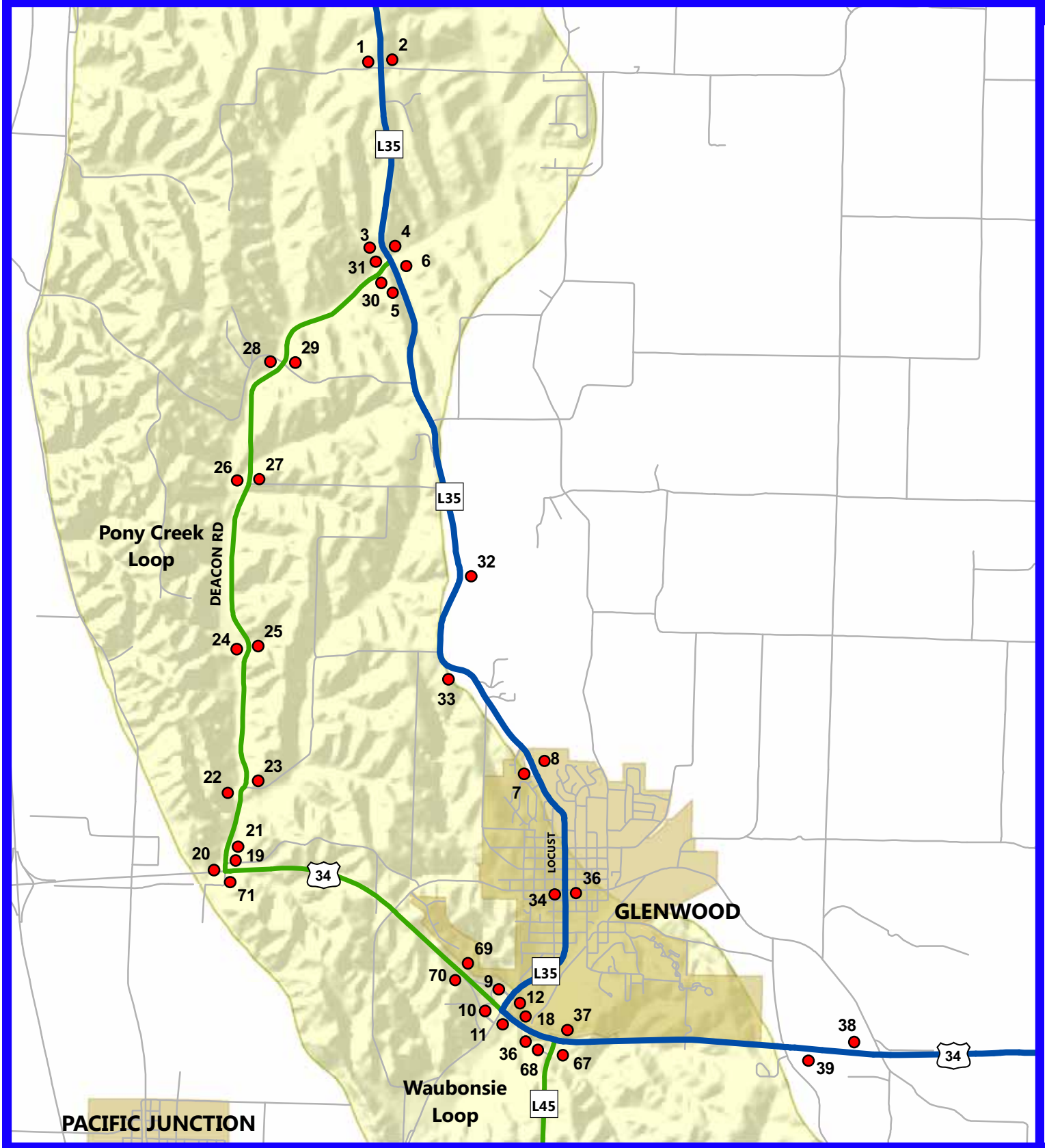
Prepared By: Pottawattamie County GIS Department

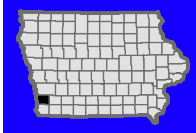
| Sign # | Type | Exists | Recommendations |
|---|---|---|---|
| 51 | 5 | N | Need Signs: Loess Hills Scenic Byway: Right Arrow |
| 52 | 2 | N | Need Sign: Loess Hills Scenic Byway |
| 53 | 5 | N | Need Signs: Loess Hills Scenic Byway: Left Arrow |
| 54 | 2 | N | Need Sign: Loess Hills Scenic Byway |
| 55 | 5 | N | Need Signs: Loess Hills Scenic Byway: Right Arrow |
| 56 | 5 | N | Need Signs: Loess Hills Scenic Byway: Left Arrow |
| 57 | 5 | N | Need Signs: Loess Hills Scenic Byway: Right Arrow |
| 58 | 2 | N | Need Sign: Loess Hills Scenic Byway |
| 59 | 2 | N | Need Sign: Loess Hills Scenic Byway |
| 60 | 2 | N | Need Sign: Loess Hills Scenic Byway |
| 61 | 2 | N | Need Sign: Loess Hills Scenic Byway |
| 62 | 2 | N | Need Sign: Loess Hills Scenic Byway |
| 63 | 5 | N | Need Signs: Loess Hills Scenic Byway: Right Arrow |
| 64 | 2 | N | Need Sign: Loess Hills Scenic Byway |
| 65 | 5 | N | Need Signs: Loess Hills Scenic Byway: Left Arrow |
| 66 | 2 | N | Need Sign: Loess Hills Scenic Byway |
| 67 | 2 | N | Need Sign: Loess Hills Scenic Byway |
| 68 | 2 | N | Need Sign: Loess Hills Scenic Byway |
| 69 | 2 | N | Need Sign: Loess Hills Scenic Byway |
| 70 | 2 | N | Need Sign: Loess Hills Scenic Byway |
| 71 | 3 | N | Need Signs: Loess Hills Scenic Byway: Hitchcock Loop |
| 72 | 5 | N | Need Signs: Loess Hills Scenic Byway: Left Arrow |
| 73 | 0 | N | Need Sign: Route ID |
| 74 | 0 | N | Need Sign: Route ID |
| 75 | 1 | N | Need Sign: Loess Hills Scenic Byway |

# Loess Hills Scenic Byway Sign Plan
## (North) Mills County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Sign Location
City or Town
Loess Hills Landform
Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Roads

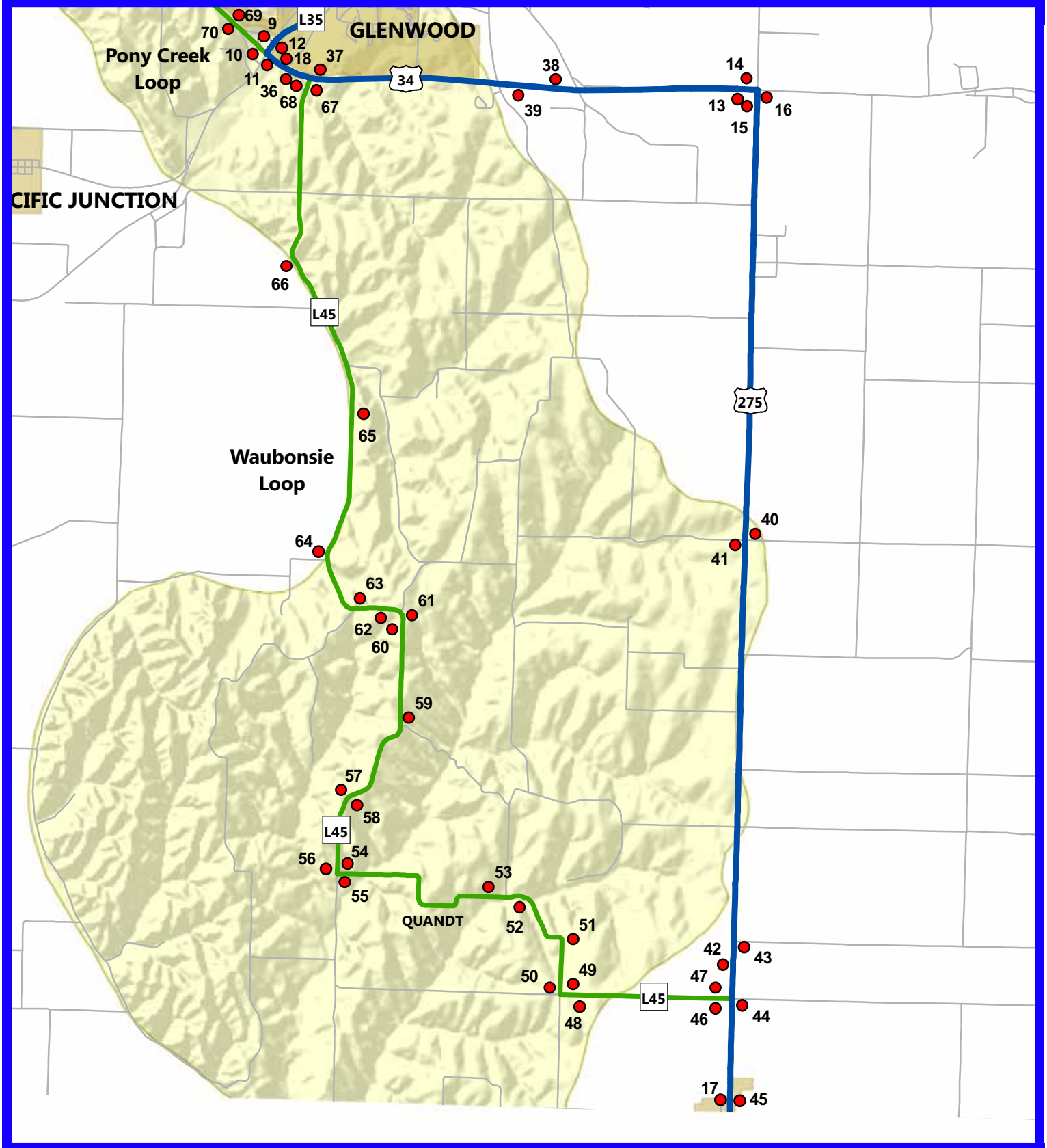
0 0.3 0.6 1.2 1.8 Miles

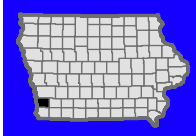
N W E S

# Loess Hills Scenic Byway Sign Plan
## (South) Mills County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Sign Location
City or Town
Loess Hills Landform
Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Roads

0 0.35 0.7 1.4 2.1 Miles

N W E S

# Loess Hills Scenic Byway Sign Plan Recommendations

## Mills County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

| Sign # | Type | Exists | Recommendations |
|---|---|---|---|
| 1 | 1 | Y | None |
| 2 | 1 | Y | None |
| 3 | 6 | Y | Need Sign: Loess Hills Scenic Byway |
| 4 | 1 | Y | None |
| 6 | 6 | Y | Need Sign: Loess Hills Scenic Byway |
| 5 | 1 | Y | None |
| 30 | 3 | Y | Need Sign: END |
| 31 | 3 | Y | Need Sign: Pony Creek Loop |
| 29 | 5 | Y | Need Signs: Loess Hills Scenic Byway and take down odd sign with small text: Pony Creek Loop |
| 28 | 5 | Y | Need Signs: Loess Hills Scenic Byway and take down odd sign with small text: Pony Creek Loop |
| 26 | 3 | Y | Need Sign: Loess Hills Scenic Byway |
| 27 | 3 | Y | Need Sign: Loess Hills Scenic Byway |
| 24 | 3 | Y | Need Sign: Loess Hills Scenic Byway |
| 25 | 3 | Y | Need Sign: Loess Hills Scenic Byway |
| 22 | 3 | Y | Need Sign: Loess Hills Scenic Byway |
| 23 | 3 | Y | Need Sign: Loess Hills Scenic Byway |
| 21 | 3 | Y | Need Sign: Loess Hills Scenic Byway and take down odd sign with small text |
| 19 | 6 | Y | Need Sign: Loess Hills Scenic Byway |
| 20 | 6 | Y | Need Signs: Loess Hills Scenic Byway: Pony Creek Loop |
| 71 | 3 | N | Need Signs: Loess Hills Scenic Byway: Pony Creek Loop |
| 32 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 33 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 7 | 1 | Y | None |
| 8 | 1 | Y | None |
| 34 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 36 | 6 | N | Need Signs: Loess Hills Scenic Byway:Waubonsie Loop: Right Arrow |
| 69 | 3 | N | Need Signs: Loess Hills Scenic Byway: Pony Creek Loop |
| 70 | 3 | N | Need Signs: Loess Hills Scenic Byway: Pony Creek Loop: END |
| 9 | 6 | Y | Need Sign: Loess Hills Scenic Byway |
| 10 | 4 | Y | None |
| 11 | 4 | Y | None |
| 12 | 4 | Y | None |
| 18 | 4 | Y | None |
| 36 | 6 | N | Need Signs: Loess Hills Scenic Byway:Waubonsie Loop: Right Arrow |
| 68 | 3 | N | Need Signs: Loess Hills Scenic Byway: Waubonsie Loop |
| 67 | 3 | N | Need Signs: Loess Hills Scenic Byway: Waubonsie Loop: END |
| 37 | 6 | N | Need Signs: Loess Hills Scenic Byway:Waubonsie Loop: Left Arrow |
| 38 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 39 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 13 | 4 | Y | Need Sign: Take down black Arrow and put up white arrow/blue background (Right) |
| 14 | 1 | Y | None |
| 15 | 1 | Y | None |
| 16 | 4 | Y | None |
| 40 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 41 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 43 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 42 | 6 | N | Need Signs: Loess Hills Scenic Byway:Waubonsie Loop: Right Arrow |
| 47 | 3 | N | Need Signs: Loess Hills Scenic Byway:Waubonsie Loop |
| 46 | 3 | N | Need Signs: Loess Hills Scenic Byway:Waubonsie Loop: END |
| 44 | 6 | N | Need Signs: Loess Hills Scenic Byway:Waubonsie Loop: Left Arrow |

# Loess Hills Scenic Byway Sign Plan Recommendations

## Mills County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

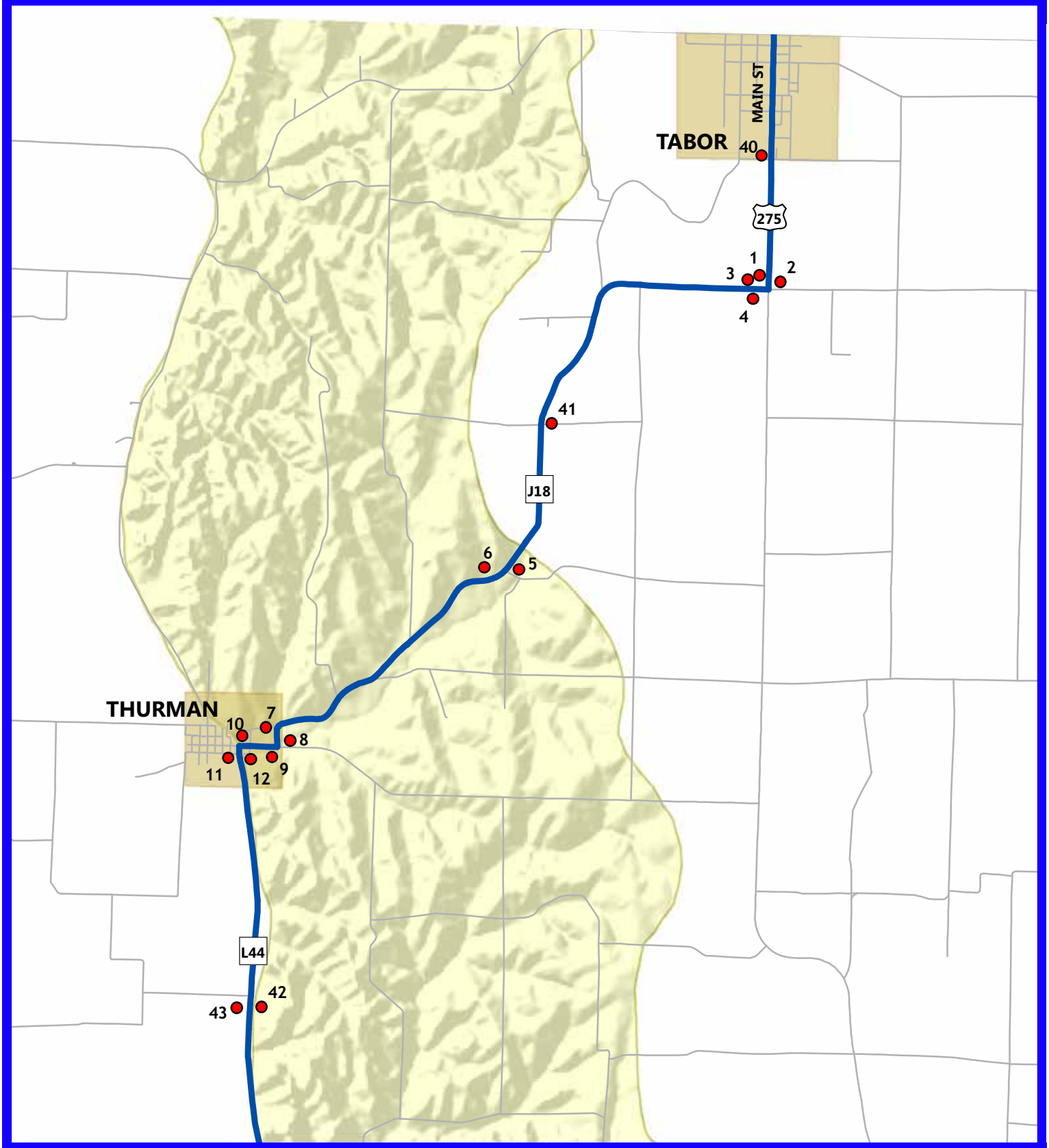
Prepared By: Pottawattamie County GIS Department

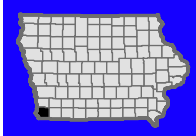
| Sign # | Type | Exists | Recommendations |
|---|---|---|---|
| 45 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 17 | 1 | Y | None |
| 48 | 2 | N | Need Sign: Loess Hills Scenic Byway |
| 49 | 5 | N | Need Signs: Loess Hills Scenic Byway: Right Arrow |
| 50 | 5 | N | Need Signs: Loess Hills Scenic Byway: Left Arrow |
| 51 | 2 | N | Need Sign: Loess Hills Scenic Byway |
| 52 | 2 | N | Need Sign: Loess Hills Scenic Byway |
| 53 | 2 | N | Need Sign: Loess Hills Scenic Byway |
| 54 | 5 | N | Need Signs: Loess Hills Scenic Byway: Right Arrow |
| 55 | 2 | N | Need Sign: Loess Hills Scenic Byway |
| 56 | 5 | N | Need Signs: Loess Hills Scenic Byway: Left Arrow |
| 57 | 2 | N | Need Sign: Loess Hills Scenic Byway |
| 58 | 2 | N | Need Sign: Loess Hills Scenic Byway |
| 59 | 2 | N | Need Sign: Loess Hills Scenic Byway |
| 60 | 2 | N | Need Sign: Loess Hills Scenic Byway |
| 61 | 5 | N | Need Signs: Loess Hills Scenic Byway: Left Arrow |
| 62 | 5 | N | Need Signs: Loess Hills Scenic Byway: Right Arrow |
| 63 | 2 | N | Need Sign: Loess Hills Scenic Byway |
| 64 | 2 | N | Need Sign: Loess Hills Scenic Byway |
| 65 | 2 | N | Need Sign: Loess Hills Scenic Byway |
| 66 | 2 | N | Need Sign: Loess Hills Scenic Byway |

# Loess Hills Scenic Byway Sign Plan
## (North) Fremont County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Sign Location
City or Town
Loess Hills Landform
Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Roads

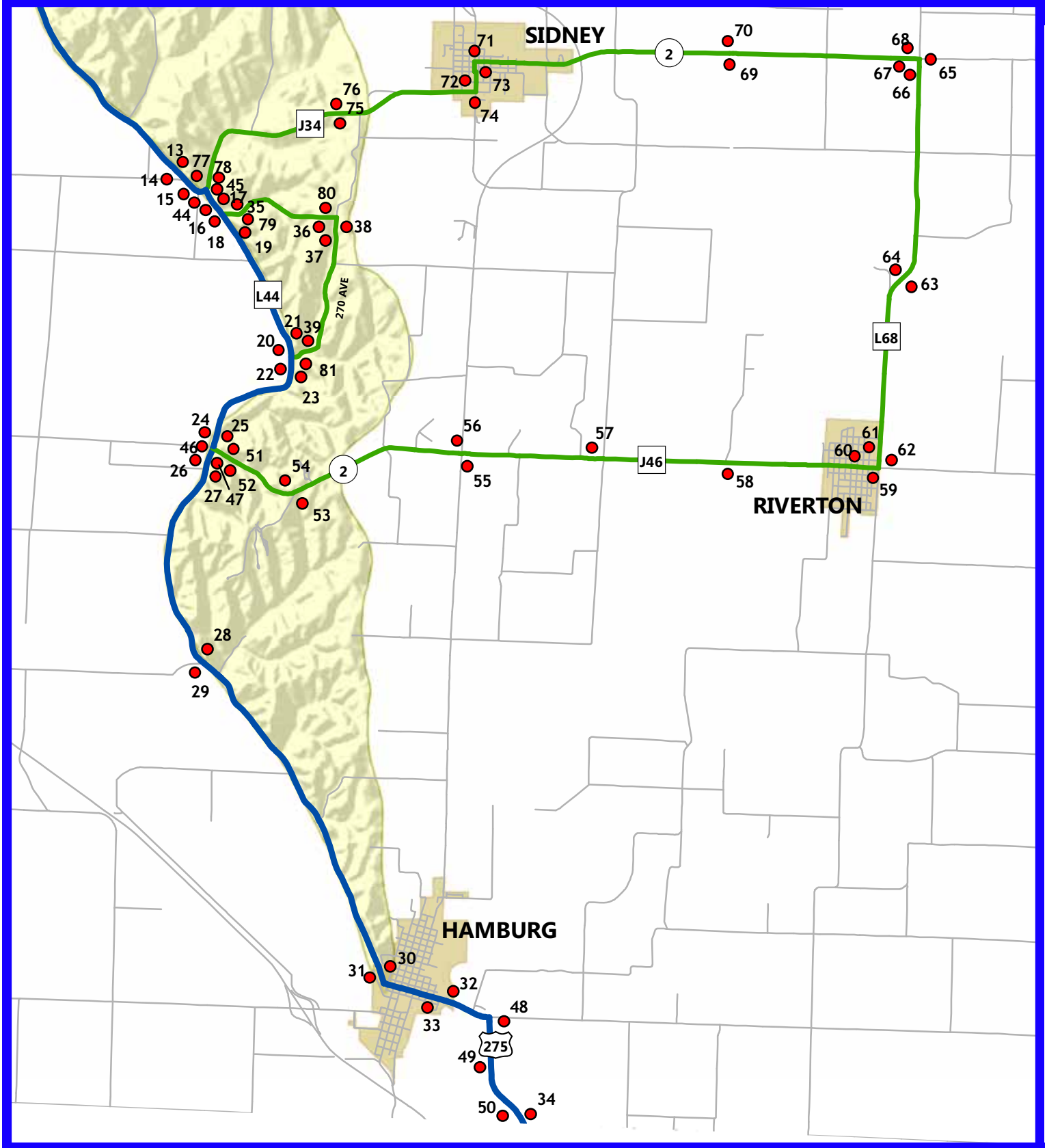
0 0.3 0.6 1.2 1.8 Miles

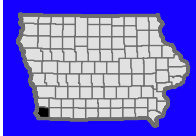
N W E S

# Loess Hills Scenic Byway Sign Plan
## (South) Fremont County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Sign Location
City or Town
Loess Hills Landform
Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Roads

0 0.45 0.9 1.8 2.7 Miles

N W E S

# Loess Hills Scenic Byway Sign Plan Recommendations

**Fremont County, IA**

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

| Sign # | Type | Exists | Recommendations |
|---|---|---|---|
| 1 | 4 | Y | None |
| 2 | 1 | Y | None |
| 3 | 1 | Y | Sign post broke: Needs Sign: Loess Hills Scenic Byway |
| 4 | 4 | Y | None |
| 5 | 1 | Y | None |
| 6 | 1 | Y | None |
| 7 | 4 | Y | None |
| 8 | 1 | Y | None |
| 9 | 4 | Y | None |
| 10 | 4 | Y | Sign needs to be rotated 90 degrees counterclockwise |
| 11 | 1 | Y | None |
| 12 | 4 | Y | None |
| 13 | 4 | Y | None |
| 14 | 4 | Y | None |
| 15 | 4 | Y | None |
| 16 | 1 | Y | None |
| 17 | 4 | Y | None |
| 18 | 6 | Y | None |
| 19 | 6 | Y | None |
| 20 | 6 | Y | None |
| 21 | 1 | Y | None |
| 22 | 1 | Y | None |
| 23 | 6 | Y | None |
| 24 | 4 | Y | None |
| 25 | 1 | Y | None |
| 26 | 1 | Y | None |
| 27 | 4 | Y | None |
| 28 | 1 | Y | None |
| 29 | 1 | Y | None |
| 30 | 1 | Y | None |
| 31 | 4 | Y | None |
| 32 | 4 | Y | None |
| 33 | 4 | Y | None |
| 34 | 1 | Y | None |
| 35 | 3 | Y | None |
| 36 | 6 | Y | Need Sign: Loess Hills Scenic Byway |
| 37 | 3 | Y | Need Sign: Loess Hills Scenic Byway |
| 38 | 6 | Y | Need Sign: Loess Hills Scenic Byway |
| 39 | 3 | Y | None |
| 40 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 41 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 42 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 43 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 44 | 6 | N | Need Signs: Loess Hills Scenic Byway: Pleasant Overview Loop: Left Arrow |
| 45 | 6 | N | Need Signs: Loess Hills Scenic Byway: Pleasant Overview Loop: Right Arrow |
| 46 | 6 | N | Need Signs: Loess Hills Scenic Byway: Pleasant Overview Loop: Left Arrow |
| 47 | 6 | N | Need Signs: Loess Hills Scenic Byway: Pleasant Overview Loop: Right Arrow |
| 48 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 49 | 1 | N | Need Sign: Loess Hills Scenic Byway |
| 50 | 1 | N | Need Sign: Loess Hills Scenic Byway: END |

# Loess Hills Scenic Byway Sign Plan Recommendations

**Fremont County, IA**

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

| Sign # | Type | Exists | Recommendations |
|---|---|---|---|
| 51 | 3 | N | Need Signs: Loess Hills Scenic Byway: Pleasant Overview Loop: END |
| 52 | 3 | N | Need Signs: Loess Hills Scenic Byway: Pleasant Overview Loop |
| 53 | 2 | N | Need Sign: Loess Hills Scenic Byway |
| 54 | 2 | N | Need Sign: Loess Hills Scenic Byway |
| 55 | 2 | N | Need Sign: Loess Hills Scenic Byway |
| 56 | 2 | N | Need Sign: Loess Hills Scenic Byway |
| 57 | 2 | N | Need Sign: Loess Hills Scenic Byway |
| 58 | 2 | N | Need Sign: Loess Hills Scenic Byway |
| 59 | 5 | N | Need Signs: Loess Hills Scenic Byway: Left Arrow |
| 60 | 2 | N | Need Sign: Loess Hills Scenic Byway |
| 61 | 5 | N | Need Signs: Loess Hills Scenic Byway: Right Arrow |
| 62 | 2 | N | Need Sign: Loess Hills Scenic Byway |
| 63 | 2 | N | Need Sign: Loess Hills Scenic Byway |
| 64 | 2 | N | Need Sign: Loess Hills Scenic Byway |
| 65 | 5 | N | Need Signs: Loess Hills Scenic Byway: Left Arrow |
| 66 | 2 | N | Need Sign: Loess Hills Scenic Byway |
| 67 | 5 | N | Need Signs: Loess Hills Scenic Byway: Right Arrow |
| 68 | 2 | N | Need Sign: Loess Hills Scenic Byway |
| 69 | 2 | N | Need Sign: Loess Hills Scenic Byway |
| 70 | 2 | N | Need Sign: Loess Hills Scenic Byway |
| 71 | 5 | N | Need Signs: Loess Hills Scenic Byway: Left Arrow |
| 72 | 5 | N | Need Signs: Loess Hills Scenic Byway: Right Arrow |
| 73 | 5 | N | Need Signs: Loess Hills Scenic Byway: Right Arrow |
| 74 | 5 | N | Need Signs: Loess Hills Scenic Byway: Left Arrow |
| 75 | 2 | N | Need Sign: Loess Hills Scenic Byway |
| 76 | 2 | N | Need Sign: Loess Hills Scenic Byway |
| 77 | 3 | N | Need Signs: Loess Hills Scenic Byway: Pleasant Overview Loop: END |
| 78 | 3 | N | Need Signs: Loess Hills Scenic Byway: Pleasant Overview Loop |
| 79 | 3 | N | Need Signs: Loess Hills Scenic Byway: Spring Valley Loop |
| 80 | 2 | N | Need Sign: Loess Hills Scenic Byway |
| 81 | 3 | N | Need Signs: Loess Hills Scenic Byway: Spring Valley Loop |

## Bicycle Routes

Bicycling has experienced tremendous growth in popularity in the United States. Since 1960 adult participation in bicycling has increased from less than 10% to more than 50%. Bicycling appeals to a health and environment conscious population, is an easy recreational activity in which to participate and can provide quick access to exercise and relaxation. Most states have excellent and extensive networks of roads well suited for bicycling. Typically these are well maintained roads with little traffic, adequate pavement widths, attractive scenery, varying topography, points of interest and quiet surroundings [Federal Highway Administration I-1, 1990]. These same characteristics describe many of the most desirable features of scenic byway routes. Scenic byways and bicycle facilities, if well planned and managed, can be perfect recreational complements for the traveling public.

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Bicyclists on the Byway D. Poggensee

The potential for bicycling to develop as a popular outdoor recreational activity in the Loess Hills Scenic Byway Corridor is enormous. Recreational preference studies have repeatedly identified a strong interest in bicycling among residents and visitors in the Loess Hills

and a need for bicycle routes and associated facilities in the Scenic Byway Corridor. Bike clubs are active in many of the larger cities in the Corridor. Club members regularly participate in planned rides many of which travel through portions of the Loess Hills. There are a number of communities and events that organize and sponsor bike rides in the Corridor such as the Onabike Annual Bicycle Ride in Onawa. Bicycling, as with other popular outdoor activities such as hiking and picnicking, provides opportunities for a relatively large and diverse group of people to experience and gain an appreciation for the unique resources of the Loess Hills Scenic Byway corridor.

Even though there has been an increase in the number of off-road trails and facilities for bicycles in the Scenic Byway Corridor, most bicycling in the Loess Hills still takes place on ordinary roads and highways with no special treatment for bicycles. The safe and enjoyable co-existence of bicycles and motor vehicle traffic in the Scenic Byway Corridor requires that special consideration be given to the planning, selection, and management of preferred bicycle routes. In preparing the *Corridor Management Plan*, efforts were directed at developing guidelines for, and proposing, a series of bicycle routes in the Loess Hills Scenic Byway Corridor

***Bicycle Route Features***

One result of these efforts, which included the survey of close to 200 members of bicycle clubs, was the identification of the following important features of bicycle routes in the Loess Hills:

- Routes should begin and end in small communities or established public areas such as a state or county park;
- In terms of length, routes should require between one and three hours to complete;
- Amenities that add most to an enjoyable bicycle ride are drinking water, restrooms and stores with refreshments;
- Features that are most desirable along a bicycle route are forests, streams and lakes, rural communities, wildlife, pastureland, prairies, farms, and country churches;
- Bicycle route signs should advise motorists of the presence of bicyclists and warn bicyclists of hazardous conditions, e.g., dangerous intersections; and
- A map of bicycle routes in the Scenic Byway Corridor is preferred to bicycle route identification signs as a means of directing bicyclists along selected routes.

### *Bicycle Route Types*

Three alternative bicycle route types have been identified for the Loess Hills Scenic Byway Corridor. These are shared roadway routes, rural bicycle lanes and bicycle paths. Planning and design guidelines for the three bicycle route types are based on the Iowa DOT's *Bicycle Facilities Network Identification Handbook* (1995) and the American Association of State Highway and Transportation Officials' *Guide for the Development of Bicycle Facilities* (1991). The three alternative route types are described below:

- Shared Roadway - Defined as any roadway upon which a bicycle lane is not designated and which may be legally used by bicycles. These should be on existing roadways with traffic lanes of at least 12 feet in width but no greater than 14 feet wide and on roadways that meet the traffic volumes and speeds in the Iowa DOT's *Bicycle Facilities Network Identification Handbook*.
- Rural Bicycle Lanes (Roadway Shoulders) - Defined as the portion of the roadway outside the edges of the traveled way and extending to the top of the front slopes. These lanes should have a minimum width of 4 feet or 5 feet minimum width with curbs. Roadways with shoulders less than 4 feet and a speed of 35 miles per hour or greater should not be designated as a rural bicycle lane. Lanes should be delineated from the road by a solid pavement edge line that is a minimum of 6 inches wide. The use of different pavement textures and rumble strips should be avoided. Lanes should be identified on roadways that meet the traffic volumes and speeds in the Iowa DOT's *Bicycle Facilities Network Identification Handbook.*
- Bicycle Path - Defined as a bicycle route physically separated from motor vehicle traffic by an open space or barrier. Bicycle paths are most frequently located within the highway right of way, public areas such as parks, and abandoned railroad right of way. Paths with two-way traffic should be a minimum of 8 feet wide with 10 feet wide preferred. For one-way traffic the path should have a minimum width of 5 feet. Shoulders should be a minimum of 2 feet wide with 3 feet wide being preferred. The separation between the road edge and the bike path should be as wide as possible with a minimum width of 8 feet. For separation widths of 5 feet or less a 4.5 feet tall divider should be considered.

It is recommended that the surface material for the three alternative bicycle route types be asphalt or concrete. Important maintenance items for the three route types include keeping the paved surfaces smooth and free from wide cracks, debris, and sharp drop-offs on the edges.

***Proposed Bicycle Route Categories***

Four categories of bicycle routes have been proposed in the Loess Hills Scenic Byway Corridor. These categories combine the important features identified above with the planning and design guidelines described for alternative bicycle route types. The four categories were developed to provide safe and enjoyable routes and associated facilities in the Scenic Byway Corridor for bicyclists of all abilities.

Features common to all four bicycle route categories are:

- Beginning and ending points of all routes are at the same location, preferably in a small rural community or established public area;
- Back-tracking required on any given route has been minimized through the use of loop routes as much as possible;
- Alternative shorter routes within any given route, especially on longer routes, have been provided; and
- Routes incorporate a series of turns and curves whenever possible.

The four bicycle route categories are described below:

- Family Ride - These routes have been selected primarily for families, students less than 18 years old, and casual cyclists. The routes are characterized by generally flat terrain with frequent opportunities for rest stops; every five to eight miles, 10 miles maximum. Route types include bicycle paths, paved shared roadways, and paved bicycle lanes with low traffic counts; less than 250 AADT. Route lengths are 30 miles or less. Important route features are water, forests, and public areas.

- Heritage Ride - These routes have been selected for casual and easy touring cyclists. The routes are characterized by a mix of flat (75%) and moderately rolling (25%) terrain, begin and end in a small rural community, and make connections to points of interest (cultural/historic sites) with rest stop opportunities provided every eight to 12 miles. Route types are generally paved shared roadways and paved bicycle lanes with low traffic volumes; less than 500 AADT. Route lengths are 20 to 40 miles. Important features are forests, water, cultural/historic sites, and small rural communities.
- Community Tour - These routes have been selected for easy touring to serious touring cyclists. The routes pass through a mix of flat and moderately rolling terrain with one to two steep hills possible. Routes connect small rural communities and public areas. Rest stop opportunities are provided every 10 to 15 miles. Route types are paved shared roadways and paved bicycle lanes with moderate traffic volumes; less than 900 AADT. Route lengths are 30 to 60 miles. A wide variety of features are present along routes with particular emphasis on small rural communities.
- Hills Tour - These routes have been selected for serious touring cyclists only. The routes are characterized by a mix of flat, rolling, and steep terrain; connect small rural communities and public areas; and provide rest stop opportunities every 15 to 25 miles. Route types are paved shared roadways and paved bicycle lanes with higher traffic volumes; less than 1500 AADT. Route lengths are 40 miles or more. A wide variety of features are present along routes with particular emphasis on small rural communities and public areas.

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A total of 20 bicycle routes along more than 458 miles of existing roadway and trails in these four categories have been identified in the Loess Hills Scenic Byway Corridor.

### *Bicycle Route Signs*

The "Sign Plan" of the *Corridor Management Plan* includes information and actions related to the installation of bicycle route signs. According to the "Sign Plan", bicycle route identification signs can guide bicyclists along designated routes and warn them of hazardous conditions without lessening the value of their bicycling experience. Bicycle route signs should be placed at intervals frequent enough to keep bicyclists informed of changes in route direction and to remind motorists of the presence of bicyclists.

It is important to note that members of bicycle clubs who assisted with the selection of bicycle routes in the Scenic Byway Corridor indicated that signs are needed to warn motorists of the presence of bicyclists on designated routes and to make bicyclists and motorists aware of hazardous driving and riding conditions. Bicycle club members also expressed a strong desire for a map as a complement to signs to help guide bicyclists along selected routes in the Scenic Byway Corridor.

### *Route Maps*

Detailed maps of selected bicycle routes in the Loess Hills Scenic Byway Corridor should be developed. These maps will complement signs placed along bicycle routes. In addition to indicating the location of bicycle routes, the maps should provide information on the features of the different routes and tips on bicycling safety, equipment and emergency procedures and contacts.

The map may also include a disclaimer statement alerting users to their responsibilities and clarifying liability issues. Examples of disclaimer language are found on bicycle route maps from Wisconsin and Massachusetts. This language is presented below:

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*Western Wisconsin Bicycle Map* by the Wisconsin Division of Tourism, 1992

**IMPORTANT NOTICE:**
The bicycle is classified as a vehicle under Wisconsin state law (Wisconsin Statutes 346.02 (4) and has the same rights and responsibilities as motor vehicles, including the right to use public roads unless specifically prohibited. The safety of bicycling depends on the conscientious efforts of bicyclists and motorists to obey traffic laws and act with mutual consideration when sharing the roadway.

The Wisconsin's Bicycle Map is published as an aid to bicyclists by the Wisconsin Division of Tourism. The Division in no way warrants the safety of the roads recommended to bicyclists for shared bicycle/motor vehicle use. The recommended roads are suggested only as routes that are more suited than others based on available data and evaluation criteria.

All routes shown on these maps, other than Bicycle Touring and Off-Road Bicycle Trails are on regular roads of state, county, local and national forest road systems used by automobiles, trucks, buses, bicycles, motorcycles and farm machinery; they have no special provisions for bicyclists unless otherwise indicated. Bicyclists using these maps assume the responsibilities and risks for their own safety when cycling on the indicated recommended routes or other roads.

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*Touring Jacob's Ladder Trail by Bicycle or Car* prepared by the Pioneer Valley Planning Commission, 1994.

**DISCLAIMER:**
The information presented in this book is intended to assist in the selection of rides which exemplify the natural and scenic beauty of the Jacob's Ladder Trail area. In no way does the suggestion of these routes guarantee the safety of the rider. With the exception of one flat tour, these rides are designed to be used by those individuals who are experienced in bike safety and are recreational to experienced riders. As with any recreational or sporting activity, the individual assumes a certain level of risk in participating in that activity. The Pioneer Valley Planning Commission assumes no liability for any individual using these suggested tours.

### *Bicycle Route Actions*

**Bicycle Route Action #1**
Produce and distribute detailed maps of the bicycle routes in the Loess Hills Scenic Byway Corridor.

**Bicycle Route Action #2**
Monitor bicycling activities in the Scenic Byway Corridor to ensure that route conditions, support facilities, signs and information in maps are satisfactory.

**Bicycle Route Action #3**
Maintain communication with bicycle clubs to keep up-to-date on their needs as well as promote current events and activities.

**Bicycle Route Action #4**
Identify and develop new or modify existing routes including connections to existing or new trails.

**Bicycle Route Action #5**
Use regional events, such as Onabike and RAGBRAI to promote bicycling opportunities in the Loess Hills Scenic Byway Corridor.

***Maps***

Proposed Bicycle Routes

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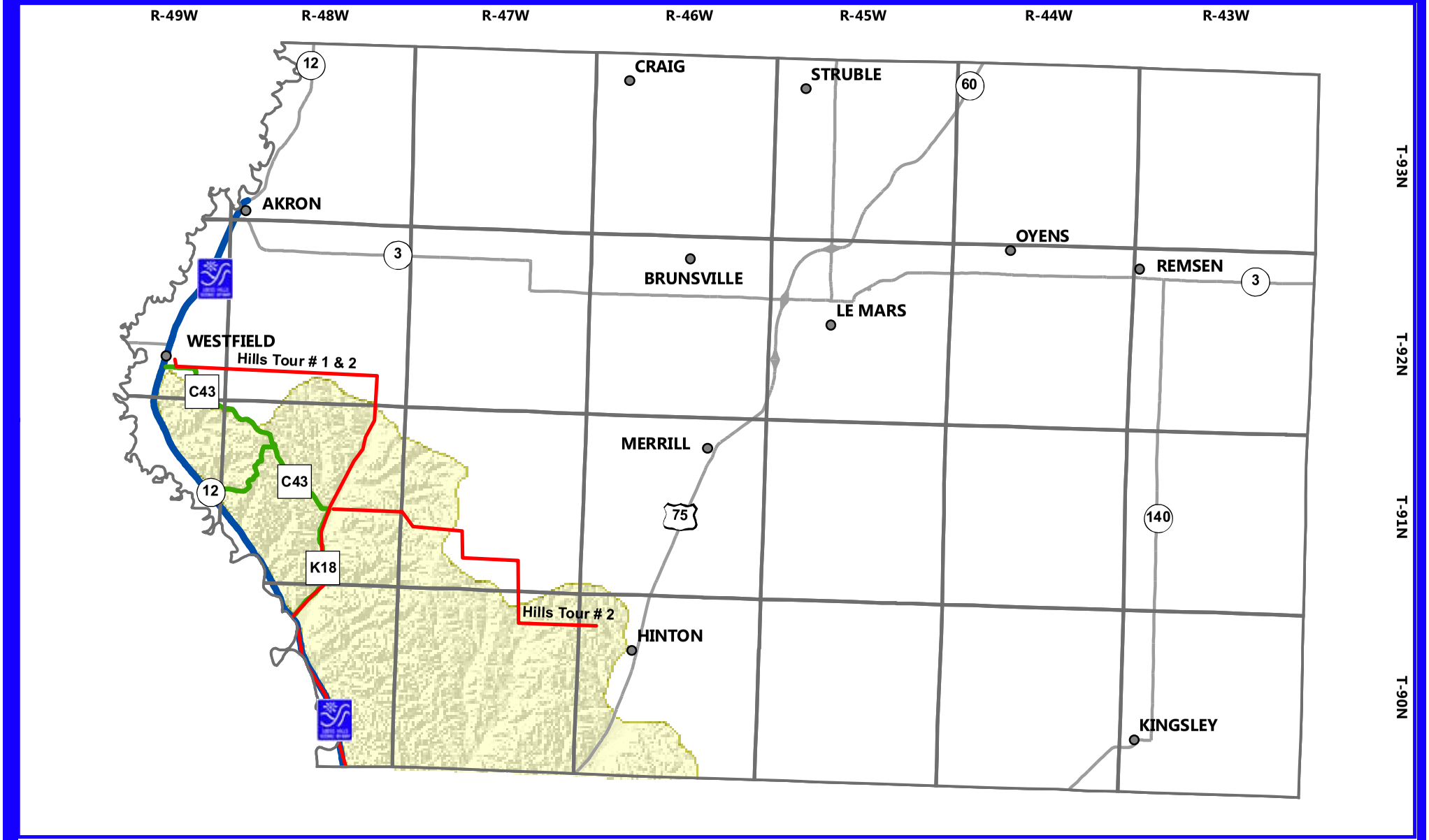
# Proposed Bicycle Routes

## Plymouth County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department

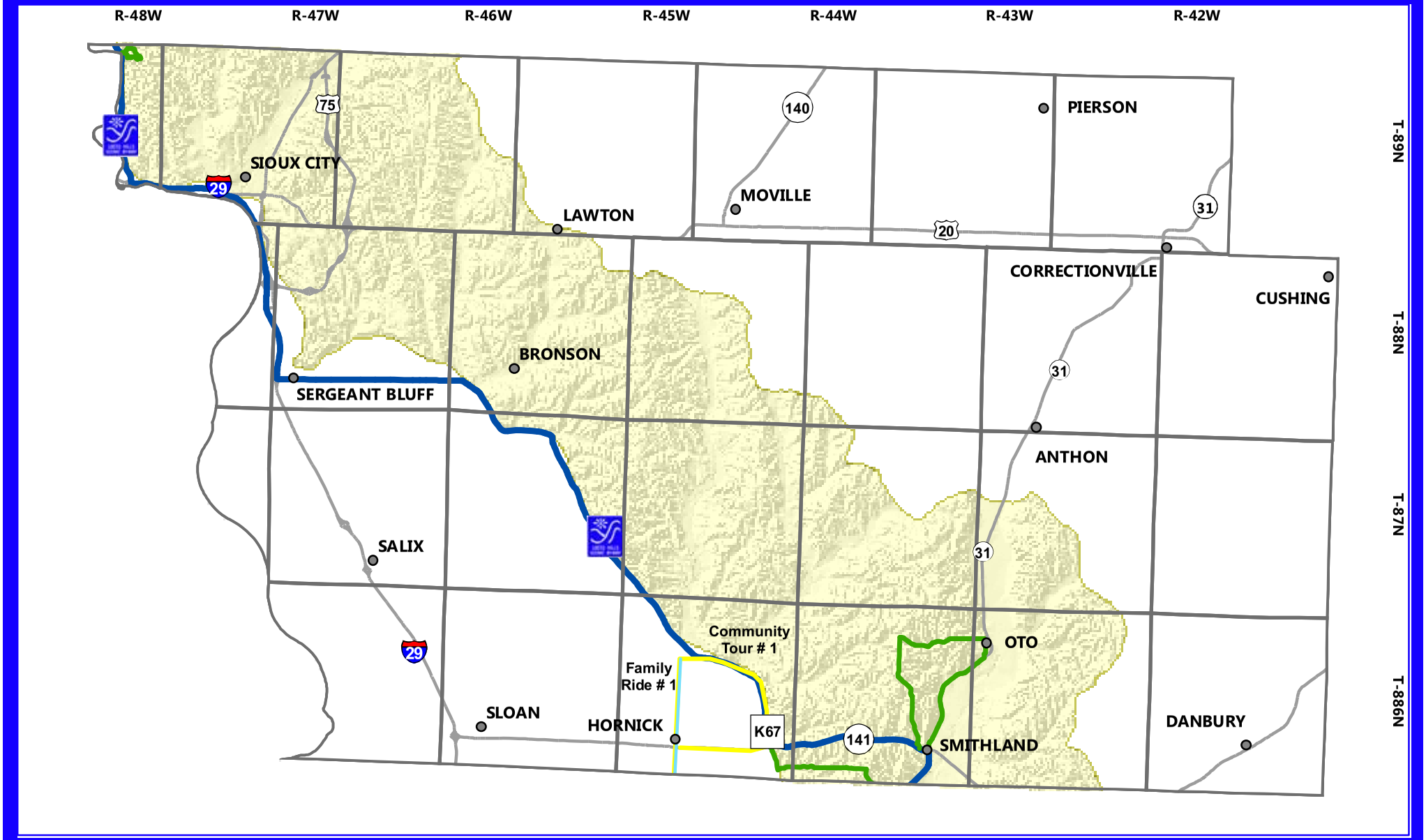


# Proposed Bicycle Routes

## Woodbury County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department




Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Family Ride Bicycle Route
Community Tour Bicycle Route
Township Line
Loess Hills Landform Region

0 1.25 2.5 5 7.5 Miles

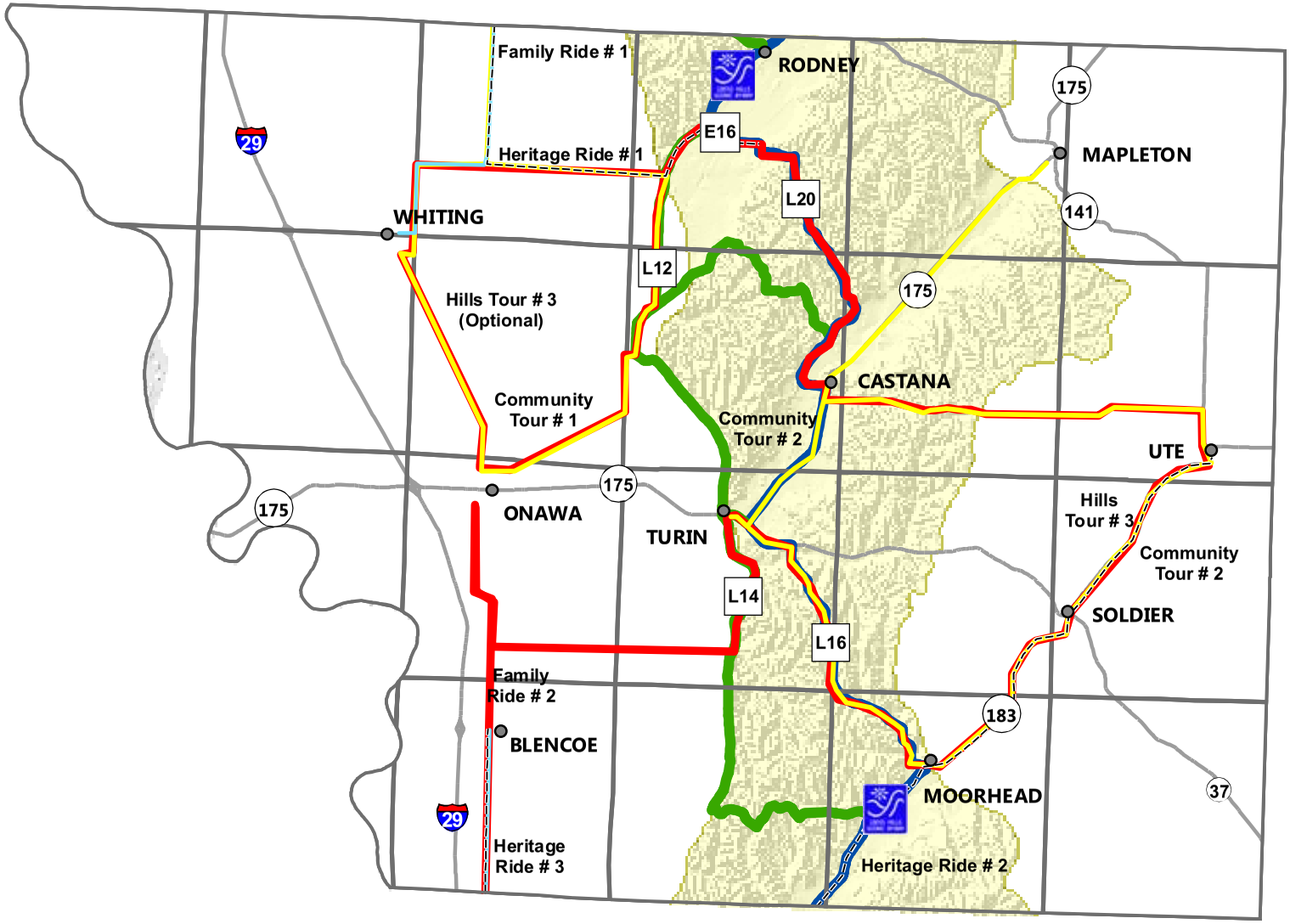
N W E S

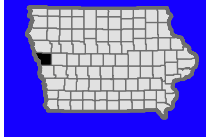
# Proposed Bicycle Routes

## Monona County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



- Loess Hills Scenic Byway Spine
- Loess Hills Scenic Byway Loop
- Township Line
- Loess Hills Landform Region
- Heritage Ride Bicycle Route
- Family Ride Bicycle Route
- Community Tour Bicycle Route
- Hills Tour Bicycle Route

0 1.25 2.5 5 7.5 Miles

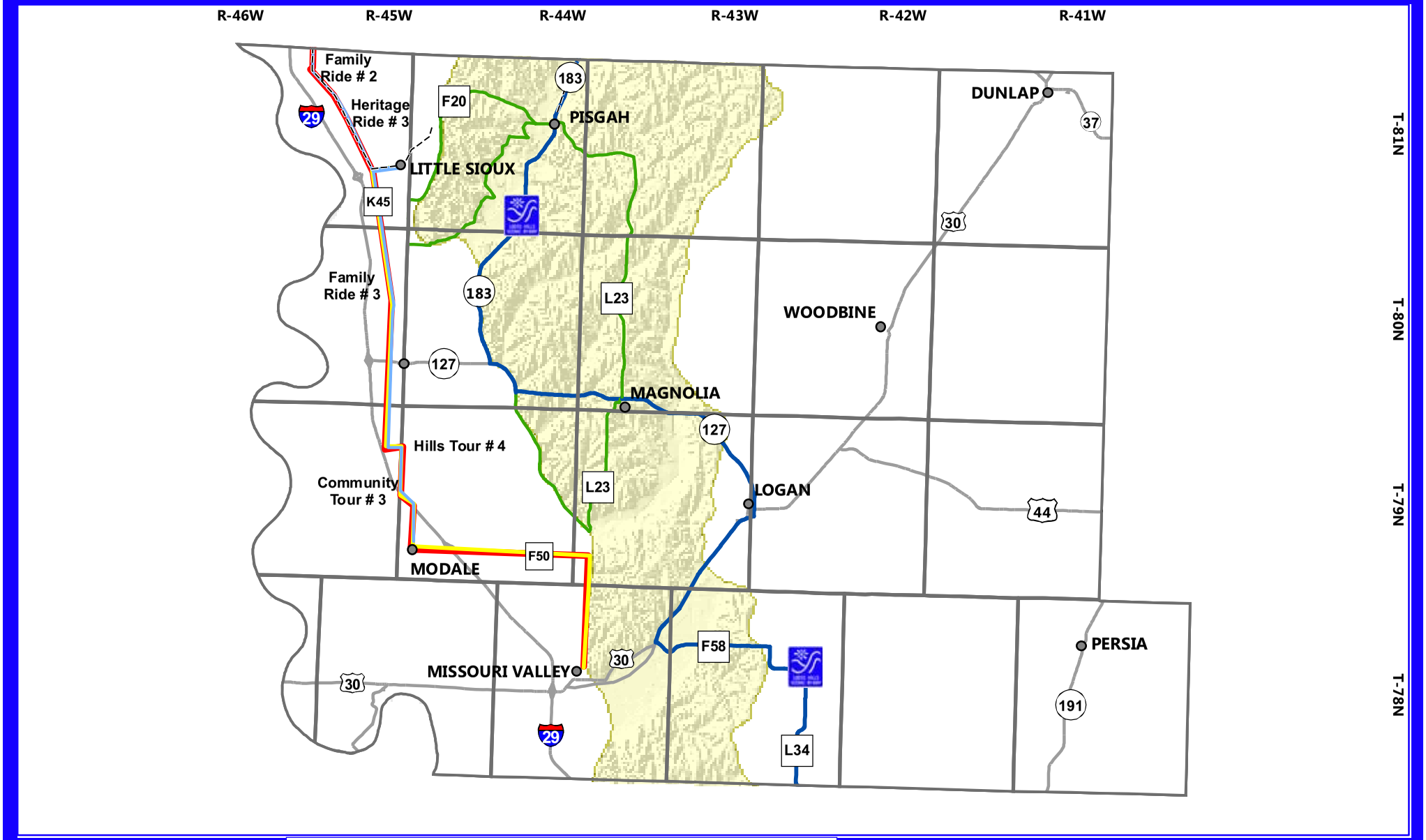
N W E S

# Proposed Bicycle Routes

## Harrison County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department

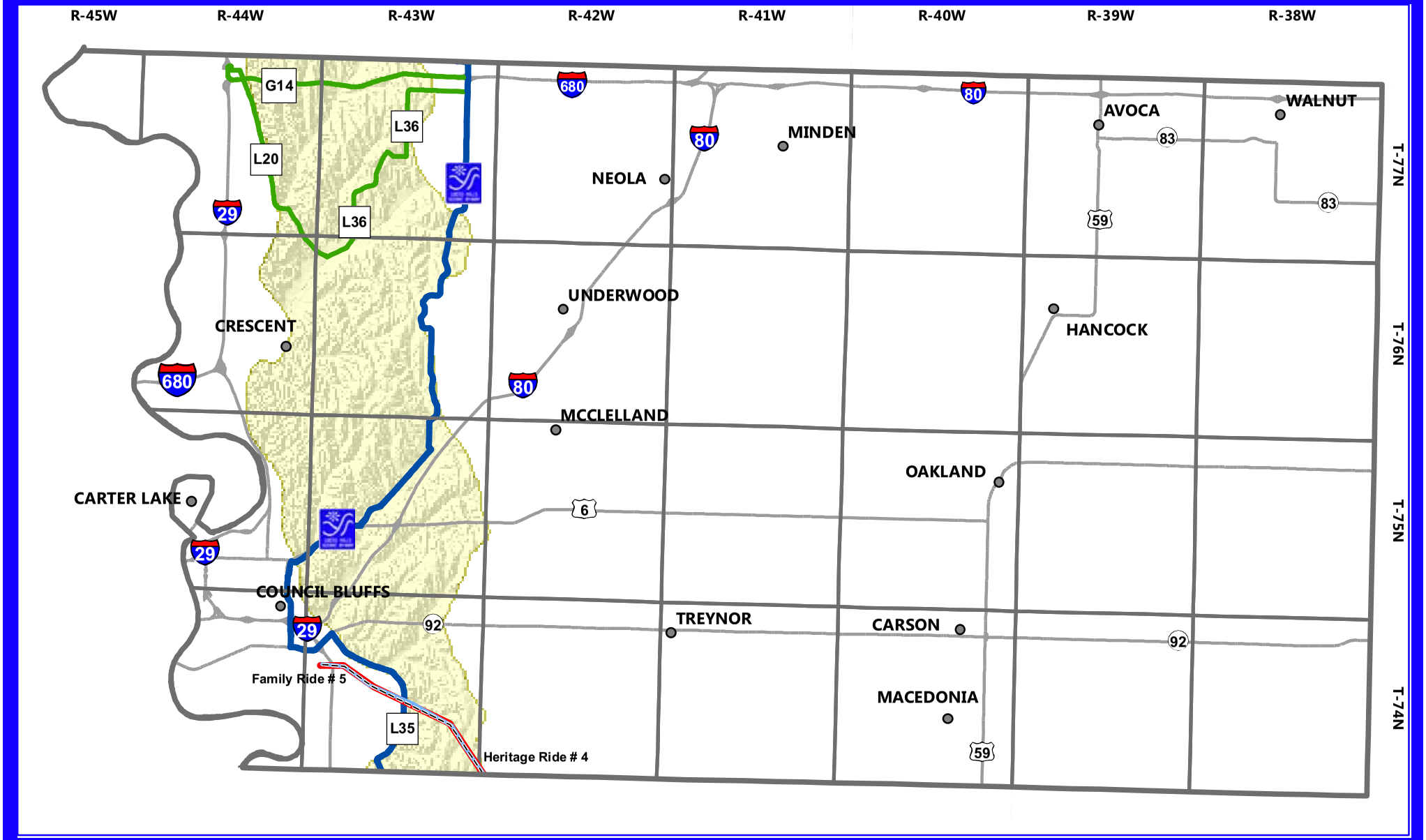


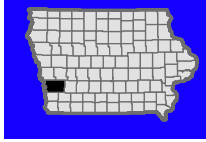
# Proposed Bicycle Routes

## Pottawattamie County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Township Line
Loess Hills Landform Region
Heritage Ride Bicycle Route
Family Ride Bicycle Route
Hills Tour Bicycle Route
Highways

0 1.25 2.5 5 7.5 Miles

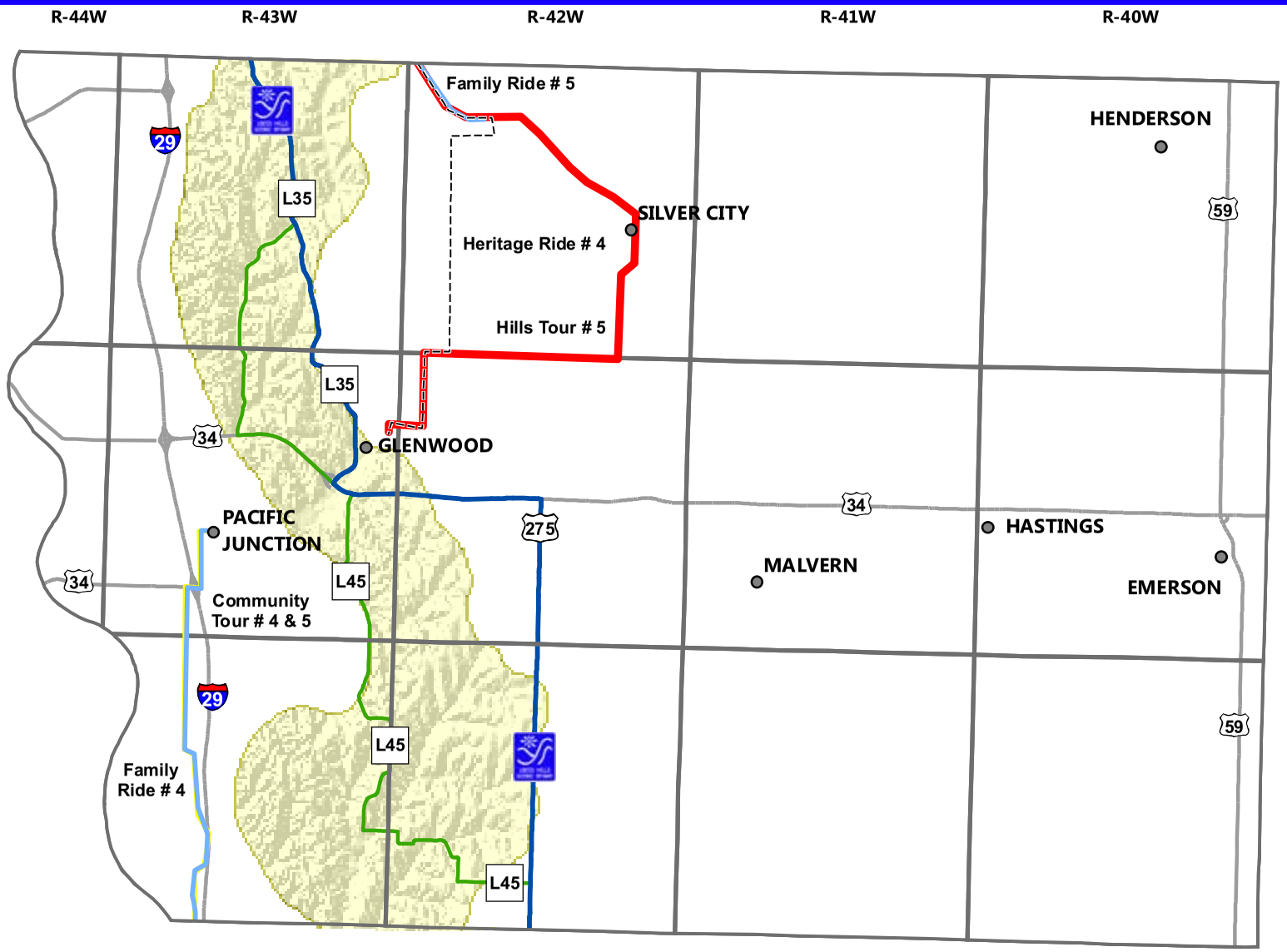
N W E S

# Proposed Bicycle Routes

## Mills County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department




Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Township Line
Loess Hills Landform Region
Heritage Ride Bicycle Route
Family Ride Bicycle Route
Community Tour Bicycle Route
Hills Tour Bicycle Route

0 1 2 4 6 Miles

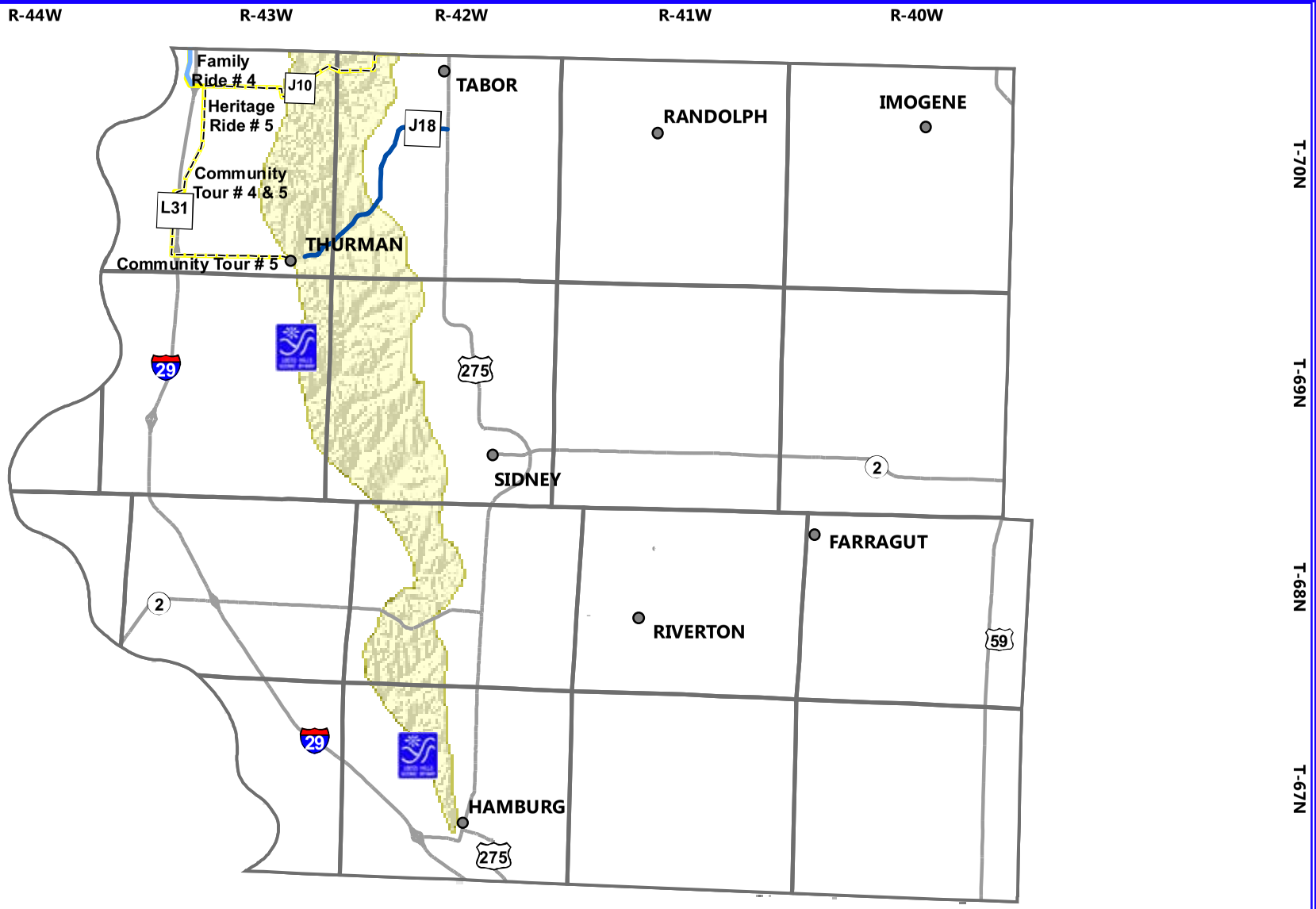
N W E S

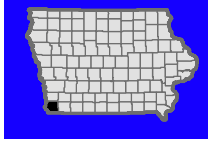
# Proposed Bicycle Routes

## Fremont County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Township Line
Loess Hills Landform Region
Heritage Ride Bicycle Route
Family Ride Bicycle Route
Community Tour Bicycle Route

0 1.25 2.5 5 7.5 Miles

N W E S

## Interpretative Programs and Activities

Interpretive programs and activities effectively share the stories of the Loess Hills in ways that will encourage interest, relate and reveal information, and present unified messages. Brochures, interpretive signs at attractions and self-guided auto tours are some of the ways travelers can learn about and enjoy the intrinsic qualities of the Loess Hills Scenic Byway Corridor.

There are fundamentally two ways to present materials to the visitor: informational style or interpretive style. The difference between the two styles is not what is presented but how it is presented. Informational styles simply dispense the facts, the way a field guide lists and describes species. The interpretive style, on the other hand, communicates a story or larger message and provokes a desired response by the viewer.

Interpretation is a communication process designed to reveal meanings and relationships of our cultural and natural heritage to the public (visitors) through first-hand experiences with objects, artifacts, landscapes or sites (Veverka 1994, 19).

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Interpretive Sign at Waubonsie State Park — Golden Hills

### *What is an Interpretive Program?*

The main goal of an interpretive program is to translate information from the technical language of experts to the "everyday" language of the visitor. Visitors to the Loess Hills should receive information in a way that they can understand and take away with them. An interpretive program for the Loess Hills Scenic Byway Corridor should strive for the following principles of interpretation (Veverka 20, 1994):

- Provoke the attention or curiosity of the audience;
- Relate the message to the everyday life of the audience;
- Reveal the essence of the subject through a unique viewpoint;
- Address the whole--show the logical significance of an object to a higher level concept or story line; and
- Strive for message unity--use a sufficient but varied repetition of cues to create and accentuate a particular mood, theme, aura or atmosphere.

Interpretive programs should enhance the experience and understanding of the visitor. An interpretive program for the Scenic Byway Corridor should communicate the goals and objectives of the Scenic Byway, tell the Loess Hills story and reveal meanings of and relationships between the intrinsic qualities of the Corridor.

### *Developing an Interpretive Program*

Establishing a steering committee of Scenic Byway stakeholders should be the first step in developing an interpretive program. Committee members will be the primary participants in the interpretive planning process. The steering committee will determine responsibilities for the interpretive program, secure the necessary funding and establish the time frame for implementation.

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The following model should guide the interpretative program for the Loess Hills Scenic Byway Corridor (Veverka 32, 1994):

- WHAT - Determine the resource, object, or concept that will be interpreted to visitors. Research information that will provoke the visitor.
- WHY - Develop objectives for interpretive programs and projects. Determine the objectives for the interpretive message(s). These should include at least one of the following:
    - ◊ Learning Objective;
    - ◊ Behavioral Objective; and
    - ◊ Emotional Objective.

- WHO - Analyze the visitor. Who is the audience?
- Determine HOW/WHEN/WHERE to use interpretive signs, activities, brochures and other types of media considering:
    - ◊ Site location;
    - ◊ How many signs to use;
    - ◊ What size signs;
    - ◊ Permanent or seasonal;
    - ◊ Signs versus other interpretive activities or media;
    - ◊ Brochure types;
    - ◊ Location for distribution of brochures; and
    - ◊ Interpretive programming sites.
- SO WHAT - Evaluate effectiveness of the message.
- IMPLEMENTATION AND OPERATIONS - Who is responsible for going from plan to reality?

In addition to the above planning process, some complementary tasks may be:

- Research and review sign plans and related activities of other scenic byways and similar attractions;
- Integrate interpretive plan signage into Sign Plan for the entire Scenic Byway; and
- Research current sign design, construction, and maintenance practices as well as laws and regulations governing the design, construction, and placement of signs.

### *Interpretive Program Actions*

**Interpretive Program Action #1**
Establish an Interpretive Program Steering Committee with representatives of Scenic Byway stakeholder organizations.

**Interpretive Program Action #2**
Develop and implement an interpretative plan and program for the Loess Hills Scenic Byway Corridor.

***Drawings***

- Prototype Interpretive Signs - Drawing

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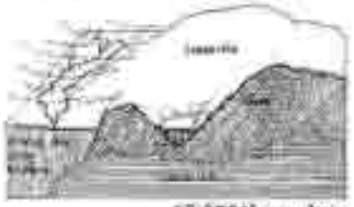
## Iowa's Loess Hills

# An American Treasure

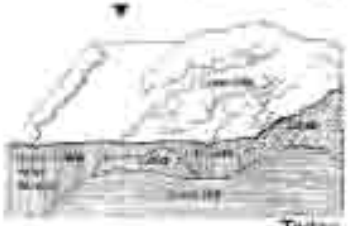
Iowa Dept. of Natural Resources
Iowa West Foundation
Golden Hills Resource Conservation and Development
Western Iowa Tourism Region

Crushed by glaciers, carried by the wind, carved by rain, and inhabited by rare and unusual plants and animals, the Loess Hills of western Iowa possess natural features rarely duplicated anywhere else in the world. Only western Iowa and the Yellow River valley in China can boast of towering dunes of loess soil more than 200 feet deep. Iowa's Loess Hills extend in a narrow, two to ten mile wide band that skirts the Missouri River valley along Iowa's western border. The steep, sharp-featured landscape, with irregular peaks and saddles and distinctive "catstep" terraces, is the product of tens of thousands of years of deposition and erosion. The rugged landscape and strong local contrasts in climate and soil conditions provide a desert-like habitat for a number of rare and unusual native plant and animal communities, many of which can be found in Iowa only in the Loess Hills.



15,000 Years Ago

7,500 Years Ago



Today

*The Iowa Loess Hills are composed of unbroken [illegible] created by the grinding action of glaciers and wind deposited into dunes along the east edge of the Missouri River valley. As the climate warmed, these dunes were gradually stabilized by vegetation, a progression of [illegible] forests to prairie. Erosion continued to shape the hills. Native American hunting [illegible] impacted on the region prior to European settlers arrival in the 19th century. Grazing practices suppressed the natural wildfires that supplied the prairie's nutrients, thus allowing trees to once again encroach upon the hillsides and giving the hills their present appearance.*

## Loess Hills Scenic Byway

The Loess Hills Scenic Byway is a system of signed roads through the Loess Hills region of western Iowa. The Byway's main route consists of 220 miles of paved road. Travelers can also follow any of the Byway's 13 excursion routes. The Scenic Byway is easily accessible from Interstate 29. The Byway links the most spectacular scenic areas in the Loess Hills as well as many historic, natural, and recreational attractions. More information about the Scenic Byway is available at area welcome centers.

## Geologic Wonder

The Loess Hills are a product of the Illinoian and Wisconsinan glacial periods when huge quantities of wind-blown silt, or loess, accumulated to depths of over 200 feet. Most of the loess deposits occurred between 18,000 and 150,000 years ago. The silt particles that form the Loess Hills were produced by the grinding movement of glaciers on rock underneath. Glacial meltwater carried the silt downriver during the summer. In the winter, water flow slowed and the silt was deposited on the flood plain only to be picked up by strong winds and deposited again along the eastern edge of the Missouri River. Erosion of the loess soil during thousands of years has helped form this unique landscape.

## Iowa's Loess Hills

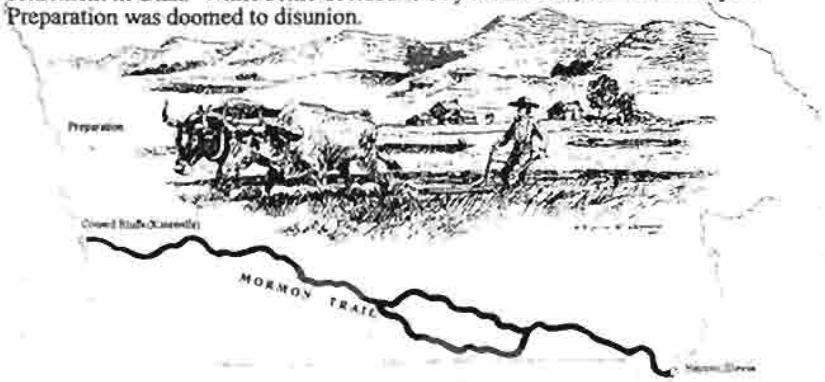
# Preparation Valley

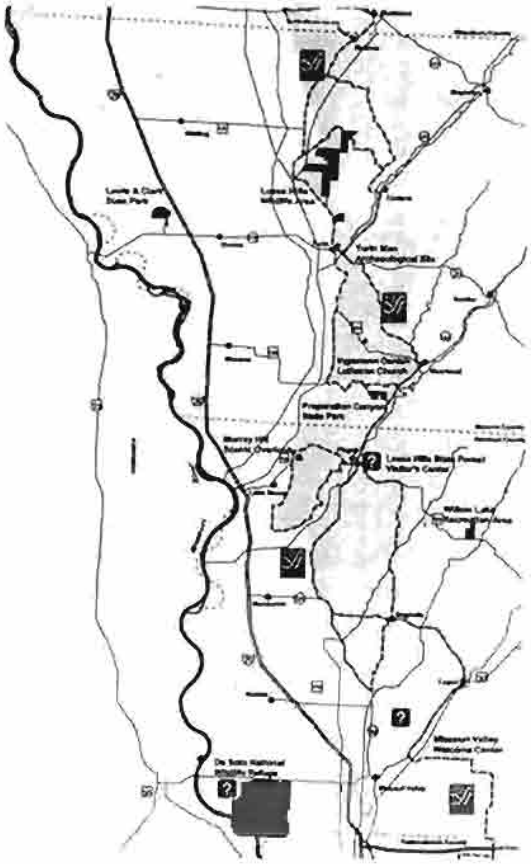
Iowa Dept. of Natural Resources
Iowa West Foundation
Golden Hills Resource Conservation and Development
Western Iowa Tourism Region

### MORMON INFLUENCE

In 1853, as an expedition of Mormons crossed Iowa enroute to Utah, 50 to 60 families left the main group to seek land to settle and to follow the teachings of their leader Charles B. Thompson, a former follower of Joseph Smith. They found the Soldier River valley and Loess Hills in this area very fertile for farming and an excellent location to establish their town "Preparation" and to further their schooling "in preparation for the life beyond." Houses were built, schools organized, and Mr. Thompson published Monona County's first newspaper here. The Preparation townsite was located in the eastern portion of the present state park.

Mr. Thompson convinced his followers that he had been appointed by the spirit "Baneemy" to be "chief steward" of their material goods. The faithful then turned over all their deeds and worldly possessions to him. Preparation prospered, but by 1858 several began to doubt Mr. Thompson's credibility and demanded he "render an account of his stewardship." He failed to satisfy his accusers and left the community for a few days. When he returned to secure the deeds and possessions entrusted to him, he narrowly escaped being hung by a lynch party and left the area. Many of Preparation's residents became disillusioned and headed west to rejoin the Mormon settlement in Utah. While some decided to stay in this area, the community of Preparation was doomed to disunion.



### PRAIRIE HERITAGE

Preparation Canyon State Park and the surrounding Loess Hills State Forest areas are examples of natural communities that have been influenced very little by humans. The hills continue to exhibit the diversity between "prairie" and "woodland" plant communities and the distinct geographical formations of wind deposited bluffs in contrast with the flat Missouri River floodplain. This area supports many plant and animal species not found elsewhere in Iowa. Overall, these Loess Hills offer a unique perspective of Iowa's prairie heritage.

Yucca

Coneflower

Big Bluestem

Leadplant

# Land Use Strategies

Land-use decisions in the Scenic Byway Corridor should be sensitive to impacts on the intrinsic qualities or resources that make the Loess Hills of western Iowa unique in the world. The construction of houses and roads, expansion of urban areas, mining and agriculture have dramatically changed the natural features of the Loess Hills in many areas of the Scenic Byway Corridor.

More than any other activity, land-use decisions will determine the future condition of resources in the Loess Hills Scenic Byway Corridor. In order to preserve the intrinsic qualities of the Scenic Byway Corridor, public officials responsible for overseeing land use in the Loess Hills must exercise their authority. Local governments should take the lead in working with land owners, private entities and public agencies to protect the resources of the Loess Hills Scenic Byway Corridor.

## *Assessment of Land Use Regulations*

All seven counties in the Loess Hills Scenic Byway Corridor have land use regulations in place. Through all of the county comprehensive plans, there is a general agreement that development within the counties is desirable and private property rights should be protected, but not at the expense of the area's scenic, agricultural and environmental resources.

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Most county comprehensive plans and zoning ordinances have been relatively recently updated, though the detail and specific provisions of the ordinances vary. The list below includes the comprehensive plans and zoning codes reviewed and the dates published.

- Fremont County Comprehensive Plan, 2006
- Harrison County Comprehensive Plan, 2003
  Harrison County Zoning and Subdivision Ordinance, 2001
- Mills County Comprehensive Plan, 2002
  Mills County Zoning Ordinance, 2007
  Mills County Subdivision Ordinance
- Monona County Comprehensive Plan, 2007
- Plymouth County Comprehensive Plan, 1999
  Plymouth County Zoning Ordinance, 2006
- Pottawattamie County Comprehensive Plan – 2013 (2004)
- Woodbury County Comprehensive Plan, 2005

Woodbury County Zoning Ordinance, 2008
Woodbury County Subdivision Ordinance, 2008

The most widely applied zoning district in the Loess Hills region is general agriculture. This district allows a broad range of agricultural activities such as crop production, feedlots, and one and two family dwellings and non-agricultural activities such as schools, churches and cemeteries. In areas with the highest residential growth, cities and counties distinguish between general agriculture districts and residential agriculture districts. The distinction recognizes the importance of farming to the region and limits the spread of residential development by setting high minimum lot sizes ranging from 30 to 40 acres. Residential development is directed, instead, to agriculture state or acreage residential districts which allow for lots as small as 2 acres, and limit the highest intensity production agriculture uses to prevent conflicts between homeowners and producers.

All of the Loess Hills Scenic Byway counties, either in comprehensive plans or zoning ordinances, recognize the unique natural qualities of the Loess Hills. A common designation is a Loess Hills Overlay or Conservation Development district. These districts impose a second level of protection for unique landforms, scenic vistas, native vegetation, and natural habitat. By placing additional protections for erosion, vegetation, intensive or highly visible land uses such as, feedlots and telecommunications towers, counties are more able to protect the fragile natural conditions and scenic beauty of the Loess Hills.

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Particularly around the region's growing population centers, Planned Unit Developments (PUD), allow residential development while still preserving open space and distinctive Loess Hills features. Planned developments generally require clustering of residences to preserve common open space. The intent is for these developments to be designed to preserve the area's natural characteristics rather than development changing the nature of the area.

These land use strategies are relatively new to the Loess Hills and offer protections that were not in place even ten years ago. Still, the impact land use decisions have on the Loess Hills can not be overstated. All land use decisions and regulations should be carefully considered to ensure that the Loess Hills remain a natural and scenic treasure for western Iowa.

Home construction in the Loess Hills Golden Hills

### *Purpose and Value of Land Use Regulation*

Land use regulations can guide the direction, speed and quality of land development. Zoning is the principal means in the United States to direct and manage land use. Zoning divides a county or community into districts (zones) that specify the different land use controls on each district. Zoning originated in part as a means of protecting the health and safety of inhabitants in major cities. Today, zoning is a tool to direct land use at the local level all across the country. Zoning requirements are laid out in two documents: the zoning map and the zoning ordinance (So 254-255, 1988).

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According to the Standard State Zoning Enabling Act of the 1920s, zoning shall be in accordance with a comprehensive plan (So 78. 1988). Comprehensive plans are a reflection of a community's or county's values and vision for the future. The following component's are usually part of a comprehensive plan:

- Demographics;
- Land use - current and future;
- Infrastructure; and
- Facilities.

Comprehensive plans can also address housing, social services, economic development, open space and other issues related to local conditions or needs. Comprehensive planning establishes a record of existing conditions, projects future needs and presents local goals and objectives which provide a guide for making land use decisions. It should be noted, however, that comprehensive plans are expressions of intent. Until the intent is actually written and accepted as zoning regulations, the protections outlined in comprehensive plans may not be easily enforced.

***Model Ordinances for the Loess Hills Scenic Byway Corridor***

Model ordinances have been developed which can be applied by counties and communities in the Loess Hills Scenic Byway Corridor. These ordinances are presented in a separate section "Conservation Strategies for Intrinsic Qualities" at the end of this chapter. The model ordinances developed include:

- Overlay District Ordinance;
- Sign Ordinance;
- Ridge and Hillside Ordinance;
- Subdivision Ordinance;
- Planned Conservation Development Ordinance;
- Mining/Mineral Extraction Ordinance;
- Telecommunications Towers and Antennas Ordinance;
- Small Wind Energy Systems Ordinance; and
- Wind Energy Facility Ordinance.

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In the case of the Loess Hills Scenic Byway Corridor, *the Corridor Management Plan* can function as a comprehensive plan. The *Corridor Management Plan* defines specific boundaries of the Loess Hills landform region in the same manner as a comprehensive plan. The Loess Hills landform region is described in writing and illustrated on a series of maps at the end of this chapter.

The cities and counties within the Loess Hills Scenic Byway Corridor have two options for adopting the standards in the *Corridor Management Plan*.

- Cities or counties can adopt the entire plan as an amendment to the existing comprehensive plan with the qualification that only the areas of the jurisdiction that fall within the Scenic Byway Corridor are governed by its provisions.

- Cities or counties can adopt the model ordinances suggested in the plan to protect portions of the Loess Hills in their respective jurisdictions. Several counties have already successfully adopted versions the model ordinances.

The Overlay District Ordinance provides counties and communities with the means to identify and protect specific resources not currently protected under existing regulations (Institute 70, 1993). The Overlay District lays "on top" of existing regulations and supersedes any present zoning regulations. Local governments can determine where the boundaries of any Overlay District in the Loess Hills.

Counties and communities should cooperate in establishing Overlay District boundaries. Common boundaries will make enforcement of, and compliance with, land use regulations easier for officials and property owners. Cooperation in determining regulations and the area they cover in the Loess Hills will also aid in providing continuity of character in the Scenic Byway Corridor.

The model Sign Ordinance and Ridge and Hillside Ordinance address the need to protect the scenic resources of the Loess Hills Scenic Byway Corridor. These ordinances provide guidelines for counties and communities to control signage and regulate the construction of structures on ridgetops and hillsides in the Corridor. The model Subdivision Ordinance and the Planned Unit Development Ordinance will help counties and communities regulate residential development to protect resources in the Loess Hills. The model Mineral Extraction/Mining Ordinance will allow mining in the Loess Hills, but provide restrictions regarding location of operations and guidelines for reclamation. The model Telecommunications Towers and Antennas Ordinance regulates the installation of towers and antennas needed for cellular phones and other uses.

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In addition to land use regulations such as ordinances, counties and communities can make use of non-regulatory tools to encourage the protection of resources on private land in the Loess Hills Scenic Byway Corridor. Among the tools available to local governments is their ability to provide property tax exemption to land owners for forest and fruit tree plantings and native prairie and wetland areas. Descriptions of these property tax exemptions are included following the model ordinances section at the end of this chapter.

### *Land Use Actions*

**Land Use Action #1**
Counties and communities in the Loess Hills Scenic Byway Corridor should adopt the *Corridor Management Plan* as a comprehensive plan, or amendment to an existing comprehensive plan, for the Loess Hills landform region.

**Land Use Action #2**
Counties and communities in the Loess Hills Scenic Byway Corridor should evaluate the need for, make the necessary modifications to and adopt applicable model land use ordinances contained in the *Corridor Management Plan.*

**Land Use Action #3**
Local governments in the Loess Hills Scenic Byway Corridor should cooperate in the development and enforcement of land use regulations. In Iowa, 28E Agreements provide a means for government entities to share resources and services. Counties and communities may be able to structure such an agreement to effectively implement the land use regulations needed to protect resources in the Scenic Byway Corridor.

**Land Use Action #4**
Local governments in the Loess Hills Scenic Byway Corridor should encourage the protection of resources on private land in the Scenic Byway Corridor through the use of property tax exemptions.

**Land Use Action #5**
Scenic Byway stakeholder organizations should plan and conduct annual workshops for public officials, agency personnel and residents in the Corridor on the development and use of regulatory and voluntary land use tools that can protect resources in the Loess Hills.

***Model Ordinances, Maps and Tables***

- Conservation Strategies for Intrinsic Qualities - Model Ordinances
- Loess Hills Landform Definition - Map
- Loess Hills Landform Region Description - Table
- Example Overlay District - Map
- Land Use Land Cover - Map

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# Loess Hills Scenic Byway
*Corridor Management Plan*

# Conservation Strategies for Intrinsic Qualities

## Model Land Use Tools

Department of Landscape Architecture
College of Design
Iowa State University
August 1997
Update December 2008

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# TABLE OF CONTENTS


Introduction

Overlay Zoning District

Ridgeline and Hillside Conservation

Sign Ordinance

Subdivision Ordinance

Planned Conservation Development Ordinance

Mineral Extraction Ordinance

Telecommunications Towers and Antennas Ordinance

Small Wind Energy System Ordinance

Wind Energy Facility Ordinance

Property Tax Exemption Programs

References for Land Use Model Tools

Update References


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# MODEL LAND USE TOOLS
# LOESS HILLS SCENIC BYWAY CORRIDOR

## INTRODUCTION

Protecting the resources of the Loess Hills Scenic Byway Corridor can be done by utilizing many of the planning tools currently available to local governments. The model ordinances presented in this section of the *Corridor Management Plan* have been developed to assist public officials in implementing land use strategies protective of the intrinsic qualities of the Scenic Byway Corridor

It should be noted that these model tools are not in final form, but are examples of ordinances designed specifically to protect resources such as those in the Loess Hills. Each city/county should have its planning commission, attorney, city council, and/or board of supervisors review the contents of each model ordinance and determine how it applies to their current and future needs. If appropriate, the planning commission can recommend that any or all of the model ordinances be approved as part of the city/county comprehensive plan.

In order for the *Corridor Management Plan* to function as a basis for adopting the model ordinances, the county board of supervisors or city council must: 1) approve the *Plan* after review and comment of the planning and zoning commission and 2) appoint an individual or groups of individuals to oversee implementation of the land use regulations. Since the counties and communities in the Loess Hills share many of the same unique resources, the implementation of land use regulations may be accomplished most effectively through a 28E Agreement. Such an agreement will enable local governments to cooperate, as determined by the *Code* of *Iowa,* in the implementation of land use regulations to protect resources in the Loess Hills.

**Note:** Some of the model ordinances in this section contain commentaries designed to help local government officials better understand and apply specific aspects of these land use instruments. These commentaries should be deleted before the ordinance is adopted.

# MODEL TOOL
# LOESS HILLS SCENIC BYWAY CORRIDOR

## OVERLAY ZONING DISTRICT

*Commentary: The Loess Hills Scenic Byway Corridor Management Plan defines and maps the Loess Hills Landform Region. It also defines the specific resources, characteristics, and sensitive conditions of the region and contains recommendations for development and conservation policies.*

*ARTICLE 1 PURPOSE*
Each city/county should use the Overlay Zoning District as a guide for decisions concerning any part of the Loess Hills Scenic Byway Corridor. The objective of Overlay Zoning District regulations is to provide protection for specific natural or cultural resources that are not explicitly safeguarded under existing zoning regulations. Overlay Zoning District regulations are intended to supplement the regulations of the underlying zoning districts, if any, and to provide for harmony and compatibility of developments in the Loess Scenic Byway Landform Region as defined in the Loess Hills Scenic Byway Corridor Management Plan.

The Overlay Zoning District is a statement of:
1. Recognition of the value of the Loess Hills resources;
2. Issues impacting these resources;
3. Vision of the future Loess resources; and
4. Policy related to the development and conservation of the Loess Hills resources.

To identify the area an Overlay Zoning District is to serve, city and county officials should:
1. Identify, map and prioritize the resources for development and conservation; and
2. Outline criteria for determining development and conservation priorities/policies.

*ARTICLE 2 ADMINISTRATION AND ENFORCEMENT*
County and city officials, along with the private sector, should use the Overlay Zoning District as a guide for decisions concerning the Loess Hills Landform Region. Enforcement would relate to existing or newly enacted ordinances.

*ARTICLE 3 HOW IT WORKS*
Overlay zoning districts are generally laid on top of existing zoning regulations. If there are existing zoning districts, county and city governments can map out the environmentally sensitive or historically significant areas that require additional protection. Governments can then isolate and protect specific resources that are not covered in existing zoning regulations.

The boundary lines of the Overlay Zoning District should be very specific. For example, the unit of measure can be by section of land or township and then further described by using quarter section lines running north-south or east-west, i.e. The west 1/4 of Section 4. T32. R68 W; or the boundary lines can be federal or state highways or city/county

roads as long as they are identified by their route numbers. When in doubt of where specific boundary lines are located, the developer should pay for the boundary survey.

There are several ordinances included in the Overlay District Ordinance, such as a Sign Ordinance, a Scenic Byway Ordinance etc. These were included here to protect those intrinsic qualities that are unique to the Loess Hills Scenic Byway Corridor. However, each of these ordinances can be adopted as individual ordinances, especially if a county or city does not want to use the Overlay District Ordinance, but wants the ordinance to cover the entire county or city.

*ARTICLE 4 USE REGULATIONS*
The Loess Hills Scenic Byway Corridor, or any area designated within the Corridor, can be designated an Overlay Zoning District and superimposed on existing districts in the city/county. All uses, dimensional requirements and other provision of the county or city zoning ordinances are applicable and will remain in effect except where the Overlay Zoning District imposes greater restrictions or requirements. To the extent that the Overlay Zoning District is more restrictive than the underlying district, the requirements of the Overlay Zoning District shall control. The Overlay Zoning District has characteristics of steep slopes and valleys with heavy forestation and ridge tops of forests and uncultivated grassland. It also recognizes that the loess-based soil in the area is erodible and that vegetation is necessary to hold such soil in place by reducing the speed (velocity) and volume of storm water run-off.

*ARTICLE 5 PERMITTED USES*
All permitted uses within the underlying zones shall be permitted in the Overlay Zoning District in the Loess Hills Scenic Byway Corridor except as noted in the Prohibited Uses and Special Permit uses in the sections below.

*ARTICLE 6 PROHIBITED USES*
1. Solid waste landfills and dumps;
2. Junkyards and salvage yards;
3. Mobile home sales; and
4. Mobile homes not included as part of a mobile home park.

*ARTICLE 7 ACTS REQUIRING A SPECIAL USE PERMIT*

**7.1 Grading and Excavating**
The removal, addition or relocation in any 12 month period of soil or other fill materials from any single parcel owned or controlled by any single entity, including joint tenants or co-tenants when one or more of the following conditions are met:

a. Slopes <14% in any 12 month period;
    1. Disturbed area exceeds 1/2 acre
    2. Volume exceeds 200 cubic yards
    3. Duration of activity exceeds 30 consecutive days
b. Slopes <14%;
    1. 17% - 30%: when disturbed area exceeds 5,000 square feet.
    2. 30% - 50% when disturbed area exceeds 1,000 square feet

**7.2 Removal of Vegetation**
a. Slopes <14%;

1. Destruction or removal of: more than 1/2 acre of tree canopy in any 12 month period and/or 2 acres or more of canopy of trees in any 6 year period.

b. Slopes >1%;

1. Removal or destruction of tree canopy and/or other vegetation - 17%30% when amount of vegetation exceeds 5,000 square feet and/or 30%-50% when amount of vegetation exceeds 1,000 square feet. ("Canopy of trees" Maximum perimeter of vegetation of any tree or group of trees growing to-tether as viewed from overhead).

**7.3 Disturbance of Sensitive or Unique Features**

a. Any removal, addition or relocation of soil or other fill materials, or the removal or destruction of any vegetation on or within 50 feet of any land which contains one or more of:
   1. Native prairies;
   2. Intermittent and perennial streams;
   3. Loess bluffs and glacial till; and/or
   4. Extremely steep slopes
   5. Tree canopy

**7.4 Exceptions**

a. Plowing or disking for agricultural production of land used for annual crop; or feeding animals in any 1 year of the last 5.

b. Dedicated street or drainage right-of-way.

c. Purpose of and incidental to construction of single family residence on an existing tract or lot.

*Commentary: Federal and State Erosion and Sediment Control Regulations require that any land-disturbing activity that will disturb an area of one or more acres is required to have a National Pollutant Discharge Elimination System (NPDES) permit for stormwater discharge. A land-disturbing activity includes actions that alter the surface of the land. Such activities include, but are not limited to, such actions as clearing, grading, and excavation. Special use permit requirements should be regarded as supplemental requirements and not to be used in place of state and federal sediment control regulations*

*ARTICLE 8: CRITERIA AND STANDARDS*

To obtain approval of a Special Use Permit the proposal must be in accordance with the following criteria and standards and for the purpose of the Special Use Permit. (Control measures in addition to those listed below may be imposed as conditions of permit as needed to reduce or prevent environmental damage to meet the standards in this section):

**8.1 Grading and Excavation**

a. Erosion and sediment control: minimize erosion on the site, siltation of waterways, loss of sensitive soils, and deterioration/damage to man-made structures, wildlife habitat, and protective vegetation. Erosion and Sedimentation Plan must be prepared per State Environmental Safety Commission (SESC) Manual.

b. Excessive cut and fill: Development and construction plans which minimize cut/fill for land use.

c. Dust control: Dust control measures per SESC Manual.

d. Surface drainage: avoid alteration of existing drainage patterns or increase in storm runoff volume or velocity from site that would exceed waterway capacity or damage to natural/human-made environment. When it exceeds capacity or cause damage, a storm water control plan must be developed per SWMD.

**8.2 Removal of Vegetation**

a. Re-vegetation: preserve as much natural vegetation and/or tree cover as possible. Large areas of woodland destroyed are to be restored as much if possible.
b. Buffer strips/corridors: wooded area (wildlife corridor/windbreak) must be preserved and/or established.
c. Stabilization: see "Erosion and Sediment Control" under "Grading and Excavating".
d. Safety: Tree cutting shall be carried out in a safe manner.
e. Solid waste: see "Solid Waste" under "Grading and Excavating".

**8.3 Disturbance of Sensitive or Unique Features**

a. Effects to features: avoid damaging or destroying unique or sensitive features; or causing significant changes to the ecosystem that would adversely affect features.
b. Assessment of Effects: identify the direct, indirect, and adverse and beneficial of proposed activity. Identify alternatives, including potential effects of alternatives.
c. Mitigation of damage: if there are no feasible alternatives to prevent damage or destruction to the sensitive/unique feature; Conduct a study to:
   1. Identify extent of adverse effects, and
   2. Prepare Sensitive Unique Feature Mitigation Plan to identify mitigation measures.

   The plan must be prepared by persons qualified in natural sciences and engineering or related fields and submitted to the county or city for review by officials and experts in the same areas of concern.
d. Application Requirements:
   1. Detailed grading plan;
   2. Landscape plan;
   3. Location and type of any unique or sensitive features as designated;
   4. Additional plans if applicable: Erosions and Sediment Plan (including dust control), Storm Water Control Plan, Assessment of effect on water table, and perimeter buffer and site screening plan; and
   5. Additional information as deemed necessary by the planning director, board of supervisors or other individual or board appointed to approve Special Use Permits for review of proposal.

*ARTICLE 9 WHEN EFFECTIVE*

This ordinance shall be effective after its final passage, approval, and publication as provided by law. Passed and approved this __ day of _____.

Chairperson: _____

ATTEST: _____, City Clerk/County Auditor

# MODEL TOOL
# LOESS HILLS SCENIC BYWAY CORRIDOR

## RIDGELINE AND HILLSIDE CONSERVATION ORDINANCE

*ARTICLE 1 INTRODUCTION*
This ordinance covers all land designated in the Overlay Zoning District of the Loess Hills Scenic Byway Corridor. It covers all land within _____ feet from specific lines connecting a series of the primary ridges in the city/county of _____ , Iowa, but in any event shall consist of those ridgeline and hillside areas specifically depicted and set forth on a map entitled "Ridgeline and Hillside Conservation Area". When in doubt of location of boundary, developer pays for a survey.

*ARTICLE 2 HOW IT WORKS*
A site plan approval is required for new development. The general criteria calls for no undue adverse effect on the scenic and natural beauty as viewed from significant viewpoints on roadways in the Loess Hills Scenic Byway Corridor Overlay Zoning District. This is defined as:

1. _____foot building height maximum;
2. Building placement as directed by current zoning;
3. Landscaping;
4. Placing utilities underground;
5. Grading restrictions; and
6. Constructing access roads that follow the Grading and Excavation Section of the Overlay Zoning Ordinance

ARTICLE 3 WHEN EFFECTIVE
This ordinance shall be effective after its final passage, approval, and publication as provided by law. Passed and approved this __ day of _____.

Chairperson: _____

ATTEST: _____, City Clerk/County Auditor

# MODEL TOOL
# LOESS HILLS SCENIC BYWAY CORRIDOR

## SIGN ORDINANCE

*Commentary: This model sign ordinance is designed for effective enforcement and administration. It is far simpler than many local sign ordinances, but it can be simplified even more by following suggestions contained in some of the commentaries. The model should not require major modification for local adoption. The commentaries sometimes identify areas for possible modification and explain the reasons why sections have been drafted as they have.*

*Commentary has been omitted for sections that seem self-explanatory and that are unlikely to require modification in most communities. Some general changes to the model must be made by some local governments.*

### *ARTICLE* 1 *INTRODUCTION*

The term "city/county" is used throughout and should be replaced by the actual designation of a local government. The term "ordinance" is used throughout and should be replaced by "resolution" or "bylaw" if that is appropriate.

Administrative matters are all referred to the "director," so that only the definition of "director" must be modified for administrative purposes. There are cross-references to the "zoning ordinance" that should be modified to refer to a "development ordinance" or a particular article of the city code when there is no "zoning ordinance" as such. The numbering system used to define ordinance sections might need to be adapted to local circumstances.

This ordinance can be adopted for the entire county or city, not just the area designated in the Overlay District Ordinance.

### *ARTICLE 2 ORDINANCE CONTENTS*


1. Introduction
2. Purposes
3. Computations
4. Master or Common Signage Plan
5. Signs in the Public Right-of-way
6. Signs Exempt from Regulation Under This Ordinance
7. Signs Prohibited Under This Ordinance
8. General Permit Procedures
9. Permits to Construct or Modify Signs
10. Temporary Sign Permits (Private Property)
11. Permits for Signs in the Public Right-of-Way
12. Time of Compliance: Nonconforming signs and Signs Without Permits
13. Sign Removal Required
14. Violations
15. Enforcement and Remedies

*ARTICLE* 3 *PURPOSE*

**3.1 The purpose of these sign regulations is:**

a. To encourage the effective use of signs as a means of communication in the city/county;
b. To maintain and enhance the aesthetic environment and the city's/county's ability to attract sources of economic development and growth;
c. To improve pedestrian and traffic safety;
d. To minimize the possible adverse effect of signs on nearby public and private property; and
e. To enable the fair and consistent enforcement of these sign restrictions.

This sign ordinance is adopted under the zoning authority of the city/county in furtherance of the more general purposes set forth in the zoning ordinance.

*Commentary. This statement* of *purposes should be modified to reflect any particular local concerns and issues and to refer to any relevant sections* of a *community's comprehensive plan. The word "city/county" should be changed here and elsewhere in the model* as *appropriate.*

**3.2 Applicability-Effect**

A sign may be erected, placed, established, painted, created, or maintained in the city/county only in conformance with the standards, procedures, exemptions, and other requirements of this ordinance. The effect of this ordinance as more specifically set forth herein, is:

a. To establish a permit system to allow a variety of types of signs in commercial and industrial zones, and a limited variety of signs in other zones, subject to the standards and the permit procedures of this ordinance;
b. To allow certain signs that are small, unobtrusive, and incidental to the principal use of the respective lots on which they are located, subject to the substantive requirements of this ordinance, but without a requirement for permits;
c. To provide for temporary signs without commercial messages in limited circumstances in the public right-of-way;
d. To prohibit all signs not expressly permitted by this ordinance; and
e. To provide for the enforcement of the provisions of this ordinance.

*Commentary. This section should be modified to reflect any deletions from or additions to the substantive provisions* of *this ordinance.*

**3.3 Definitions and Interpretation**

Words and phrases used in this ordinance shall have the meanings set forth in this section. Words and phrases not defined in this section but defined in the zoning ordinance of the city/county shall be given the meanings set forth in such ordinance. Principles for computing sign area and sign height are contained in Section 4. All other words and phrases shall be given their common, ordinary meaning, unless the context clearly requires otherwise. Section headings or captions are for reference purposes only and shall not be used in the interpretation of this ordinance.

*Commentary. This introductory paragraph should be modified to show a cross reference by code section or other appropriate citation to the general zoning or land use*

*regulations of the city/county if the sign ordinance is not fully integrated into those regulations. If it is fully integrated into those regulations, definitions that would be repeated should be deleted. If the definitions below are to be included in general regulations, they might need to be reordered. For example, "animated sign " might be better alphabetized under "sign, animated."*

**Animated sign**
Any sign that uses movement or change of lighting to depict action or create a special effect or scent.

**Banner**
Any sign of lightweight fabric or similar material that is permanently mounted to a pole or a building by a permanent frame at one or more edges. National flags, state or municipal flags, or the official flag of any institution or business shall not be considered banners.

**Beacon**
Any light with one or more beams directed into the atmosphere or directed at one or more points not on the same zone lot as the light source; also, any light with one or more beams that rotate or move.

**Building marker**
Any sign indicating the name of a building and date and incidental information about its construction, which sign is cut into a masonry surface or made of bronze or other permanent material.

**Building sign**
Any sign attached to any part of a building, as contrasted to a freestanding sign.

**Canopy sign**
Any sign that is a part of or attached to an awning, canopy, or other fabric, plastic, or structural protective cover over a door, entrance, window, or outdoor service area. A marquee is not a canopy.

**Changeable copy sign**
A sign or portion thereof with characters, letters, or illustrations that can be changed or rearranged without altering the face or the surface of the sign. A sign on which the message changes more than eight times per day shall be considered an animated sign and not a changeable copy sign for purposes of this ordinance. A sign on which the only copy that changes is an electronic or mechanical indication of time or temperature shall be considered a "time and temperature" portion of a sign and not a changeable copy sign for purposes of this ordinance.

*Commentary. The limit* of *eight times per day allows the posting* of *hourly stock market quotations* or *other changes that are generally made at intervals. This limitation places signs that change more frequently in the animated sign category, and animated signs are likely to be allowed in fewer locations than changeable copy signs.*

**Commentary message**
Any sign wording, logo, or other representation that, directly or indirectly, names, advertises, or calls attention to a business, product, service, or other commercial activity.

**Director**
The planning director of the city/county or his or her designee.

**Flag**
Any fabric, banner, or bunting containing distinctive colors, patterns, or symbols, used as a symbol of a government, political subdivision, or other entity.

**Freestanding sign**
Any sign supported by structures or supports that are placed on, or anchored in, the ground and that are independent from any building or other structure.

**Incidental sign**
A sign, generally informational, that has a purpose secondary to the use of the zone lot on which it is located, such as "no parking," "entrance," "loading only," "telephone," and other similar directives. No sign with a commercial message legible from a position off the zone lot on which the sign is located shall be considered incidental.

**Lot**
Any piece or parcel of land or a portion of a subdivision, the boundaries of which have been established by some legal instrument of record, that is recognized and intended as a unit for the purpose of transfer of ownership.

**Marquee**
Any permanent roof-like structure projecting beyond a building or extending along and projecting beyond the wall of the building, generally designed and constructed to provide protection from the weather.

**Marquee sign**
Any sign attached to, in any manner, or made a part of a marquee.

**Nonconforming sign**
Any sign that does not conform to the requirements of this ordinance.

**Pennant**
Any lightweight plastic, fabric. or other material, whether or not containing a message of any kind, suspended from a rope, wire, or string, usually in series, designed to move in the wind.

**Person**
Any association, company, corporation, firm, organization, or partnership, singular or plural, of any kind.

**Portable sign**
Any sign not permanently attached to the ground or other permanent structure, or a sign designed to be transported, including, but not limited to, signs designed to be transported by means of wheels; signs converted to A- or T-frames; menu and sandwich board signs; balloons used as signs; umbrellas used for advertising; and signs attached to or painted on vehicles parked and visible from the public right-of-way, unless said vehicle is used in the normal day-to-day operations of the business.

**Principal building**
The building in which is conducted the principal use of the zone lot on which it is located. Zone lots with multiple principal uses may have multiple principal buildings, but storage buildings, garages, and other clearly accessory uses shall not be considered principal buildings.

**Projecting sign**
Any sign affixed to a building or wall in such a manner that its leading edge extends more than six inches beyond the surface of such building or wall.

*Commentary. This definition is coordinated with the definition of "wall sign." See commentary there.*

**Residential sign**
Any sign located in a district zoned for residential uses that contains no commercial message except advertising for goods or services legally offered on the premises where the sign is located, if offering such service at such location conforms with all requirements of the zoning ordinance.

**Roof sign**
Any sign erected and constructed wholly on and over the roof of a building, supported by the roof structure, and extending vertically above the highest portion of the roof.

**Roof sign, integral**
Any sign erected or constructed as an integral or essentially integral part of a normal roof structure of any design, such that no part of the sign extends vertically above the highest portion of the roof and such that no part of the sign is separated from the rest of the roof by a space of more than six inches.

**Setback**
The distance from the property line to the nearest part of the applicable building, structure, or sign, measured perpendicularly to the property line.

**Sign**
Any device, fixture, placard, or structure that uses any color, form, graphic, illumination, symbol, or writing to advertise, announce the purpose of, or identify the purpose of a person or entity, or to communicate information of any kind to the public.

**Street**
A strip of land or way subject to vehicular traffic (as well as pedestrian traffic) that provides direct or indirect access to property, including, but not limited to, alleys, avenues, boulevards, courts, drives, highways, lanes, places, roads, terraces, trails, or other thoroughfares.

**Suspended sign**
A sign that is suspended from the underside of a horizontal place surface and is supported by such surface.

*Commentary. Although projecting signs are also generally "suspended" from* a *framework, this definition includes the type of sign (usually small) that hangs from the underside of* a *canopy or portico to inform pedestrians of the name or address of* a *building or of an entrance.*

**Temporary sign**
Any sign that is used only temporarily and is not permanently mounted.

**Wall sign**
Any sign attached parallel to, but within six inches of, a wall, painted on the wall surface of, or erected and confined within the limits of an outside wall of any building or structure, which is supported by such wall or building, and which displays only one sign surface.

*Commentary. The six-inch dimension is sound in concept but arbitrary in detail. The intent is to include within this definition flat signs that are fastened rather than painted on the surface, but to exclude from it signs that project significantly from the surface. This dimension may be freely adjusted, but* a *related adjustment must be made in the definition* of *projecting sign.*

**Window sign**
Any sign, pictures, symbol, or combination thereof, designed to communicate information about an activity, business, commodity, event, sale, or service that is, placed inside a window or upon the window panes or glass and is visible from the exterior of the window.

**Zone lot**
A parcel of land in single ownership that is sufficient size to meet minimum zoning requirements for area, coverage, and use, and that can provide such yards and other open spaces as required by the zoning regulations.

*Commentary. This definition may vary from the definition* of *lot in the zoning ordinance. It is* a *very important part* of *the operation* of *the model sign ordinance and should be modified only with great care.*

*ARTICLE* 4 *COMPUTATIONS*

The following principles shall control the computation of sign area and sign height.

**4.1 Computation of Area of Individual Signs**

The area "'a sign face (which is also the sign area of a wall sign or other sign with only one face) shall be computed by means of the smallest square, circle, rectangle, triangle or combination thereof that will encompass the extreme limits of the writing, representation, emblem, or other display, together with any material or color forming an integral part of the background of the display or used to differentiate the sign from the backdrop or structure against which it is placed, but not including any supporting frameworks, bracing, or decorative fence or wall when such fence or wall otherwise meets zoning ordinance regulations and is clearly incidental to the display itself.

**4.2 Computation of Area of Multi-faced Signs**

The sign area for a sign with more than one face shall be computed by adding together the area of all sign faces visible from anyone point. When two identical sign faces are placed back to back, so that both faces cannot be viewed from any point at the same time. and when such sign faces are part of the same sign structure and are not more than 42 inches apart, the sign area shall be computed by the measurement of one of the faces

*Commentary. Local practice varies on the treatment* of *multi-faced signs. The model ordinance counts only one face. Some cities/counties count both faces. Others compromise by computing the tote/ sign area* as 1.5 *times the* area of *one face. This section can be modified to conform with local intent and past local practice. The 42 inch dimension is somewhat arbitrary but is designed to prevent very large signs* or *signs on two sides of small buildings (such* as *automatic teller kiosks) from being treated* as *multi-faced signs; it still allows signs attached to opposite sides* of a *variety of sign structures to qualify* as *multi-faced signs.*

**4.3 Computation of Height**

The height of a sign shall be computed as the distance from the base of the sign at normal grade to the top of the highest attached component of the sign. Normal grade shall be construed to be the lower of (1) existing grade prior to construction; or (2) the newly established grade after construction, exclusive of any filling, berming, mounding, or excavating solely for the purpose of locating the sign.

In cases in which the normal grade cannot reasonably be determined, sign height shall be computed on the assumption that the elevation of the normal grade at the base of the sign is equal to the elevation of the nearest point of the crown of a public street or the grade of the land at the principal entrance to the principal structure on the zone lot, which ever is lower.

*Commentary. The principal concern with the determination of sign height, in most cases, is certainty, so that there are no disputes over the computation. This section presents a sign owner from artificially elevating the sign by artificially elevating the land. The "whichever is lower" provision of the last sentence can make a significant difference in communities with hilly topography but can be omitted or ignored in plains communities.*

**4.4 Computation of Maximum Total Permitted Sign Area for a Zone Lot**
The permitted sum of the area of all individual signs on a zone lot shall be computed by applying the formula contained in Table 4.58, Maximum Total Sign Area, to the lot frontage, building frontage, or wall area, as appropriate, for the zoning district in which the lot is located. Lots fronting on two or more streets are allowed the permitted sign area for each street frontage. However, the total sign area that is oriented toward a particular street may not exceed the portion of the lot's total sign area allocation that is derived from the lot, building, or wall area frontage on that street.

**4.5 Signs Allowed on Private Property With and Without Permits**
Signs shall be allowed on private property in the city in accordance with, and only in accordance with, Table 4.5A. of the letter "P" appears for a sign type in a column, such sign is allowed without prior permit approval in the zoning districts represented by that column. If the letter "S" appears for a sign type in a column, such sign is allowed only with prior permit approval in the zoning districts represented by that column. Special conditions may apply in some cases. if the letter "N" appears for a sign type in a column, such a sign is not allowed in the zoning districts represented by that column under any circumstances.

Although permitted under the previous paragraph, a sign designated by an "S" or "P" in Table 4.5A shall be allowed only if:

a. The sum of the area of all building and freestanding signs on the zone lot conforms with the maximum permitted sign area as determined by the formula for the zoning district in which the lot is located as specified in Table 4.5B; and
b. The size location, and number of signs on the lot conform with the requirements of Tables 4.5C and 4.5D, which establish permitted sign dimensions by sign type, and with any additional limitations listed in Table 4.5A; The characteristics of the sign conform with the limitations of Table 4.5E, Permitted Sign Characteristics, and with any additional limitations on characteristics listed in Table 4.5A.

**4.6 Billboards**
To preserve the scenic beauty of the Loess Hills Scenic Byway Corridor there will be no billboards located along the Loess Hills Scenic Byway spine or excursion loops.

## A KEY TO TABLES 4.5A THROUGH 4.5E

On the tables in this model ordinance, which are organized by zoning district, the headings have the following meanings:

| | | | |
|---|---|---|---|
| RS | Residential, Single-Family Detached District | RB | Regional Business District (includes shopping center use) |
| RT | Residential. Townhouse District | CB | Central Business District (downtown) |
| RM | Residential, Multifamily District | HB | Highway Business District |
| RMH | Residential, Manufactured Housing District | BP | Business Park District (commercial PUD) |
| INS | Institutional Uses Permitted in Residential Zoning Districts | LI | Light Industrial District |
| NB | Neighborhood Business District | GI | General Industrial District |

**Table 4.5A PERMITTED SIGNS BY TYPE AND ZONING DISTRICT**

| **Sign Type** | **All RS** | **All RT** | **All RM** | **Ins a** | **RMH** | **NB** | **RB** | **CB** | **HB** | **BP** | LI | **GI** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Freestanding* | | | | | | | | | | | | |
| Residential b | P | P | P | N | P | N | N | N | N | N | N | N |
| Other | N | N | S | S | S | S | S | S | S | S | S | S |
| Incidental c | N | N | Pd | Pd | Pd | Pd | P | P | P | P | P | P |
| Billboard | N | N | N | N | N | N | N | N | N | N | N | N |
| *Building* | | | | | | | | | | | | |
| Banner | N | N | N | N | N | S | S | S | S | S | S | S |
| Building Marker f | P | P | P | P | P | P | P | P | P | P | P | P |
| Canopy | N | N | N | N | N | S | S | S | S | S | S | S |
| Identification d | P | P | P | P | P | P | P | P | P | P | P | P |
| Incidental c | N | N | Pi | Pi | Pf | Pc | P | P | P | P | P | P |
| Marquee g | N | N | N | N | N | N | S | S | S | N | N | N |
| Projecting g | N | N | N | N | N | S | S | S | S | S | S | S |
| Residential b | P | P | P | N | P | N | N | N | N | N | N | N |
| Roof | N | N | N | N | N | N | N | N | N | N | N | N |
| Roof, Integral | N | N | N | N | N | N | S | S | S | N | N | N |
| Suspended g | N | N | N | P | N | N | N | P | N | N | N | N |
| Temporary h | N | N | N | N | N | S | S | S | S | N | N | N |
| Wall | N | N | N | P | N | S | S | S | S | S | S | S |
| Window | N | N | N | N | N | S | S | S | S | S | N | N |
| *Miscellaneous* | | | | | | | | | | | | |
| Bannerc | N | N | N | N | N | S | S | S | S | N | N | N |
| Flag i | P | P | P | P | P | P | | | | | | |
| Portable | N | N | N | N | N | N | N | N | S | N | N | N |

P = **Allowed without sign permit**
S = **Allowed only with sign**
N = **Not allowed**

a. This column does not represent a zoning district. It applies to institutional uses permitted under the zoning ordinance in residential zoning districts. Such uses may include, but are not necessarily limited to, churches. schools. funeral homes, and cemeteries.
b. No commercial message allowed on sign, except for a commercial message drawing attention to an activity legally offered on the premises.
c. No commercial message of any kind allowed on sign if such message is legible from any location off the zone lot on which the sign is located.
d. Only address and name of occupant allowed on sign.
e. May include only building name, date of construction, or historical data on historic site; must be cut or etched into masonry, bronze, or similar material.
f. No commercial message of any kind allowed on sign.
g. If such a sign is suspended or projects above a public right-of-way, the issuance and continuation of a sign permit shall be conditioned on the sign owner obtaining and maintaining in force liability insurance for such a sign in such form and such amount as the director may reasonably from time to time determine, provided that the amount of such liability insurance shall be at least $500,000 per occurrence per sign.
h. The conditions of Sections 3.8. 3.9, 3.10 and 3.11 of this ordinance apply.
i. Flags of the United States, the state. the city, foreign nations having diplomatic relations with the United States, and any other flag adopted or sanctioned by an elected legislative body of competent jurisdiction, provided that such a flag shall not exceed 60 square feet in area and shall not be flown from a pole the top of which is more than 40 feet in height. These flags must be flown in accordance with protocol established by the Congress of the United States for the Stars and Stripes.
j. Any flag not meeting anyone or more of these conditions shall be considered a banner sign and shall be subject to regulation as such. Permitted on the same terms as a temporary sign, in accordance with Sections 38, 3.9, 3.10 and 3.11, except that it may be freestanding.

| | All RS | All RT | All RM | INS a | RMH | NB | RB | CB | HB | BP | U | GI |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| The maximum total area of all signs on a zone lot except incidental, building marker, and identification signs. and flags - shall not exceed the lesser of the following: | | | | | | | | | | | | |
| Maximum Number oHotal Square Feet | 8 | 8 | 200 | 100 | 200 | 100 | 200 | 800 | 1000 | 200 | 400 | 2000 |
| Percentage of Ground Floor Area of Principal Building | NA | NA | NA | NA | NA | 4% | 6% | 10% | 8% | 2% | 2% | 2% |
| Square Feet of Signage Per Linear Foot of Street Frontage | NA | NA | .5 | .5 | .5 | 2.0 | 3.0 | 6.0 | 4.0 | 1.0 | NA | NA |

a. This column does not represent a zoning district. It applies to institutional uses permitted under the zoning ordinance in residential zoning districts. Such uses may include, but are not necessarily limited to, churches, schools, funeral homes, and cemeteries.
b. Flags of the United States, the state, the city, foreign nations having diplomatic relations with the United States, and any other flag adopted or sanctioned by an elected legislative body of competent jurisdiction, provided that such a flag shall not exceed 60 square feet in area and shall not be flown from a pole the top of which is more than 40 feet in height. These flags must be flown in accordance with protocol established by the Congress of the United States for the Stars and Stripes. Any flag not meeting nay one or more of these conditions shall be considered a banner sign and shall be subject to regulation as such.

*Commentary: The imposition of* a *maximum total sign area limit on each property* is *an important aspect* of *sign regulation from an aesthetic perspective. The formula* or *area limit can be changed to meet local needs, but the imposition* of a *maximum limit* is *important. Some cities/counties use* a *formula based on the lot* area or *floor area of the principal building* as *the principal limit, whereas the formula based on street frontage is the principal limit in this table for typical* uses. *The relationship among numbers in this table is more significant than the exact numbers; for example, in most cities/counties, it is desirable to allow* less *total signage in* a *neighborhood business district than in other districts, and highway oriented* *businesses usually have the greatest signage needs in relation to building area.*

**Table** 4.5C **NUMBER, DIMENSIONS, AND LOCATION OF INDIVIDUAL SIGNS BY ZONING DISTRICT**

| | All RS | All RT | All RM | INS a | RMH | NB | RB | CB | HB | BP | LI | GI |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Individual signs shall not exceed the applicable maximum number dimensions or setbacks shown on this table and on Table 4.50. | | | | | | | | | | | | |
| *Freestanding* | | | | | | | | | | | | |
| Area (sq. ft.) | 6 | 6 | 12 | 40 | 12 | 40 | 80 | 40 | 160 | 80 | 80 | 80 |
| Height (feet) | 5 | 5 | 5 | 12 | 5 | 12 b | 24 c | 12 | 36 | 12 | 12 | 12 |
| Setback (sq. ft.) d | 2 | 2 | 2 | 5 | 2 | 5b | 5c | 2 | 10 | 10 | 10 | 10 |
| Number Permitted | | | | | | | | | | | | |
| Per Zone Lot | | | NA | | NA | NA | NA | NA | NA | NA | NA | NA |
| Per Feet of Street | | | 1 | | 1 | | 1 | | 1 | | 1 | 1 |
| Frontage | NA | NA | per 200 | NA | per 200 | 1 per 100 | per 200 | 1 per 100 | per 200 | 1 per 200 | per 200 | per 800 |
| *Building* | | | | | | | | | | | | |
| Area (max. sq. ft.) | 2 | 2 | 2 | 10 | 2 | NA | NA | NA | NA | NA | NA | NA |
| Wall Area (%,) | NA | NA | NA | NA | NA | 10% | 15% | 10% | 20% | 10% | 5% | 5% |

a. This column does not represent a zoning district It applies to institutional uses permitted under the zoning ordinance in residential zoning districts. Such uses may include, but are not necessarily limited to, churches, schools, funeral homes, and cemeteries.

b. Maximum sign height is 12 feet, and minimum setback is five feet; however, in no case shall the actual sign height exceed the actual sign setback from any adjacent lot that is zoned and used for residential purposes. For example, if the sign is set back seven feet from such a lot, it may be no more than seven feet high.

c. Maximum sign height is 24 feet, and minimum setback is five feet; however, in no case shall the actual sign height exceed the actual sign setback from any adjacent lot that is zoned and used for residential purposes. See example in Note b.

d. In addition to the setback requirements on this table, signs shall be located such that there is at every street intersection a clear view between heights of three feet and 10 feet in a triangle formed by the corner and points on the curb 30 feet from the intersection or entranceway.

e. Lots fronting on two or more streets are allowed the permitted signage for each street frontage, but signage cannot be accumulated and used on one street in excess of that allowed for lots with only one street frontage.

f. The percentage figure here shall mean the percentage of the area of the wall of which such sign is a part or to which each such sign is most nearly parallel.

*Commentary. Some cities/counties may want to eliminate some or all of the criteria in this table. Like Table 4.5A, it has been designed to cover a variety of circumstances. The most important standards are the height and setback limits and the limit on the number of freestanding signs; number rather than size of freestanding signs is the greatest contributor to streetscape clutter. Area limits on individual signs andon the percentage of a particular wall than can be covered can be eliminated, relying simply on maximum area limits for lots, as defined in Table 4.58. The clear-sight-triangle condition in Note d should be modified to match other, similar local ordinances affecting fences, buildings, and landscaping.*

**Table 4.50. NUMBER AND DIMENSIONS OF CERTAIN INDIVIDUAL SIGNS BY SIGN TYPE**

*No sign shall exceed any applicable maximum numbers or dimensions, or encroach on any applicable minimum clearance shown on this table.*

| | | | Vertical Clearance From Public Street, Private Drive or Parking |
|---|---|---|---|
| *Freestanding* | | | |
| Residential, Other, and Incidental | | | |
| *Building* | | | |
| Banner | NA | NA | 9 ft. | 12 ft. |
| Building Marker | 1 per bldg. | 4 sq. ft. | NA | NA |
| Canopy | 1 per bldg. | 25% of vertical surface of canopy | 9 ft. | 12 ft. |
| Identification | 1 per bldg. | NA | NA | NA |
| Incidental | NA | NA | NA | NA |
| Marquee | 1 per bldg. | NA | 9 ft. | 12 ft. |
| Projecting | 1 per bldg. | 40 sq. ft. | 9 ft. | 12 ft. |
| Residential | 1 per zone lot | NA | NA | NA |
| Roof | 1 per principal bldg. | | NA | NA |
| | 2 per principal bldg. | NA | NA | NA |
| Suspended | 1 per entrance | NA | 9 ft. | NA |
| Temporary | See Section 1.14 | NA | NA | NA |
| Wall | NA | NA | NA | NA |
| Window | NA | 25% of total window area | NA | NA |
| *Miscellaneous* | | | |
| Banner | NA | NA | 9 ft. | 12 ft. |
| Flag | NA | 60 ft. | 9 ft. | 12 ft. |
| Portable | 1 where allowed a 20 sq. ft. | | NA | NA |

a. Permitted on the same terms as a temporary sign, in accordance with Sections 3.8, 3.9, 3.10 and 3.11, except that it may be freestanding.

*Commentary. Some cities/counties may want to eliminate some or all of the criteria in this table. Like Table 4.5A, it* has *been designed to include* a *variety of possible circumstances. Requirements on this table are important for safety reasons.*

Table 4.5E PERMITTED SIGN CHARACTERISTICS BY ZONING DISTRICT

| | ALL RS | ALL RT | ALL RM | INS a | RMH | NB | RCB | CB | HB | BP | LI | G |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Animated Changeable Copy | N | N | N | N | N | N | N | S | N | N | N | N |
| Illumination Internal Illumination | N | N | N | P | N | N | S | S | S | N | N | N |
| Illumination External Illumination | N | N | N | Pb | N | Sb | S | S | S | S | S | S |
| Exposed bulbs or neon | N | N | N | P | P | Sb | S | S | S | S | S | S |
| | N | N | N | N | N | N | N | N | N | N | N | N |

P = Allowed without sign permit

S = Allowed only with sign permit

N = Not allowed

a. This column does not represent a zoning district. It applies to institutional uses permitted under the zoning ordinance in residential zoning districts. Such uses may include, but are not necessarily limited. to churches. schools. funeral homes, and cemeteries.

b. No direct light or significant glare from the sign shall be cast onto any adjacent zone lot that is zoned and used for residential purposes.

*Commentary. Most cities/counties will* want to *allow different combinations of sign characteristics in different zoning districts. A table like this* serves *that purpose well.*

### 4.6 Permits Required

If a sign requiring a permit under the provision of this ordinance is to be placed, constructed, erected, or modified on a zone lot, the owner of the lot shall secure a sign permit prior to the construction, placement, erection, or modification of such a sign in accordance with the requirements of Section 10.1, 10.2 and 10.3.

Furthermore, the property owner shall maintain in force at all times, a sign permit for such sign in accordance with Section 10.4, 10.5, 10.6 and 10.7. No signs shall be erected in the public right-of-way except in accordance with Article 6 and the permit requirements of Article 12.

No sign permit of any kind shall be issued for an existing or proposed sign unless such sign is consistent with the requirements of this ordinance (including those protecting existing signs) in every respect and with the Master Signage Plan or Common Signage Plan in effect for the property.

**4.7 Design Construction and Maintenance**

All signs shall be designed, constructed, and maintained in accordance with the following standards:

a. All signs shall comply with applicable provisions of the Uniform Building Code and the electrical code of the city/county at all times;

b. Except for banners, flags, temporary signs, and window signs conforming in all respects with the requirements of this ordinance, all signs shall be constructed of permanent materials and shall be permanently attached to the ground, a building, or another structure by direct attachment to a rigid wall, frame, or structure; and

c. All signs shall be maintained in good structural condition, in compliance with all building and electrical codes, and in conformance with this code, at all times.

*Commentary. This section must be modified to reflect the name of the applicable building and electrical codes.*

*ARTICLE* 5 *MASTER OR COMMON SIGNAGE PLAN*

No permit shall be issued for an individual sign requiring a permit unless and until a Master Signage Plan or a Common Signage Plan for the zone lot on which the sign will be erected has been submitted to the director and approved by the director as conforming with this section.

*Commentary. The purpose of this section is twofold. It provides* a *master plan for signs on* a *zone lot or group of zone lots and provides* a *master record of signs on* a *zone lot or group of zone lots. Requiring planning and coordination of signs on* a *property will improve the streetscape even if the local government does not impose detailed substantive requirements. Requiring the plan* as a *master record of permitted and actual sign age on* a *property accomplishes two functions. It provides those who administer the ordinance with information about what signs already exist on* a *site when they are considering* a *permit application for* a *new sign on the site, and it eliminates the need* to *re-compute permitted sign area and numbers for* a *property every time* a *sign administration or enforcement question arises, because the master record contains that information.*

*In short, this section provides significant benefits* to *the city/county in administering its sign regulations. However, if* a *particular city/county does not wish* to *impose this requirement, Article* 5 *can be deleted in its entirety; minor modifications* to *Sections* 4.6 *and Article 10 will also be required* to *delete the references to Master Signage Plans and Common Signage Plans.*

**5.1 Master Signage Plan**
For any zone lot on which the owner proposes to erect one or more signs requiring a permit, unless such zone lot is included in a Common Signage Plan, the owner shall submit to the director a Master Signage Plan containing the following:

a. An accurate plot plan of the zone lot, at such scale as the director may reasonably require;
b. Location of buildings, parking lots, driveways, and landscaped areas on such zone lot;
c. Computation of the maximum total sign area, the maximum area for individual signs, the height of signs and the number of freestanding signs allowed on the zone lot(s) included in the plan under this ordinance; and
d. An accurate indication on the plot plan of the proposed location of each present and future sign of any type, whether requiring a permit or not, except that incidental signs need not be shown.

**5.2 Common Signage Plan**
If the owners of two or more contiguous (disregarding intervening streets and alleys) zone lots or the owner of a single lot with more than one bUilding (not including any accessory buildings) file will the director for such zone lots a Common Signage Plan conforming with the provisions of this section, a 25 percent increase in the maximum total sign area shall be allowed for each included zone lot. This bonus shall be allocated within each zone lot as the owner(s) elects.

*Commentary. The purpose of this section* is *to reward property owners who prepare and follow coordinated signage plans for the property. The ordinance section can be modified to benefit only individual property owners or only owners of shopping centers and other multi-tenant properties, since the major problem with uncoordinated sign age occurs in multi-tenant properties. However, even* a *property under single ownership can become cluttered with uncoordinated signs, and there is considerable merit in encouraging owners* of *contiguous properties to plan together. The* 25 *percent bonus is arbitrary and can be adjusted to meet local needs. This provision is, in* a *sense* a *planned unit development (PUD) provision for signs. Like other PUD provisions, it can be modified to impose* a *minimum area requirement* so *that it will not apply to small properties.*

**5.3 Provisions of Common Signage Plan**
The Common Signage Plan shall contain all of the information required for a Master Signage Plan and shall also specify standards for consistency among all signs on the zone lots affected by the Plan with regard to:

a. Color scheme;
b. Lettering or graphic style;
c. Lighting;
d. Location of each sign on the buildings;
e. Material; and
f. Sign proportions.

*Commentary. This section* as *drafted imposes no substantive requirements, but it could include such requirements. For example, this section might require that, to qualify for the bonus outlined in Section* 5.2, *signs be only wooden and externally lighted or that each sign have only two colors plus black or white.*

**5.4 Showing Window Signs on Common or Master Signage Plan**
A Common Signage Plan or Master Signage Plan including window signs may simply indicate the areas of the windows to be covered by window signs and the general type of the window signs (e.g., paper affixed to a window, painted, etched on glass, or some other material hung inside window) and need not specify the exact dimension or nature of every window sign.

**5.5 Limit on Number of Freestanding Signs Under Common Signage Plan**
The Common Signage Plan for all zone lots with multiple uses or multiple users, shall limit the number of freestanding signs to a total of one for each street on which the zone lots included in the plan have frontage and shall provide for shared or common usage of such signs.

*Commentary. In* a *city/county in which the number of freestanding signs* is *not an issue, this requirement can be omitted.*

**5.6 Other Provisions of Master or Common Signage Plans**
The Master or Common Signage Plan may contain such other restrictions as the owners of the zone lots may reasonably determine.

*Commentary. This provision* is *primarily useful for multi-tenant properties, such* as *shopping centers, because it makes the owners design restrictions official policies of the local government. Some shopping center developers welcome such official status for what are essentially self-imposed restrictions.*

**5.7 Consent**
The Master or Common Signage Plan shall be signed by all owners or their authorized agents in such form as the director shall require.

**5.8 Procedures**
A Master or Common Signage Plan shall be included in any development plan, site plan, planned unit development plan, or other official plan required by the city/county for the proposed development and shall be processed simultaneously with such other plan.

**5.9 Amendment**
A Master or Common Signage Plan may be amended by filing a new Master or Common Signage Plan that conforms with all requirements of the ordinance then in effect.

**5.10 Existing Signs Not Conforming to Common Signage Plan**
If any new or amended Common Signage Plan is filed for a property on which existing signs are located, it shall include a schedule for bringing into conformance, within three years, all signs not conforming to the proposed amended plan or to the requirements of this ordinance in effect on the date of submission.

*Commentary. Because the Common Signage Plan is optional and the bonus granted under it* is a *privilege and not* a *right, the period for bringing signs into conformance with it can be shorter than might be required for bonging other signs into conformance with new regulations. Because the Master Signage Plan is not optional, the* same *provision* has *not been included for it. However,* some *cities/counties, particular/y in states with courts that are friendly to the amortization of signs, may want to add "Master or" before the word "Common" and thus broaden the effect of this section.*

**5.11 Binding Effect**
After approval of a Master or Common Signage Plan, no sign shall be erected, placed, painted, or maintained, except in conformance with such plan, and such plan may be enforced in the same way as any provision of this ordinance. In case of any conflict between the provisions of such a plan and any other provision of this ordinance, the ordinance shall control.

*ARTICLE* 6 *SIGNS IN THE PUBLIC RIGHT_OF_WAY.*
No signs shall be allowed in the public right-of-way, except for the following.

**6.1 Permanent Signs**
Permanent signs, including: public signs erected by or on behalf of a governmental body to post legal notices, identify public property, convey public information, and direct or regulate pedestrian or vehicular traffic.

Bus stop signs erected by: a public transit company; informational signs of a public utility regarding its poles, lines, pipes, or facilities; and awning, projecting, and suspended signs projecting over a public right-of-way, in conformity with the conditions of Table 4.5A of this ordinance.

**6.2 Temporary Signs**
Temporary signs for which a permit has been issued in accordance with this ordinance, which shall be issued only for signs meeting the following requirements:

a. Such signs shall contain no commercial message; and
b. Such signs shall be no more than two square feet in area each.

**6.3 Emergency Signs**
Emergency warning signs erected by a governmental agency, a public utility company, or a contractor doing authorized or permitted work within the public right-of-way.

*Commentary. This section includes only the substantive standards for signs in the right-of-way. Important and related procedural requirements are included in Article 12. Many cities/counties have a provision such as this for political campaign signs. However, such provisions exclude other valid, noncommercial messages and may thus be unconstitutional. This provision and Article 12 have been drafted in a way that is similar to provisions used for campaign signs, but they have been made broad enough to include any type of temporary sign not bearing a commercial message. Note that this provision does not address the issue of garage sale and open house signs placed in the public right-of-way because both contain commercial messages. Such signs are often placed in the right-of-way even though it is illegal to do so. It is virtually impossible to draft an exemption for such signs because the exemption would necessarily cover other types of signs and would probably be unconstitutional. The provision might be expanded to ad dress local practice with garage sale and open house signs, but any such revisions should he made carefully.*

## 6.4 Other Signs Forfeited
Any sign installed or placed on public property, except in conformance with the requirements of this section, shall be forfeited to the public and subject to confiscation. In addition to other remedies hereunder, the city/county shall have the right to recover from the owner or person placing such a sign the full costs of removal and disposal of such sign.

*ARTICLE 7 SIGNS EXEMPT FROM REGULATIONS UNDER THIS ORDINANCE*
The following signs shall be exempt from regulation under this ordinance:

1. Any public notice or warning required by a valid and applicable federal, state, or local law, regulation, or ordinance;
2. Any sign inside a building, not attached to a window or door, that is not legible from a distance of more than three feet beyond the lot line of the zone lot or parcel on which such sign is located;
3. Works of art that do not include a commercial message; holiday lights and decorations with no commercial message, but only between November 15 and January 15; and
4. Traffic control signs on private property, such as Stop, Yield, and similar signs, the face of which meet Department of Transportation standards and which contain no commercial message of any sort.

*Commentary. In order to limit the number of exemptions, many signs that are often exempt from regulation under sign ordinances are expressly permitted under this one.* See, *for example, the treatment of "Incidental, " "Temporary, " and "Residential" signs. Permitting signs makes them subject to all requirements of the ordinance, such* as *number limits, placement requirements, and maintenance, whereas exemption implies that they are entirely exempt. This section is drafted to exclude from regulation only signs that generally fall outside of the purpose of sign regulation. This exemption section addresses the issue of signs that are technically inside* a *bUilding but are clearly/y designed to be read from outside. The three foot distance is intended to exempt price and label signs on window displays that are meant to be read by pedestrians but that are otherwise not oriented to the outside of the building.*

*ARTICLE* 8 *SIGNS PROHIBITED UNDER THIS ORDINANCE*

All signs not expressly permitted under this ordinance or exempt from regulation hereunder in accordance with the previous section are prohibited in the city. Such signs include, but are not limited to:

1. Beacons;
2. Pennants;
3. Strings of lights not permanently mounted to a rigid background, except those exempt under the previous section; and
4. Inflatable signs and tethered balloons.

*ARTICLE* 9 *GENERAL PERMIT PROCEDURES*

The following procedures shall govern the application for, and issuance of, all sign permits under this ordinance, and the submission and review of Common Signage Plans and Master Signage Plans.

**9.1 Applications**

All applications for sign permits of any kind and for approval of a Master or Common Signage Plan shall be submitted to the director on an application form or in accordance with application specifications published by the director.

**9.2 Fees**

Each application for a sign permit or for approval of a Master or common Signage Plan shall be accompanied by the applicable fees, which shall be established by the governing body of the city from time to time by resolution.

**9.3 Completeness**

Within five days of receiving an application for a sign permit or for a Common or Master Signage Plan, the director shall review it for completeness. If the director finds that it is complete, the application shall then be processed. If the director finds that it is incomplete, the director shall, within such five day period, send to the applicant a notice of the specific ways in which the application is deficient, with appropriate references to the applicable sections of this ordinance.

### 9.4 Action

Within seven days of the submission of a complete application for a sign permit, the director shall either:

a. Issue the sign permit, if the sign(s) that is the subject of the application conforms in every respect with the requirements of this ordinance and of the applicable Master or Common Signage Plan; or

b. Reject the sign permit if the sign(s) that is the subject of the application fails in any way to conform with the requirements of this ordinance and of the applicable Master or Common Signage Plan. In case of a rejection, the director shall specify in the rejection the section or sections of the ordinance or applicable plan with which the sign(s} is inconsistent.

### 9.5 Action Plan

On any application for approval of a Master Signage Plan or Common Signage Plan, the director shall take action on the applicable one of the following dates:

a. Fourteen days after the submission of a complete application if the application is for signs for existing buildings; or

b. On the date of final action on any related application for building permit. site plan, or development plan for signs involving new construction.

c. On or before such applicable date, the director shall either approve the proposed plan if the sign(s} as shown on the plan and the plan itself conforms in every respect with the requirements of this ordinance; or

d. Reject the proposed plan if the sign(s} as shown on the plan or the plan itself fails in any way to conform with the requirements of this ordinance. In case of a rejection, the director shall specify in the rejection the section or sections of the ordinance with which the plan is inconsistent.

*Commentary. Although certain portions of this section may seem redundant, it is drafted to make the duty of the director clear and entirely ministerial, thus eliminating any allegation that the director can play the role of censor or other wise exercise discretion that might violate the constitutional! rights of an applicant. Although some administrators may consider the language limiting, it is designed for their protection.*

*ARTICLE 10 PERMITS TO CONSTRUCT OR MODIFY SIGNS.*

Signs identified as "P" or "S" on Table 4.5A shall be erected, installed, or created only in accordance with a duly issued and valid sign construction permit from the director. Such permits shall be issued only in accordance with the following requirements and procedures.

### 10.1 Permit for New Sign or for Sign Modification

An application for construction, creation, or installation of a new sign or for modification of an existing sign shall be accompanied by detailed drawings to show the dimensions, design, structure, and location of each particular sign, to the extent that such details are not contained on a Master Signage Plan or Common Signage Plan then in effect for the zone lot. One application and permit may include multiple signs on the same zone lot.

**10.2 Inspection**
The director shall cause an inspection of the zone lot for which each permit for a new sign or for modification of an existing sign is issued during the sixth month after the issuance of such permit or at such earlier date as the owner may request. If the construction is not substantially complete at the time of inspection, the permit shall lapse and become void. If the construction is complete and in full compliance with this ordinance and with the building and electrical codes, the director shall affix to the premises a permanent symbol identifying the sign(s) and the applicable permit by number or other reference.

If the construction is substantially complete but not in full compliance with this ordinance and applicable codes, the director shall give the owner or applicant notice of the deficiencies and shall allow an additional 30 days from the date of inspection for the deficiencies to be corrected. If the deficiencies are not corrected by such date, the permit shall lapse. If the construction is then complete, the director shall affix to the premises the permanent symbol described above.

*Commentary. A key* to effective *administration and enforcement of sign regulations is* a *good system of records. The Master Sign age Permit or Common Signage Permit provides* a *master record for each property. The individual sign construction permit provides tracking of* a *particular sign and should lapse if the sign is not erected. The permanent medallion provides* a *reference number on the property that* a *field inspector can use to identify* a *file number to verify that the signs on the property conform with the permits, The permanent medallion may not be necessary in some cities/counties with an excellent parcel record system (Whether automated or not) that can be used* as *the organization index to sign permit files.*

**10.3 Sign Permits-Continuing**
The owner of a zone lot containing signs requiring a permit under this ordinance shall at all times maintain in force a sign permit for such property. Sign permits shall be issued for individual zone lots, notwithstanding the fact that a particular zone lot may be included with other zone lots in a Common Signage Plan.

**10.4 Initial Sign Permit**
An initial sign permit shall be automatically issued by the director covering the period from the date of the inspection of the completed sign installation, construction, or modification through the last day of that calendar year.

**10.5 Sign Permits, Subsequent**
Sign permits shall be issued for 12 months. Except as provided herein, sign permits shall be renewable annually upon submission of a renewal application form and the applicable fees. Renewal applications shall contain a representation by the applicant that no change in signage under the permit has been made or shall contain dimensions, drawings, and photos of any changes.

*Commentary. For local governments that issue business licenses, it may be desirable to modify this section to make sign permits an adjunct to business licenses. That eliminates the processing of additional forms by both the applicant and the city. The primary purpose of requiring annual renewals is to keep the city's/county's information about signs up to date and to provide a method by which signs that are not being actively used by businesses become ordinance violations because they lack current permits.*

**10.6 Lapse of Sign Permit**
A continuing sign permit shall lapse automatically if not renewed or if the business license for the premises lapses, is revoked, or is not renewed. A sign permit shall also lapse if the business activity on the premises is discontinued for a period of 180 days or more and is not renewed within 30 days of a notice from the city to the last permittee, sent to the premises, that the sign permit will lapse if such activity is not renewed.

*Commentary. The purpose of this section is to place signs that are essentially abandoned in violation of the ordinance because they do not have a current permit. Proving that a sign is not the subject of a current permit is much easier than proving that it is "obsolete "or" abandoned, "as some local sign regulations require. Some cities/counties declare a sign obsolete or otherwise nonconforming after a shorter period of nonuse than the 180 days proposed here. However, six months is fairly typical and is thus proposed for the model. A citylcounty adopting this provision should feel free to modify this number.*

**10.7 Assignment of Sign Permits**
A current and valid sign permit shall be freely assignable to a successor as owner of the property or holder of a business license for the same premises, subject only to filing such application as the director may require and paying any applicable fee. The assignment shall be accomplished by filing and shall not require approval.

*Commentary. The city/county should not have any discretionary authority to refuse to transfer a valid sign permit to a new owner of the business or property involved. This section simply clarifies that issue.*

*ARTICLE 11 Temporary Sign Permits (Private Property)*
Temporary signs on private property shall be allowed only upon the issuance of a Temporary Sign Permit, which shall be subject to the following requirements:

**11.1 Term**
A temporary sign permit shall allow the use of a temporary sign for a specified 30 day period.

**11.2 Number**
Only one temporary sign permit shall be issued to the same business license holder on the same zone lot in any calendar year.

**11.3 Other Conditions**
A temporary sign shall be allowed only in district with a letter "S" for "Temporary Signs" on Table 4.5A and subject to all of the requirements for temporary signs as noted therein.

*ARTICLE* 12 *PERMITS FOR SIGNS IN THE PUBLIC RIGHT-OF-WAY*
Permits for temporary private signs in the public right-of-way shall be issued in accordance with the following conditions:

**12.1 Term and Number of Permits**
The term of such a permit shall be 60 days. No more than one permit for temporary signs shall be issued to any applicant in any calendar year. For any sign containing the name oft a political candidate, the candidate shall be deemed to be the applicant.

**12.2 Number of Signs**
No more than 2 signs may be erected under one permit.

**12.3 Identification of Permitted Signs**
Each sign erected under such a permit shall contain an official stamp of the director, authenticating the sign and giving the number of the permit and the date of issuance.

**12.4 Other Conditions**
In addition to applicable fees otherwise payable, the applicant shall post a bond of $25 for each sign authorized by the director's stamp, which bond shall be held to ensure the removal of the signs and shall be refundable upon the surrender to the director of the actual sign(s) for disposal. The bond on any sign not surrendered for disposal within 75 days of the issuance of the permit or actually removed by the city/county because it is located on public property on a day more than 60 days after the date of permit issuance shall be forfeited.

*Commentary. Clearly the limitation to* 2 *signs should be changed to reflect local needs. The bonding requirement is an extremely important part of such* a *provision and the* $25 *is not far off the probable cost of public removal.*

*ARTICLE 13 TIME OF COMPLIANCE: NONCONFORMING SIGNS AND SIGNS WITHOUT PERMITS*
Except as otherwise provided herein, the owner of any zone lot, or other premises on which exists a sign that does not conform with the requirements of this ordinance or for which there is no current and valid sign permit shall be obligated to remove such sign, or in the case of a nonconforming sign, to bring it into conformity with the requirements of this ordinance.

**13.1 Signs Existing on Effective Date**
For any sign existing in the city/county on (date 1), an application for a sign permit must be submitted to the director before (date 2). For, any sign on property annexed at a later date, applications for sign permits shall be submitted within six months of the effective date of the annexation or within such period as may be established in an annexation agreement between the city/county and the landowner. Signs that are the subject to

applications received after the applicable date set forth in this section shall be subject to all of the terms and conditions of this ordinance and shall not be entitled to the protection of Section 13.3. Applications for permits for existing signs submitted before (date 2) shall be exempt from the initial fees adopted under authority of this ordinance, but not from renewal and subsequent fees.

*Commentary. The effective date of the ordinance should be substituted for (date 1). Using a date certain, rather than "the effective date of this ordinances " will simplify subsequent administration. A date some period of time later, perhaps six months, should be substituted for (date 2). There are several purposes for this section. First, it makes clear that the "grandfathering" provisions for existing nonconforming signs are a privilege. Second, it specifies that such signs are subject to the terms of the ordinance except for the dimensional or other terms with which they do not initially comply. Third, it provides the city/county with a record of the existence and dimensions of each existing sign (whether it is in conformance with the ordinance or not) in order to eliminate the need to research that information during later enforcement or administration actions. The last paragraph provides some additional incentive for voluntary registration of existing signs under the ordinance; this incentive is particularly important for owners of conforming signs, as owners of nonconforming signs have adequate incentive because they will receive their nonconforming sign permit by submitting a timely application.*

**13.2 Nonconforming Existing Signs, Permits and Terms**

A sign that would be permitted under this ordinance only with a sign permit, but which was in existence on (date 1) or on a later date when the property is annexed to the city/county, and which was constructed in accordance with the ordinances and other applicable laws in effect on the date of its construction, but which by reason of its size, height, location, design, or construction is not in conformance with the requirements of this ordinance, shall be issued a Nonconforming Sign Permit if an application in accordance with Section 13.4 of this ordinance is timely filed.

Such permit shall allow the sign(s) subject to such permit, which were made nonconforming by the adoption of this ordinance, to remain in place and be maintained for a period ending no later than (date 3), provided that no action is taken which increases the degree or *extent* of the nonconformity. Such signs are also subject to the provisions of Section 13.4. A change in the information on the face of an existing nonconforming sign is allowed. However, any nonconforming sign shall either be eliminated or made to conform with the requirements of this Section when any proposed change, repair, or maintenance would constitute an expense of more than 25 percent of the lesser of the original value or replacement value of the sign.

*Commentary. Date 1 in this subsection is the same as date 1 in the previous section. Date 3 should be the date (usually five to 10 years later) by which the sign must be removed. References in this paragraph and the previous one to "annexation" should be deleted by local governments in which annexation will not take place. In states that do not permit amortization of nonconforming signs, the language "for a period ending no later than (date 3) "(in Section 13.3) should be deleted, The rest of the section should*

*be retained, however, because the provisions of Section* 13.4 *(which depends on* 1 *0.6) are still permitted in those states, and it relies in part on* 13.3.

**13.3 Lapse of Nonconforming Sign Permit**
A Nonconforming Sign Permit shall lapse and become void under the same circumstances as those under which any other sign permit may lapse and become void.

*Commentary. Section 13 is very important because it creates a mechanism under which some permits for nonconforming signs will in fact lapse (see Section 10.6), an occurrence that will require the removal of the nonconforming sign*

*ARTICLE 14 SIGN REMOVAL REQUIRED*
A sign that was constructed, painted, installed, or maintained in conformance with a permit under this ordinance, but for which the permit has lapsed or not been renewed or for which the time allowed for the continuance of a nonconforming sign has expired, shall be forthwith removed without notice or action from the city/county.

*ARTICLE 15 VIOLATIONS*
Any of the following shall be a violation of this ordinance and shall be subject to the enforcement remedies and penalties provided by this ordinance, by the zoning ordinance, and by state law:

1. To install, create, erect, or maintain any sign in a way that is inconsistent with any plan or permit governing such sign or the zone lot on which the sign is located;
2. To install, create, erect, or maintain any sign requiring a permit without such a permit;
3. To install, create, erect, or maintain any sign in a way that is inconsistent with any plan or permit governing such sign or the zone lot on which sign is located;
4. To fail to remove any sign that is installed, created, erected, or maintained in violation of this ordinance, or for which the sign permit has lapsed; or
5. To continue any such violation. Each such day of a continued violation shall be considered a separate violation when applying the penalty portions of this ordinance.

Each sign installed, created, erected, or maintained in violation of this ordinance shall be considered a separate violation when applying the penalty portions of this ordinance.

*Commentary. Most or all of Article* 15 *should be retained even when the sign ordinance is integrated fully into* a *zoning ordinance or development code. That is not true for the following paragraphs of Article 16.*

*ARTICLE 16 ENFORCEMENT AND REMEDIES*
Any violation or attempted violation of this ordinance or of any condition or requirement adopted pursuant hereto may be restrained, corrected, or abated, as the case may be, by injunction or other appropriate proceedings pursuant to state law. A violation of this ordinance shall be considered a violation of the zoning ordinance of the city/county. The remedies of the city/county shall include the following:

1. Issuing a stop-work order for any and all work on any signs on the same zone lot;
2. Seeking an injunction or other order of restraint or abatement that requires the removal of the sign(s) or the correction of the nonconformity;
3. Imposing any penalties that can be imposed directly by the city under the zoning ordinance;
4. Seeking in court the imposition of any penalties that can be imposed by such court under the zoning ordinance; and
5. In the case of a sign that poses an immediate danger to the public health or safety, taking such measures as are available to the city under the applicable provisions of the zoning ordinance and building code for such circumstances.

The city/county shall have such other remedies as are and as may from time to time be provided for or allowed by state law for the violation of the zoning ordinance.

All such remedies provided herein shall be cumulative. To the extent that state law may limit the availability of a particular remedy set forth herein for a certain violation or a part thereof. such remedy shall remain available for other violations or other parts of the same violation.

*Commentary. Much of this section may be omitted when the sign ordinance is fully integrated into the zoning ordinance or development code. However. the person integrating the two should review the current zoning ordinance enforcement provisions to ensure that they contain all of these remedies, to the maximum extent al/owed by the law. This section can be modified to provide more specific reference to state law by citation or to specific substantive provisions, such as the availability of civic penalties or criminal charges.*

*ARTICLE* 17 *WHEN EFFECTIVE*
This ordinance shall be effective after its final passage, approval, and publication as provided by law. Passed and approved this __ day of _____.

Chairperson: _____

ATTEST: _____, City Clerk/County Auditor

# MODEL TOOL
# LOESS HILLS SCENIC BYWAY CORRIDOR

## SUBDIVISION ORDINANCE

*ARTICLE 1 INTRODUCTION*
An ordinance regulating the subdivision of land prescribing standards for subdivisions and for the improvement thereof, prescribing procedures for the review of proposed subdivisions plats and establishing fees therefore, and prescribing penalties for the violation of such ordinance. This ordinance is in conformance with Chapter 354 of The Code of Iowa.

*ARTICLE 2 GENERAL PROVISIONS*
**2.1 Short Title**
This ordinance shall be known as the "Subdivision Ordinance" of city/county, Iowa.

**2.2 Purpose**
The purpose of this ordinance is to provide minimum standards for the design, development, and improvement of all new subdivisions and re-subdivisions of land, so that existing land uses will be protected, and so that growth occurs in an orderly manner, consistent with the Comprehensive Plan, and to promote the public health, safety, and general welfare of the citizens of city/county, Iowa.

**2.3 Application**
Every owner of any tract or parcel of land who has subdivided or shall hereafter subdivide or plat said tract or parcel into two (2) or more parts, any part of which is less than forty (40) acres, for the purpose of laying out an addition, subdivision building lot, or lots, acreage or suburban lots within the city/county, shall cause plats of such area to be made in the form and containing the information as hereinafter set forth, before selling or offering for sale any lots therein contained or placing the plat on record.

**2.4 Recording of Plat**
No subdivision plat, re-subdivision plat or street dedication within _
city/county, Iowa, shall be filed for record with the city county, or recorded by the city/county, until a final plat of such subdivision, re-subdivision, or street dedication has been reviewed and approved in accordance with the provisions of this ordinance.

Upon the approval of the final plat by the governing body, it shall be the duty of the subdivider to immediately file such plat with the county auditor and county recorder, as required by law. Such approval shall be revocable after thirty (30) days, unless such plat has been duly recorded and evidence thereof filed with the governing body within such thirty (30) days.

**2.5 Fees Established**
The governing body shall, from time to time, establish by resolution fees for the review of plats. No plat for any subdivision or re-subdivision shall be considered filed with the governing body, unless and until said plat is accompanied by the fee, as

established by resolution of the governing body, and as required by this ordinance.

**2.6 Penalties**

Any person who shall dispose of or offer for sale any lot or lots within the area of jurisdiction of this ordinance, until the plat thereof has seen approved by the governing body, and recorded as required by law shall forfeit and pay one hundred dollars ($150) for each lot or part of lot sold, disposed of or offered for sale. Nothing contained herein shall in any way limit the city's/county's right to any other remedies available to the city/county for the enforcement of this ordinance.

**2.7 Building Permit to be Denied**

No building permit shall be issued for construction on any lot, parcel, or tract where a subdivision is required by this ordinance unless and until a final plat of such subdivision has been approved and recorded in accordance with this ordinance, and until the improvements required by this ordinance have been installed

## *ARTICLE 3 DEFINITIONS*

**3.1 Terms Defined**

For the purposes of this ordinance, certain words herein shall be defined as and interpreted as follows: Words used in the present tense shall include the future, the singular shall include the plural, the plural shall include the singular, the masculine gender shall include the feminine, the term "shall" is always mandatory, and the term "may" is permissive:

1. Acquisition plat means the graphical representation of the division of land or rights in land, created as the result of a conveyance or condemnation for right-of-way purposes by an agency of the government or other persons having the power of eminent domain.
2. Aliquot part; means a fractional part of a section within the United States public land survey system. Only the fractional parts one-half, one-quarter, one-half of one-quarter, or one-quarter of one quarter shall be considered an aliquot part of a section.
3. Alley means public property dedicated to public use primarily for vehicular access to the back or side of properties otherwise abutting on a street.
4. Auditor's plat means a subdivision plat required by either the auditor or the assessor, prepared by a surveyor under the direction of the auditor.
5. Block means an area of land within a subdivision that is entirely bounded by streets, railroad rights-of-way, rivers, tracts of public land, or the boundary of the subdivision.
6. County/City Engineer means the professional engineer registered in the State of Iowa designated as city engineer by the governing body or other hiring authority.
7. Comprehensive Plan means the general plan for the development of the city/county, that may be titled master plan, comprehensive plan or some other title, which plan has been adopted by the governing body. Such "Comprehensive Plan" shall include any part of such plan separately adopted, and any amendment to such plan or parts thereof.
8. Conveyance means an instrument filed with a recorder as evidence of the transfer of title to land, including any form of deed or contract.

9 Cul-de-sac means a street having one end connecting to another street, and the other end terminated by a vehicular turn around.

10. Division means dividing a tract or parcel of land into two parcels of land b conveyance or for tax purposes. The conveyance of an easement, other than public highway easement, shall not be considered a division for the purpose of this chapter. 11. Easement means an authorization by a property owner for another to use a designated part of his property for a specified purpose.
12. Flood Hazard Area means any area subject to flooding by a one percent (1%) probability flood, otherwise referred to as a one hundred (100) year flood; as designated by the Iowa Department of Natural Resources or the Federal Emergency Management Administration (FEMA).
13. Floodway means the channel of a river or other watercourse and the adjacent lands that must be reserved in order to discharge the waters of a one hundred (100) year flood without cumulatively raising the waterway surface elevation more than one (1) foot.
14. Forty-acre aliquot part means one-quarter of one-quarter of a section.
15. Governing Body means the city council of the City of _____Iowa or board of supervisors of _____ County, Iowa.
16. Government lot means a tract, within a section, that is normally described by a lot number as represented and identified on the township plat of the United States public land survey system.
17. Improvements means changes to land necessary to prepare it for building sites including but not limited to grading, filling, street paving, curb paving, sidewalks, walkways, water mains, sewers, drainage ways, and other public works and appurtenances.
18. Lot means a tract of land represented and identified by number or letter designation on an official plat.
19. Lot, Comer The term "corner lot" means a lot situated at the intersection of two streets.
20. Lot, Double Frontage: The term "double frontage lot" means any lot that is not a corner lot that abuts two streets.
21. Metes and Bounds description means a description of land that uses distances and angles, uses distances and bearings, or describes the boundaries of the parcel by reference to physical features of the land.
22. Official! Plat means either an auditor's plat or a subdivision plat that meets the requirements of this chapter and has been filed for record in the offices of the recorder, auditor, and assessor.
23. Owner means the legal entity holding title to the property being subdivided, or such representative or agent as is fully empowered to act on its behalf.
24. Parcel means a part of a tract of land.
25. Permanent real estate index number means a unique number or combination of numbers assigned to a parcel of land pursuant to section 441.29 of the Code of Iowa. 26. 26. Planning Commission means the appointed commission designated by the governing body for the purpose of this ordinance, and may also be the zoning commission, in which case such commission shall be known as the planning and zoning commission.
27. Plat means a map drawing, or chart on which a subdivider's plan for the subdivision of land is presented, that he or she submits for approval and intends, in final form, to record.
28. Plats Officer means the individual assigned the duty to administer this ordinance by the governing body or other appointing authority.

29. Plat of survey means the graphical representation of a survey of one or more parcels of land, including a complete and accurate description of each parcel within the plat, prepared by a registered land surveyor.
30. Proprietor means a person who has a recorded interest in land, including a person selling or buying land pursuant to a contract, but excluding persons holding mortgage, easement, or lien interest.
31. Re-subdivision means any subdivision of land that has previously been included in a recorded plat. In appropriate context it may be a verb referring to the act of preparing a plat of previously subdivided land.
32. Street means public property, not an alley, intended for vehicular circulation. In appropriate context the term "street" may refer to the right-of-way bounded by the property lines of such public property, or may refer to the paving installed within such right-of-way.
33. Street, Arterial: The term "arterial street" means a street primarily intended to carry traffic from one part of the city/county to another and not intended to provide access, to abutting property.
34. Street, Collector: The term "collector street" means a street primarily desired to connect smaller areas of the city/county, and to carry traffic from local streets to arterial streets.
35. Subdivider means the owner of the property being subdivided, or such other person or entity empowered to act on the owner's behalf.
36. Subdivision means the division of land into two or more parts for the purpose, whether immediate or future, of transfer of ownership or building development. The term, when appropriate to the context may refer to the process of subdividing or to land subdivided.
37. Subdivision plat means the graphical representation of the subdivision of land, prepared by a registered land surveyor, having a number or letter designation for each lot within the plat and a succinct name or title that is unique for the city/county where the land is located.
38. Surveyor means a registered land surveyor who engages in the practice of land surveying pursuant to Chapter 114 of the Code of Iowa.
39. Tract means an aliquot part of a section, a lot within an official plat, or a government lot.
40. Utilities means systems for the distribution or collection of water, gas, electricity, wastewater, and stormwater.

## *ARTICLE 4 IMPROVEMENTS*

### 4.1 Improvements Required

The subdivider shall, at his or her expense, install and construct all improvements required by Statewide Urban Design and Specifications (SUDAS) Iowa Statewide Urban Design Standards Manual. All required improvements shall be installed and constructed in accordance with the design standards established by SUDAS and as shown on the approved preliminary plat.

### 4.2 Inspection

All improvements shall be inspected to insure compliance with the requirements of this ordinance. The cost of such inspection shall be borne by the subdivider, and shall be the actual cost of the inspection to the city/county.

**4.3 Minimum Improvements**

The improvements set forth below shall be considered the minimum improvements necessary to protect the public health, safety and welfare:

a. Streets: The subdivider of land being subdivided shall provide the grading, of the entire street right-of-way, alley, or public place and provide appropriate paving on all streets. All streets or alleys shall be of such width and shall be so constructed as to meet the standards of the city/county.

b. Sanitary Sewer System: The subdivider of the land being platted shall make adequate provision for the disposal of sanitary sewage from the platted area with due regard being given to present or reasonably foreseeable needs. Where connection to a central sewer system, or the construction of a central sewage collection and treatment system cannot reasonably be accomplished, septic systems may be allowed. No subdivision to be served by septic systems shall be approved until and unless percolation tests have been performed and the results of such tests have been provided to and reported on by the city/county engineer and city/county health officer. Such septic systems, if approved, may be installed by the subdivider, or by a subsequent owner at the time development of a lot takes place.

c. Stormwater Management Facilities: The subdivider of land being platted shall install and construct stormwater facilities in accordance with the *Loess Hills Stormwater Best Management Practices Guidance Manual* (2008) and all applicable state and federal requirements.

d. Water System: The subdivider of land being platted shall make appropriate provision for a suitable water supply for each platted lot or parcel. Such water supply shall be appropriate for the character of development proposed. No subdivision shall be approved until and unless the proposed system for providing water has been approved by the city/county engineer and the city/county health officer. Individual wells, if approved, may be installed by the subdivider, or by a subsequent owner at the time development of a lot takes place.

e. Other Improvements: The subdivider of the land being platted shall be responsible for the installation of sidewalks and walkways necessary to secure pedestrian safety, grading and seeding or sodding of all lots, the planting of any required trees, and the installation of street signs and street lighting as required.

**4.4 Easements Required**

a. Utility Easements: Where required for the placement of present or future utilities, easements of not less than ten (10) feet in width shall be granted by the owner along rear and where necessary, along side, lot lines for public utility requirements. Except where prohibited by topography, such easements shall be centered on lot lines, Easements of greater width may be required along lot lines, or across lots when necessary for the placement and maintenance of utilities. No buildings or structures except as necessary for utilities shall be permitted on such easements.

b. Easements Along Streams and Watercourses: Wherever any stream or surface watercourse is located in an area that is being subdivided, the subdivider shall, at his or her own expense, make adequate provisions for the proper drainage of surface water and shall also provide and dedicate to the city/county an easement along said streams and watercourses as necessary for the proper maintenance of the watercourse, and as approved by the city/county.

**4.5 Maintenance of Improvements**
Unless otherwise approved by the governing body, improvements required to be installed shall remain the property and the responsibility of the subdivider, or successors in interest to the lands being subdivided. No subdivision shall be approved until and unless legal covenants, running with the land, sufficient to ensure that the city/county will not need to assume maintenance responsibility for any such improvement, have been approved by the attorney and the governing body.

## *ARTICLE* 5 *MINIMUM STANDARDS FOR THE DESIGN OF SUBDIVISIONS*

**5.1 Standards Prescribed**
The standards set forth in this ordinance shall be considered the minimum standards necessary to protect the public health, safety, and general welfare.

**5.2 Land suitability**
No land shall be subdivided that is found to be unsuitable for subdividing by reason of flooding, ponding, poor drainage, adverse soil conditions, adverse geological formations, slopes over 14%, or other conditions likely to be harmful to the public health, safety, general welfare, or unique environmental characteristics of the Loess Hills. If land is found to be unsuitable for subdivision for any of the reasons cited in this section, the governing body shall state its reasons in writing and afford the subdivider an opportunity to present data regarding such unsuitability. Thereafter, the governing body may reaffirm, modify, or withdraw its determination regarding such unsuitability.

**5.3 Lands Subject to Flooding**
No subdivision containing land located in a floodway or a flood hazard area shall be approved by the city/county without the approval of the Iowa Natural Department of Resources. No lot shall be located so as to include land located within a floodway or 100- year floodplain as defined by the Federal Emergency Management Agency. Land located within a floodplain or a floodway may be included within a plat as follows, subject to the approval of the city/county:

a. Reserved as open space for recreation use by all owners of lots in the subdivision, with an appropriate legal instrument, approved by the city/county, providing for its care and maintenance by such owners.
b. If acceptable to the city/county, dedicated to the city/county as public open space for recreation or flood control purposes.

**5.4 Plat to Conform to Comprehensive Plan**
The arrangement, character, extent, width, grade, and location of all streets, and the general nature and extent of the lots and uses proposed, shall conform to the Comprehensive Plan of the city/county, provided such plan has been adopted by the city/county, and shall conform to such other plans, including but not limited to Iowa Statewide Urban Design and Specifications (SUDAS), a city/county Road or Street Plan, a Sanitary Sewer System Plan, a Water System Plan, or a Parks and Open Space Plan, provided such plan has been adopted by the city/county.

**5.5 Construction Standards for Improvements**

In addition to the standards set forth in this ordinance, the city/county engineer shall from time to time prepare, and the governing body shall from time to time adopt by resolution, technical standards for public improvements. Such technical standards for public improvements shall be in accordance with SUDAS standards for public improvements. Such standards may vary for classes of improvements, giving due regard to the classification of streets and roads or other improvements, and the extent and character of the area served by the improvements. Upon adoption by the governing body by resolution, such technical standards for public improvements shall have such force and effect as if they were fully set forth herein.

**5.6 Street Standards**

All streets to be located within the subdivision shall be in accordance with SUDAS standards and all applicable city/county standards including, but not limited to:

a. Streets shall provide for the continuation of arterial and collector streets from adjoining platted areas, and the extension of such streets into adjoining unplatted areas. Where a plat encompasses the location for an arterial or collector street proposed in the Comprehensive Plan or city/county Road or Street Plan, the plat shall provide for such street.

b. Street grades shall align to existing streets, and all grades for streets shall be as approved by the city/county.

c. New arterial streets shall be located so as to not require direct access from the arterial street to abutting lots.

d. Street right-of-way and pavement widths shall be as specified in the Comprehensive Plan, city/county Road or Street Plan, or Technical Standards for Public Improvements.

e. Half-streets are prohibited, except where an existing platted half-street abuts the subdivision, a platted half-street to complete the street shall be required.

f. Minor streets should be designed to discourage through traffic while safely connecting to major streets or roads.

g. Street jogs with centerline offsets of less than one hundred twenty five (125) feet shall be prohibited, except where topography or other physical conditions make such jogs unavoidable.

h. Streets shall intersect as nearly at right angles as possible; and no street shall intersect any other street at less than sixty (60) degrees.

i. At intersections of major streets, and otherwise as necessary, lot comers abutting the intersection shall be rounded with a radius sufficient to provide necessary space within the right-of-way for sidewalks, traffic control devices, and other necessary improvements without encroachment onto the comer lot.

j. Dead end streets are prohibited, except where a street is planned to continue past the subdivider's property, a temporary dead end may be allowed.

k. Streets that connect with other streets, or loop streets, are preferable, but cul-de-sacs may be permitted. Cul-de-sacs should not exceed feet in length unless a greater length is unavoidable. (Cities/counties should establish the maximum length

for cul-de-sacs depending on local growth activity and topography. The usual maximum length for cul-de-sacs is 300-500 feet.)

l. In general, alleys shall be in residential areas and required in commercial areas with normal street frontage. Dead end alleys are prohibited, unless provided with a turn around with a minimum right-of-way diameter of one hundred (100) feet.

m. When a tract is subdivided into larger than normal lots or parcels, such lots or parcels shall be so arranged as to permit the logical location and opening of future streets and appropriate re-subdivision with provision for adequate utility connections for such re-subdivision.

n. Easements for the future openings and extensions for such streets or utilities may, at the discretion of the governing body, be made a requirement of the plat.

o. Streets that are or will become extensions of existing streets shall be given the same name as the existing streets. New street names shall not be the same or sound similar to existing street names. All street names shall be at the approval of the governing body.

**5.7 Block** and **Lot Standards**

The following standards shall apply to the layout of blocks and lots in all subdivisions and, to the extent possible, in all re-subdivisions:

a. The size and shape of blocks or lots intended for commercial or industrial use shall be adequate to provide for the use intended, and to meet the parking, loading, and other requirements for such uses contained in the zoning ordinance.

b. Block and lot arrangement and design shall be such that all lots will provide satisfactory building sites, properly related to topography and surrounding and uses.

c. The size and shape of all lots shall comply with all requirements of the zoning ordinance for the zone in which the lot is located.

d. All lots shall abut a public street, or upon an approved private street, with a minimum frontage of at least thirty-five (35) feet measured as a straight line between the two front lot comers.

e. Unless unavoidable, lots shall not front or have direct access to arterial streets or city/county roads. Where unavoidable, lots shall be so arranged as to minimize the number of access points.

f. AII lot lines shall be at right angles to straight street lines or radial to curved street lines, except where, in the judgment of the governing body, a variation to this provision will provide a better street and lot layout.

g. Corner lots shall have sufficient extra width to permit the required front yard setback as specified in the zoning ordinance oriented to either street.

h. Reversed frontage lots are prohibited. Double frontage lots shall only be permitted where abutting a major street and a minor street, and such lots shall front only on the minor street.

**5.8 Parks and Open Space**

All residential subdivisions should be so desired as to meet the neighborhood park and open space needs of their residents. Such needs may be met by dedication and acceptance of public park land, and/or be reservation by covenant of private space, provided, there shall exist sufficient covenants, running with the land, to insure adequate

maintenance by the property owners benefiting from such open space.

**5.9 Parks and School Sites Reserved**
When a tract being subdivided includes lands proposed to be parks or school sites in the Comprehensive Plan or other official plan of the city/county, the subdivider shall indicate such areas on the plat:

a. Proposed park sites shall be reserved for three (3) years, giving the city/county or other authorized public agency the option to purchase the land at the appraised raw land value prior to the subdivision as established by a certified land appraiser. The purchase price shall also include one-half (1/2) of the cost for grading and paving, including curbs, of the portion of any streets that are contiguous to the site and any taxes and interest incurred by the subdivider between the date of reservation and date of purchase by the public agency. Should the park sites not be purchased within three (3) years, the subdivider may then revise the final plat.
b. Proposed school sites shall be reserved for three (3) years, giving the appropriate school district the option to purchase the land at the appraised raw land value prior to the subdivision as established by a certified land appraiser. The purchase price shall also include one-half (1/2) of the cost for grading and paving, including curbs, of the portion of any streets that are contiguous to the site and any taxes and interest incurred by the subdivider between date of reservation and date of purchase by the school district. Should the school sites not be purchased within three (3) years, the subdivider may then revise the final plat.

*ARTICLE 6: PROCEDURE AND SUBMISSION REQUIREMENTS FOR PLATS*

**6.1 Pre-Application Conference**
Whenever a subdivision located in the city/county is proposed, the owner and subdivider shall schedule a pre-application conference with the plats officer. The conference should be attended by the plats officer and such other city/county or utility representatives as is deemed desirable; and by the owner and his or her engineer, and/or planner, as deemed desirable. If any portion of the land to be subdivided lies within two (2) miles of any municipality within the city/county that has adopted subdivision regulations in accordance with the provisions of Chapter 354, Code of Iowa, the plats officer shall notify the city/county in writing, and shall invite the appropriate city/county representatives to attend the pre-application conference. The purpose of such conference shall be to acquaint the city/county with the proposed subdivision, and to acquaint the subdivider with the requirements, procedures, and special problems relating to the proposed subdivision.

**6.2 Sketch Plan Required**
For the pre-application conference, the subdivider shall provide a map or sketch showing the location of the subdivision, the general location of any proposed streets and other improvements, and the general layout and arrangement of intended land uses, in relation to the surrounding area.
6.3 Presentation to Planning Commission or Governing Body
The subdivider may present the sketch plan to the planning commission and governing body for review prior to incurring significant costs preparing the preliminary or final plat.

**6.4 Subdivision Classified**
Any proposed subdivision or re-subdivision shall be classified as a minor subdivision or a major subdivision:

a. Minor Subdivision: Any subdivision that contains not more than four (4) lots fronting on an existing street and that does not require the construction of any public improvements, and that does not adversely affect the remainder of the parcel, shall be classified as a minor plat.
b. Major Subdivision: Any subdivision that, in the opinion of the governing body, does not for any reason meet the definition of a minor subdivision, shall be classified as a major subdivision.

**6.5 Plats Required**
In order to secure approval of any proposed subdivision, the owner and subdivider shall submit to the city/county, plats and other information as required by this ordinance. The owner and subdivider of any major subdivision shall comply with the requirements for a preliminary plat and the requirements for a final plat. The owner and subdivider of a minor subdivision may elect to omit the submission of a preliminary plat.

**6.6 Requirements of the Preliminary Plat**
The subdivider shall prepare and file with the plats officer, twenty (20) copies of the preliminary plat, drawn at a scale of one inch equals one hundred feet (1"-100") or larger. sheet size shall not exceed twenty-four inches by thirty six inches (24" X 36"). Where more than one sheet is required, the sheets shall show the number of the sheet and the total number of sheets in the plat, and match lines indicating where other sheets adjoin. The preliminary plat shall be clearly marked "Preliminary Plat" and shall show, or have attached thereto, the following:

a. Title, scale, north point, and date on each sheet.
b. Proposed name of the subdivision that shall not duplicate or resemble existing subdivision names in the city/county.
c. The name and address of the owner and the name, address, and profession of the person preparing the plat.
d. A key map showing the general location of the proposed subdivision in relation to surrounding lands.
e. The names and locations of adjacent subdivisions and the names of record owners and location adjoining parcels of unplatted land. A list of all owners of record of property located within two hundred (200) feet of the subdivision boundary shall be attached.
f. The location of property lines, streets and alleys, easements, buildings, utilities, watercourses, tree masses, and other existing features affecting the plan.
g. Existing and proposed zoning of the proposed subdivision and adjoining property.
h. Contours at vertical intervals of not more than two (2) feet if the general slope of the site is less than ten (10) per cent and at vertical intervals of not more than five (5) feet if the general slope is ten (10) per cent or greater.
i. The legal description of the area being platted.
j. The boundary of the area being platted, shown as a dark line, with the approximate length of boundary lines and the approximate location of the property in reference to known section lines.
k. The layout, numbers, and approximate dimensions of proposed lots. I. The location, width, and dimensions of all streets.
m. The proposed names for all streets in the area being platted.

n. Present and proposed utility systems, including sanitary and storm sewers, other drainage facilities, water lines, gas mains, electric utilities, and other facilities.
o. Proposed easements showing locations, widths, purposes, and limitations.
p. Parcels of land proposed to be dedicated or reserved for schools, parks, playgrounds; or other public, semi-public or community purposes; or shown for such purpose in the Comprehensive Plan or other adopted plans.
q. A general summary description of any protective covenants or private restrictions to be incorporated in the final plat shall be attached.
r. Any other pertinent information, as necessary.
s. The fee, as required by this ordinance.

**6.7 Procedures for Review of Preliminary Plats**

a. The plats officer shall provide copies of the plat to the city/county engineer, and such other persons as necessary to review the plat, and shall schedule the plat for consideration by the planning commission. The plats officer shall maintain a copy of the plat for public inspection.
b. The city/county engineer shall examine the plat as to its compliance with the requirements of the ordinances and standards of the city/county and good engineering practice, and shall report his or her findings regarding the plat to the planning commission.
c. The planning commission shall examine the plat and the report of the city/county engineer, and such other information as it deems necessary or desirable, to ascertain whether the plat conforms to the ordinances of the city/county and conforms to the Comprehensive Plan and other duly adopted plans of the city/county. The planning commission shall, within forty-five (45) days of the filing of the plat with the plats officer, forward a report and recommendation regarding the plat to the governing body. If such recommendation is to disapprove or modify the plat, the reasons therefore shall be set forth in writing in the report and a copy of the report and recommendation shall be provided to the applicant.
d. The governing body shall examine the plat, the report of the city/county engineer, the report of the planning commission, and such other information as it deems necessary or desirable. Upon such examination, the governing body shall ascertain whether the plat conforms to the ordinances and standards of the city/county, conforms to the Comprehensive Plan and other duly adopted plans of the city/county, in order to protect the public health and welfare. Following such examination, the governing body may approve, approve subject to conditions, or disapprove the plat. If the decision of the governing body is to disapprove the plat, or to approve the plat subject to conditions, the reasons therefore shall be set forth in writing in the official records of the governing body, and such decisions shall be provided to the applicant. Action on the preliminary plat by the governing body shall be taken within sixty (60) days of the filing of the plat with the plats officer. However, if any portion of the land to be subdivided lies within two (2) miles of any municipality within the city/county that has adopted subdivision regulations in accordance with the provisions of Chapter 354, Code of Iowa, the governing body shall defer final action on the plat until action has been taken by the municipality.

**6.8 Duration of Approval of Preliminary Plat**
The approval of a preliminary plat by the governing body shall be valid for a period of one (1) year from the date of such approval; after which such approval shall be void, and the subdivider shall take no action requiring the precedent approval of a preliminary plat except upon application for and approval of an extension of such period of validity, by the governing body.

**6.9 Authorization to Install Improvements**
The approval of a preliminary plat shall constitute authorization by the governing body for the installation of improvements as required by this ordinance, and as shown on the preliminary plat; provided no such improvement shall be constructed or installed until and unless the plans, profiles, cross sections, and specifications for the construction of such improvement have been submitted to, and approved in writing by, the city/county engineer.

**6.10 Completion and Acceptance of Improvements**
Before the governing body will approve the final plat, any improvements to become the property of the city/county shall be constructed and accepted by formal resolution of the governing body. Before passage of said resolution of acceptance, the city/county engineer shall report that said improvements meet all city/county specifications and ordinances or other city/county requirements, and the agreements between the subdivider and the city/county.

**6.11 Performance Bond Permitted**
In lieu of the requirement that improvements be completed prior to the approval of a final plat, the subdivider may post a performance bond with the city/county, guaranteeing that improvements not completed shall be completed within a period of one (1) year from the date of approval of such final plat.

**6.12 Requirement of the Final Plat**
The subdivide shall, within one year from the date of approval of the preliminary plat, unless such time period has been extended, prepare and file with the plats officer, twenty (20) copies of the final plat and required attachments, as set forth in this ordinance. Except for a final plat for a minor subdivision as set forth herein, no final plat shall be considered by the governing body until and unless a preliminary plat for the area included in the proposed final plat has been approved and has not expired and become void as set forth above.

The final plat shall be drawn at a scale of one inch equals one hundred feet (1": 100') or larger. Sheet size shall be no greater than eighteen inches by twenty four inches (18" x 24") nor smaller than eight and one-half inches by eleven inches (8 1/2" x 11 ") and shall be of a size acceptable to the county auditor. If more than one sheet is used, each sheet shall clearly show the number of the sheet, the total number of sheets included in the plat, and match lines indicating where other sheets adjoin.

The final plat shall be clearly marked “Final Plat” and shall show the following:

a. The name of the subdivision.
b. Name and address of the owner and subdivider.
c. Scale, and a graphic bar scale, north arrow, and date on each sheet.

d. All monuments to be of record, as required by Chapter 114A, Code of Iowa.
e. Sufficient survey data to positively describe the bounds of every lot, block, street easement, or other areas shown on the plat, as well as the outer boundaries of the subdivided lands.
f. All distance, bearing curve, and other survey data as set forth in Chapter 114A, Code of Iowa.
g. All adjoining properties shall be identified, and where such adjoining properties are a part of a recorded subdivision, the name of that subdivision shall be shown. If the subdivision platted is a re-subdivision of a part or the whole of a previously recorded subdivision, sufficient ties shall be shown to controlling lines appearing on the earlier plat to permit an overlay to be made. Re-subdivisions shall be labeled as such in a subtitle following the name of the subdivision wherever the name appears on the plat.
h. Street names and clear designation of public alleys.
i. Block and lot numbers.
j. Accurate dimensions for any property to be dedicated or reserved for public use, and the purpose for which such property is dedicated or reserved for public use.
k. The purpose of any easement shown on the plat shall be clearly stated and shall be confined to only those easements pertaining to public utilities including gas, power, telephone, cable television, water, sewer; easements for trails, bikeways, ingress, and egress; open space conservation; and such drainage easements as are deemed necessary for the orderly development of the land encompassed within the plat.
I. All interior excepted parcels, clearly indicated and labeled, "not a part of this plat."
m. A strip of land shall not be reserved by the subdivider unless the land is of sufficient size and shape to be of some practical or conservation use as determined by the governing body.
n. Legal description.
o. The minimum unadjusted accepted error of closure for all subdivision boundaries shall be 1: 10,000 and shall be 1 :5,000 for any individual lot.
p. A statement by a registered land surveyor that the plat was prepared by the surveyor or under the surveyor's direct personal supervision, signed and dated by the surveyor and bearing the surveyor's Iowa registration number or seal; and a sealed certification of the accuracy of the plat by the registered land surveyor who drew the plat.

**6.13 Attachments to the Final Plat**

The following shall be attached to and accompany any final plat:

a. A certificate by the owner and his or her spouse, if any, that the subdivision is with their free consent, and is in accordance with the desire of the owner and spouse. This certificate must be sized and acknowledged by the owner and spouse before some officer authorized to take the acknowledgments of deeds.
b. A complete abstract of title and an attorney's opinion showing that the fee title to the subdivision is free from encumbrance other than those secured by an encumbrance bond.
c. A certificate from the county treasurer that the subdivision land is free from unpaid taxes.
d. A certificate from the clerk of the district court that the subdivision land is free from all judgments, attachments, or mechanics or other liens of record in his or her office. e. A certificate from the county recorder that the title in fee is in the owner

and that it is free from encumbrances other than those secured by an encumbrance bond.

f. The encumbrance bond, if any.

g. A statement of restrictions of all types that run with the land and become covenants in the deeds of lots.

h. A certificate by the county engineer that all required improvements have been satisfactorily completed in accordance with the construction plans as approved and in substantial compliance with the approved preliminary plat. Prior to such certification, "as built" plans for all improvements to become property of the city/county, shall have been provided to the city/county engineer. in lieu thereof, the city clerk/county auditor may certify that a bond guaranteeing completion has been approved by the city/county attorney and filed with the clerk/auditor.

i. Where any improvements are to become the property of the city/county, a resolution accepting and approving such improvements, along with the maintenance bond required by this ordinance.

j. A resolution and certificate for approval by the governing body, and the signature of the chairman.

k. The applicable fee, if any.

**6.14 Procedures for the Review of Final Plats**

a. The plats officer shall provide copies of the plat to the city/county engineer, and such other persons as are necessary to review the plat; and shall schedule that plat for review by the governing body. The plats officer shall maintain one copy for public inspection.

b. The plats officer and the city engineer shall examine the plat as to its compliance with the ordinances and standards of the city/county and its conformance with the preliminary plat, and shall set forth their findings in writing. A copy of the findings shall be provided to the subdivider.

c. If the plat is found to substantially conform to the preliminary plat as approved, the final plat shall be forwarded to the governing body for review. If the plat is found not to conform to the preliminary plat, it shall be referred to the planning commission for review prior to review by the governing body. The planning commission shall then review the plat and shall forward a written recommendation thereon to the governing body within forty five (45) days of the filing of the plat with the plats officer. If the recommendation is to disapprove the plat, or to require modification of the plat, the reasons therefore shall be set forth in writing, and a copy of the recommendation shall be provided to the subdivider.

d. Upon receipt of the plat and written reports thereon, the governing body shall review the plat and attachments thereto. If the plat is found to conform to the ordinances and standards of the city/county and the Comprehensive Plan and other duly adopted plans, all as of the date of approval of the preliminary plat, and is found to substantially conform to the preliminary plat, the governing body shall approve the plat, and shall cause its approval to be entered on the plat.

e. Action on the final plat by the governing body shall be taken within sixty (60) days of the date of filing of the plat with the plat officer. However, if any portion of the land to be subdivided lies within two (2) miles of any municipality within the city/county that has adopted subdivision regulations in accordance with the provisions of Chapter 354, Code of Iowa, the governing body shall defer final action on the plat until action has been taken by the municipality. If the action is to

disapprove the plat, the reasons therefore shall be set forth in the official records of the governing body and such decisions shall be provided to the subdivider.

*ARTICLE 7 OTHER PROVISIONS*

**7.1 Variances**

Where in the case of a particular proposed subdivision, it can be shown that strict compliance with the requirements of this ordinance would result in extraordinary hardship to the subdivider, because of unusual topography or other conditions, the governing body may vary, modify, or waive the requirements so that substantial justice may be done and the public interest secured, provided, however, that such variance, modification or waiver will not have the effect of nullifying the intent and purpose of this ordinance. In no case shall variance or modification be more than minimal easing of the requirements as necessary to eliminate the hardship. In so granting a variance, the governing body may impose such additional conditions as are necessary to secure substantially the objectives of the requirements so varied, modified, or waived.

**7.2 Severability Clause**

If any section, provision or part of this ordinance shall be adjudged invalid or unconstitutional, such adjudication shall not affect the validity of the ordinance as a whole or any section, provision, or part thereof not adjudged invalid or unconstitutional.

**7.3 Changes and Amendments**

This ordinance or any provision of this ordinance may be changed or amended from time to time by the governing body, provided, however, that such changes or amendments shall not become effective until after a public hearing has been held following due public notice.

**7.4 Ordinance Not to Limit other Ordinances**

Nothing contained herein shall serve to abrogate, limit, repeal, or otherwise modify any other ordinance or regulation except as expressly set forth herein. If any provision of this ordinance conflicts with the provisions of any other ordinance, regulation, or statute, the most restrictive shall apply.

*ARTICLE 8 WHEN EFFECTIVE*

This ordinance shall be effective after its final passage, approval, and publication as provided by law. Passed and approved this __ day of _____.

Chairperson: _____

ATTEST: _____, City Clerk/County Auditor

# MODEL TOOL
# LOESS HILLS SCENIC BYWAY CORRIDOR

## PLANNED CONSERVATION DEVELOPMENT ORDINANCE

*ARTICLE 1 INTRODUCTION*

The scenic beauty of the Loess Hills and its relative proximity to the Omaha/Council Bluffs metropolitan area creates a demand for residential development in the Loess Hills counties. There is general agreement that development within the counties is desirable, but not at the expense the area's scenic, agricultural, archeological and natural resources. A Planned Conservation Development enables land to be developed while preserving the rural community character and limiting environmental impacts.

*ARTICLE 2 PURPOSE*

This ordinance is adopted for the following purposes:

1. To meet demand for housing in a rural setting in accordance with the city/county comprehensive plan
2. To allow for greater flexibility and creativity in the design of residential developments;
3. To encourage the permanent preservation of open space, agricultural land and areas of sensitive natural resources;
4. To preserve scenic views by minimizing views of new development from existing roads; and
5. To protect and restore environmentally sensitive areas, minimize disturbance to existing vegetation, and maintain the unique natural characteristics of the Loess Hills

*ARTICLE 3 DEFINITIONS*

1. "Common open space" – Undeveloped land within a conservation subdivision that has been designated, dedicated, reserved, or restricted in perpetuity from further development and is set aside for the use and enjoyment by residents of the development. Common open space shall not be part of individual residential lots. It shall be substantially free of structures, but may contain historic structures and/or such recreational facilities for residents as indicated in the approved development plan. It shall not include space devoted to streets and parking.
2. "Conservation easement" – The grant of a property right or interest from the property owner to a unit of government or nonprofit conservation organization stipulating that the described land shall remain in its natural, scenic, open or wooded state, precluding future or additional development.
3. "Conservation subdivision" – A housing development in a rural setting that is characterized by compact lots and common open space, and where the natural features of the land are maintained to the greatest extent possible.
4. "Nonprofit conservation organization" – Any charitable corporation, charitable association, or charitable trust (such as a land trust), the purposes of which include

retaining or protecting the natural scenic or open space values of real property, assuring the availability of real property for agricultural, woodland, recreational or open space use, protecting natural resources, maintaining or enhancing air or water quality or preserving the historical, architectural, archaeological or cultural aspects of real property.

5. “Primary Conservation Areas” - Areas regulated by state and federal law such as wetlands or critical habitat.
6. “Secondary Conservation Areas” - Areas with characteristic scenic or environmental features such as steep slopes, natural drainage ways, woodlands, prime agricultural land, historic sites, or scenic views. Loess Hills Special Landscape Areas (SLA) shall be considered Secondary Conservation Areas.

*ARTICLE 4 PERMITTED USES*

1. Only the use of structures or land listed in this section shall be allowed in a conservation subdivision:
   a. Single family dwellings;
   b. Multi family dwellings;
   b. Apartments;
   c. Public or private park, open space preserve;
   d. Recreation area which may include recreational uses which do not produces noise, glare, odor, air pollution, fire hazards, or other things detrimental to existing natural environment prospective adjacent structures or to existing or prospective development of the neighborhood.
2. Accessory uses and structures customarily incidental to any principal permitted use such as garages or garden sheds.

*ARTICLE 5 CONDITIONAL USES*

Complementary land uses may be allowed as conditional uses based upon approval by the planning commission:

1. Public and parochial schools, elementary and secondary, and colleges and universities;
2. Churches, chapels, temples, and similar places of worship;
3. Service retail or office; and
4. Any use which is interpreted by the director of planning and city/county development to be a use similar to one of the above named uses and in conformance with the intent of this district.

*ARTICLE 6 CONCEPT PLAN*

A concept plan must be submitted to the planning commission demonstrating the proposed Planned Conservation Development complies with the purpose and intent of the ordinance.

1. Site context map illustrating the parcel in relation to its surroundings. The map shall include:
   a. Topographic contours at 2-foot intervals;
   b. Surface water bodies, floodplains, wetlands, and natural drainage ways;
   c. Steep slopes;
   d. Land cover;
   e. Stand-alone trees with a caliper greater than 24 inches;
   f. Critical habitat; and
   g. Existing easements within 500 feet of the parcel to be developed.

2. Views of the site, including views onto the site from the surrounding roads, public areas, and elevated areas, including photographs with a map indicating the location where the photographs were taken..
3. Documents demonstrating that the following conservation design process was performed by a certified landscape architect:
   a. Identification of primary conservation areas;
   b. Identification of secondary conservation areas;
   c. Delineation of potentially developable areas which, to the greatest extent possible, shall be outside of identified primary and secondary conservation areas;
   d. Location of residential units, approximate sites of units, private yards, and shared open space and amenities;
   e. Alignment of streets and trails to provide access. New trails and streets should be laid out to create internal and external connections to existing and/or potential future streets, sidewalks, and trails.
   f. Lot lines drawn to create common open space made up of primary and secondary conservation areas as well as residential lots.
4. Proposed methods and location of water supply and sewage treatment
5. Proposed stormwater management based on *Loess Hills Stormwater Best Management Practices Guidance Manual*, 2008.
6. Proposed methods for ownership and management of common open space.

*ARTICLE* 7 *MINIMUM PARCEL SIZE*

A minimum of ten (10) contiguous acres shall be required for a Conservation Subdivision. The planning and zoning commission may increase or decrease the ten (10) acre minimum land area, if it deems such change necessary to fulfill the purpose and intent of this ordinance.

*ARTICLE* 8 *REQUIREMENTS REGARDING TRACT*

1. The developer shall provide within the planned conservation development a sanitary sewage disposal system shall be of sufficient size and design to collect and dispose of all sewage from all present and probable structures in the planned unit.
2. The developer shall provide within the planned conservation development a stormwater management facility to convey stormwater runoff through and from the development in accordance with the *Loess Hills Stormwater Best Management Practices Guidance Manual*, 2008 and all other applicable local, state, and federal requirements.
3. The developer shall provide within the planned conservation development a potable water system which shall be of sufficient size and design to supply potable water to each of the structures to be erected in the development. The developer shall also provide a fire hydrant within six hundred (600) feet of each structure.

*ARTICLE* 9 *DENSITY AND DESIGN STANDARDS.*

1. The following percentages of the total land area shall be devoted to the specified uses:
   a. A minimum of fifty percent (50%) shall be preserved as common open space. Any proposed open space, unless conveyed to the city/county or nonprofit conservation organization shall be subject to a recorded restriction enforceable by the city/county, providing that such land shall be perpetually kept in an open state, that it shall be preserved exclusively for the purposes set forth herein,

and that it shall be maintained in a manner which will endure its suitability for its intended purposes.

b. A maximum of fifty percent (50%) of the development shall be used for residential or other conditional uses. This includes land devoted streets, alleys, parking areas, private open spaces and courts which abut and service primarily residences or businesses.

2. Residential Density. The density of residences shall not exceed ten (10) units per acre of land within the development which is devoted to residential use, as defined above, and usable open space.
3. Lot Size. There shall be no minimum lot size, no minimum setbacks, no minimum percentage of lot coverage, and no minimum lot width. However, every single family dwelling shall have access to a public street, court, walkway, or other area dedicated to public use. No structure and no group of structures (such as semi-attached dwellings or a row of town houses) shall be erected within twenty four (24) feet of any other structure or group of structures.
4. Height. The height of any residential structure within, a planned conservation development shall not exceed thirty five (35) feet, and the height of other structures (except churches) shall not exceed forty five (45) feet.
5. Length. There shall be no continuous structure of town houses, attached dwellings or apartments containing more than twelve (12) dwelling units.
6. Location of Structures. The proposed location and arrangement of structures shall not be detrimental to existing or prospective adjacent structures or to existing or prospective development of the neighborhood.
7. Protection of Open Spaces. Open spaces between structures, including those spaces being used as public or private recreational areas, shall be protected by adequate covenants running with the land or conservation easements.
8. Roads and Parking Areas. The dimensions and construction of roads, alleys, and parking areas within the development shall conform with all applicable state, city/county ordinances and regulations.

*ARTICLE* 10 *WHEN EFFECTIVE*

This ordinance shall be effective after its final passage, approval, and publication as provided by law. Passed and approved this __ day of _____.

Chairperson: _____

ATTEST: _____, City Clerk/County Auditor

Figure 1:
PRIMARY CONSERVATION AREAS

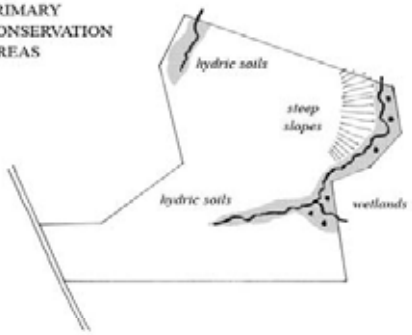


Figure 4:
LOCATING HOUSE SITES

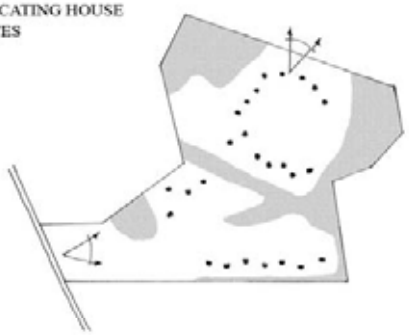

Figure 2:
SECONDARY CONSERVATION AREAS

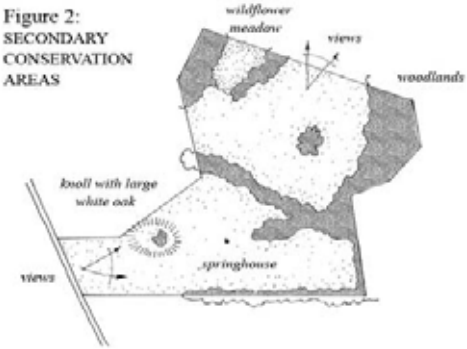


Figure 5:
ALIGNING STREETS AND TRAILS

Figure 3:
POTENTIAL DEVELOPMENT AREAS

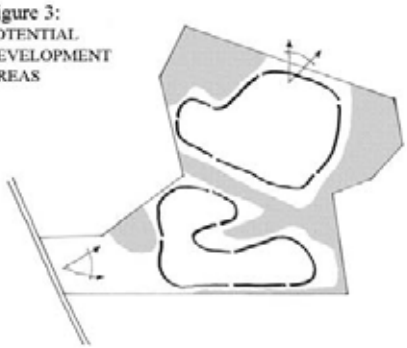

Figure 6:
DRAWING IN THE LOT LINES

Planned Conservation Development Process (Andres Duany)

# MODEL TOOL
# LOESS HILLS SCENIC BYWAY CORRIDOR

## MINING/MINERAL EXTRACTION ORDINANCE

ARTICLE 1 PURPOSE
The purpose of this ordinance is to identify, protect, conserve and enhance the environmental and cultural resources; while providing for the economic removal and use of minerals which includes; non-metallic minerals, clay, ceramic or refractory minerals, crushed or broken stone, rock, sand, gravel, and loess soils in the area known as the Loess Hills Landform Region. The counties included in this region are: 1) Fremont 2) Mills 3) Pottawattamie 4) Harrison 5) Monona 6) Woodbury and 7) Plymouth. An applicant must meet certain requirements as specified in this ordinance when filing for a conditional use in addition to the general requirements contained in other sections of the zoning regulations.

The developmental and operational criteria contained in this ordinance are intended to assist in the formulation of conditions to be imposed on individual extraction operations. The criteria have been designed to eliminate potential health risks and minimize the adverse impact on other land uses due to extraction operations.
The city/county will have the discretion of requiring more or less stringent conditions based upon the location of a proposed operation. This must be enacted as a city/county ordinance or included within a city/county ordinance such as zoning ordinance. Applications should be submitted to the city/county zoning administrator or other designated official. Enforcement shall be by the city/county zoning administrator or other designated official.

ARTICLE 2 SUBMISSION OF APPLICATION
The application for extraction shall be filed with the planning office on the prescribed conditional use form at least 30 days in advance of a regularly scheduled planning commission meeting.

ARTICLE 3 APPLICATION
The conditional use application shall be accompanied by the following:

**3.1. Stage One**

a. Evidence of feasibility and the character and thickness of the mineral deposit:
    1. Description of the character and thickness of the mineral deposit;
    2. Boring logs composition of deposit; and
    3. Average depth of overburden to be redistributed.

b. Site and Operational Analysis:
1. Site Information:
a. Location of site-county, section and township;
b. Property line survey;
c. Easements and rights-of-way;
d. Aerial Photo;
e. Zoning and land use maps;
f. Existing land use (adjacent and in general area the site);
g. Access and transportation arteries (indicate types of surface); and
h. Development trends (patterns of expansion) of adjacent property.

2. Description of Environment:
a. Contour maps (2 ft. or 5 ft. contour interval preferred);
b. Soils data;
c. Percentage of waste (sand, fines, etc.);
d. Depth, outline and type of unmineable material;
e. Groundwater elevation (normal); and
f. Groundwater flow and character.

3. The Deposit:
a. Depth of topsoil and overburden;
b. Deposit depth and outline;
c. Percentage of waste (sand, fines, etc.);
d. Depth, outline and type of unmineable material;
e. Groundwater elevation (normal); and f. Groundwater flow and character.

4. Equipment and Operational Procedures
a. Type of excavating equipment;
b. Type of transporting equipment;
c. Processing plan layout, including stockpiles (diagrammatic);
d. Anticipating general excavation patterns; and
e. Location of settling ponds (if any).

5. Review of Historical/Archaeological Features on Site.

6. Assessment of Wildlife and Possible Impacts from Proposed Operation.

c. Extraction/Rehabilitation:
1. Conceptual Sketch Plan and Narrative:
a. Layout major excavation and rehabilitation pattern (to include):
1. Establish high and low points;
2. Stockpiling method and locations;
3. Handling of topsoil (preservation and re-spreading of topsoil) and possible effects on change in soil composition;
4. Staged method of restoration;
5. Proposed land features;
6. Drives, access and traffic generation;
7. Setbacks (Min. 50 feet from all property lines);
8. Fences;
9. Outline measures to be taken for noise, dust, erosion control and protection of wildlife habitat;
10. Permanent constructed features to be left on site;
11. Estimated length of operation;
12. Determine essential screening to reduce inherent conflicts; and
13. Future land use alternatives.

b. Brief discussion considering impact of proposed operations on surrounding land areas.

**3.2 Stage Two**

a. Detailed Site and Operational Analysis:
   1. Prepare detailed outline of mineral deposits;
   2. Determine the volume of material unsuitable for processing;
   3. Outline area required for processing plant (including stockpiles and handling of topsoil); and
   4. Coordinate Excavation and Development Functions:
      a. Review equipment in respect to land forming capabilities;
      b. Manipulate the excavation equipment within the scope of its operating patterns;
      c. Minimize hauling distance of land forming material; and
      d. Taking both site and operational characteristics into consideration, develop the specific patterns of excavation what will implement the development of the proposed land forms.

b. Detailed Extraction/Rehabilitation Plan:
   1. Handling and placement of overburden;
   2. Handling and placement of topsoil;
   3. Detailed planting and screening plans; and
   4. Detailed grading plan including topography (1 or 2 feet contour interval), drainage, and land form grading.

*ARTICLE* 4 *PERFORMANCE STANDARDS*

1. Progressive rehabilitation (Excavation and rehabilitation occur simultaneously) will be required for any mineral extraction area.
2. Topsoil requirements:
   a. Topsoil is to be preserved and utilized for site rehabilitation; and
   b. Topsoil to be re-spread to the depth that originally existed.
3. Planting and seeding of depleted areas will be implemented as soon as practicable to prevent erosion, as approved by the planning and zoning administrator.
4. Remove equipment associated with the industry as soon as excavation is terminated.
5. Do not permit the accumulation of debris and abandoned equipment within the pit or on the property.
6. Cut slopes will not exceed the normal angle of repose.
7. Slope requirements:
   a. 3H: 1V maximum slope for mowed banks;
   b. 2H:1V maximum slope for unmowed banks with vegetation cover slope for spoil banks (Coincide with Code of Iowa. Chapter 83A);
   c. 5H: 1V maximum slope above water line; and
   d. 5H:1V maximum slope below water line extended a minimum horizontal distance of 10 feet into the water body from shoreline.
8. Slope requirements may be changed subject to the approval of the planning and zoning commission.
9. Individual site bonding required for all mineral extraction areas:
   a. The operator shall post bond with the city clerk/county auditor, which bond will ensure to the city/county that the restoration for reuse as provided in the approved plan shall be completed by the operator with in one (1 ) year of the discontinuance of the extraction activities specified in the approved master plan. The amount of the bond shall not be less than the estimated cost of the restoration is not completed within the specified time, the city/county may use

the bond or any portion there of to complete restoration. Bond requirements may be waived or modified if the applicant can demonstrate that bonding under compliance with Chapter 83.A or the 1989 Code of Iowa will be sufficient to ensure restoration of the site as specified in the approved plan.

*ARTICLE* 5 *FEE*

If a conditional use is granted, the operator shall pay to the city/county an annual fee of $ _____ (examples suggest $10.00)per acre of land which is being disturbed by the extraction activities and has not been reclaimed. The fee shall be used to defray the direct and indirect costs associated with general administration and enforcement of this section. The fee shall be payable on January 1 of each year and deposited in the general fund of the city/county. When a conditional use is first granted. the fee shall be prorated based on the approval date.

*ARTICLE* 6 *NOTIFICATION REQIREMENTS*

The planning director shall notify by U.S. mail all property owners of record within one mile of the proposed conditional use area or the owners of the thirty properties nearest to the affected property, whichever affects the least number of owners, of the time, date, place and purpose of the public hearing. The notice shall e mailed not less than 15 days prior to the public hearing.

*ARTICLE* 7 *REVIEW OF CONDITIONAL USE*

The conditional use permit shall be reviewed by the planning commission (or applicable governing body) after one year, and thereafter for the life of the operation at one, two or three-year intervals at the discretion of the planning commission. The review shall consider the applicant's past performance in meeting the stipulations of the conditional use and the effectiveness of the stipulations in protecting the public interest. Notification of the meeting at which time the planning commission will review the permit shall be given in accordance with rules governing such meetings.

The planning commission may approve continuation of the conditional use. The planning commission may also approve continuation of the conditional use with modifications or deny continued use based on a material change in facts or circumstances from the time of original approval. The decision of the planning commission shall be subject to appeal in the same manner as other conditional use decisions.

*ARTICLE* 8 *DEVELOPMENT OF OPERATIONAL CRITERIA*

The following criteria shall be considered in developing conditions for applications involving mineral extraction. More stringent requirements may be imposed by the city/county or the applicant may present arguments to relax the requirements based on specific characteristics of the site.

**8.1 Buffer Area and Socio-Economic Impact Study**

a. A mineral operation shall be a minimum distance of 1000 feet from an existing residence, measured from the boundary of the conditional use area, except in those instances when the operator secures a waiver from the affected landowner and provides such waiver to the planning commission.

b. In those instances where the planning commission determines that an application for mineral extraction may potentially impact other land uses and landowners beyond the 1,000 foot buffer area, the planning commission will direct that an independent socio-economic impact study be prepared at the applicant's expense which identifies the impact on the following factors and the mitigation measures to be employed:

1. Population and employment;
2. Tax base;
3. Property valuation;
4. Housing;
5. Schools;
6. Emergency and governmental services;
7. Public facilities;
8. Health effects;
9. Roads;
10. Land use; and
11. Applicant's historical record at other sites.

The planning commission may exempt certain factors from the impact study or require additional factors to be addressed based upon the characteristics of the specific site.

**8.2 Hours of Operation**

a. Hours of operation shall be limited as follows: Monday through Friday - 7:00 A.M. to 6:00 P.M., Saturday - 8:00 A.M. to 12:00 Noon. Operations shall not be conducted on legal holidays. Activities such as office or maintenance operations which produce no noise off-site shall not be restricted by the hours of operation.

b. Blasting shall be scheduled on weekday at 12:00 noon. There shall be no blasting on legal holidays. Residents within one mile of the conditional use area may request notification of the date of the blast. The planning director shall specify to the operator the type and manner of notification. If a scheduled blast will be delayed, notice of the new time of blasting shall be provided to residents.

**8.3 Visual Considerations**

a. Earth berms and vegetation are methods which shall be employed to minimize visual impacts and reduce the effects of noise.

b. The need for and placement of berms shall depend on the orientation and position of the excavation site with respect to residences and roadways. Berms shall be located in such a way as to restrict the public's view of the property. Consideration shall be given to placing the berms as close to the public point of view as practical. Generally, berms should be six feet in height and seeded immediately after construction to avoid soil erosion. Berms shall be maintained and kept reasonably free of weeds.

c. The operator shall work with the county conservation district and planning director to develop a planting program. The plants shall be indigenous to the area and properly cared for to ensure the highest survival rate and all dead plants shall be replaced during the current planting season. As a minimum, the program shall include trees of varying maturity. The planting program shall be reduced to writing and kept on file in the planning office.

d. The operator shall not commence with blasting or the extraction mineral until the planning director has inspected the berms and tree plantings and approved their installation.

**8.3 Blasting**

a. A seismograph reading shall be recorded for each blast. The planning commission shall designate the party to be responsible for conducting such reading. The blasting plan and the results of the seismograph reading shall be filed with the planning office within three weeks of the blast. Readings shall not exceed 0.5 inches per second recorded at a distance no greater than 1000 feet from the blast.

b. The blast shall n to exceed 300 pounds of explosive per delay. Each delay shall be a minimum of 10 milliseconds. The explosives shall not exceed 10,000 pounds per shot.

**8.4 Noise**

a. The noise level produced from rock, sand, gravel, and loess soil operations not exceed an average of 55 decibels recorded over a 10 minutes period measured at the nearest existing residence to the boundary of the conditional use area. Off-site activities which contribute to background noise levels shall be taken into consideration when monitoring an operation. Blasting shall not be recorded as part of the noise level.

**8.5 Dust**

a. The planning director shall direct that dust monitoring take place at the applicant's expense at least weekly during the first six weeks of production within the conditional use area. Thereafter, monitoring shall occur on a monthly basis during the production season or more frequently as circumstances warrant.

b. Two dust monitors shall be used, one upwind and the other downwind of the conditional use area. Total suspended particulates measured by the downwind monitor shall no be more than 10 micrograms per cubic meter of air greater than the measurement recorded by the upwind monitor, measured during a 24 hour period.

c. Dust shall be controlled on-site by the application of water or other approved dust control methods so that no visible dust is emitted beyond the boundaries of the conditional use area. This shall include dust resulting from all production related operations and from material stockpiled on-site. Extreme weather conditions shall be taken into consideration when enforcing this requirement. It is anticipated that dust control methods would normally be reqUired on the process plant as well as on the on-site haul roads to assist in complying with this requirement. Visible dust is defined as dust observable by the naked eye looking perpendicular to the wind along an imaginary vertical plane at the property line.

d. All off-site gravel roads designated as haul routes to reach a hard surfaced road shall have approved dust control agents periodically applied to the road surface to minimize dust. The planning director shall inspect the roads during the hauling season to ensure that dust due to truck traffic is being properly controlled.

**8.6 Hydrology, De-watering and Drainage**

a. The applicant shall document the water elevation and draw down rate of existing wells in an area to be determined by the hydrologic study.

b. De-watering shall not cause flooding problems downstream from the operator.

c. Berms shall not interrupt the natural drainage of the area, unless such diversion is part of an approved drainage control system.

**8.7 Haul Roads**

a. In order to minimize the negative impact of truck traffic on area residents, the city/county shall encourage extraction operations to locate on or near existing hard surfaced roads. Consideration shall be given to the number of residents located along gravel surfaced roads intended for use as haul roads.
b. When city/county roads are designated as haul roads, an agreement shall be filed with the planning director signed by the operator and the township specifying the responsibility for repair work made necessary by the special burden resulting from hauling and travel. The planning director shall inspect the roads to ensure that they are being properly maintained.
c. The potential impact on city/county highways to be used as haul routes shall be considered as part of the review of the conditional use application.

*ARTICLE 9 OPERATOR SURVEY*

**9.1** A surety shall be filed with the city clerk/county auditor to protect the city/county in the event the operator abandons a site without completing the conditions imposed by the conditional use, including fulfillment of the agreement with the township concerning repair of designated haul roads. In lieu of the required surety, the operator may deposit cash with the city/county in the amount equal to the required surety.

**9.2** A minimum surety of $5,000 shall be required when the operation is 10 acres and less. A surety of $500 per acre shall be required on operations larger than 10 acres, up to a maximum of $10,000. In addition to the surety for the site, a surety shall be required in the amount of $5,000 per mile of township road designated as haul roads.

*ARTICLE 10 RECLAMATION*

**10.1** The type and extent of reclamation shall be based on the type of material extracted on the intended post-mining land use. but in all cases the reclamation procedures shall result in the rehabilitation of affected land through contouring and soil stabilization, re-vegetation and other appropriate means so as to create the least amount of unsightliness and most appropriate future use of the reclaimed area. Bodies of water may be incorporated into an acceptable reclamation plan.

**10.2** The applicant shall provide maps, including cross sections, showing the existing natural topography and anticipated topographic conditions upon completion of reclamation. It should also include grading, final slope angles, high wall reduction, benching and terracing of slopes, slope stabilization and re-vegetation where applicable, and erosion control and alternative future land uses. The map or plan shall be at scale of 1 in. - 100 ft. or appropriate scale for the site with a contour interval of 20 ft. or less to be keyed to the appropriate USGS 1 :24,000 scale topographic quadrangle.

**10.3** Grading shall achieve a contour that is most beneficial to the proposed future land use. All berms shall be removed where sand and gravel operations were conducted. In most cases involving quarry operations, the berms shall remain in place unless their removal would serve a more useful purpose.

**10.4** The placement of spoil material and topsoil shall be specified in an approved reclamation plan. A description of topsoil stripping, salvaging, stabilization and conservation methods that will be used during replacement.

**10.5** A plan and description of anticipated final topography, water impoundments, artificial lakes, and drainage on the property.

**10.6** A description of plans for disposition of surface structures, roads, and related facilities after cessation of mining.

**10.7** The estimated cost of reclamation for each stage of the project or the entire site if staging is not planned.

**10.8** A seeding and re-vegetation plan shall be developed for the affected area in consultation with the county conservation district. The planting may include trees and shrubs, methods of seed bed preparation, seeding rates, fertilization, mulching, netting and/or other techniques needed to accomplish soil and slope stabilization. Such planting plan shall be initiated within six months after quarry operations begin or at a time deemed appropriate by the planning and zoning office.

**10.9** All required reclamation activities shall be completed and a compliance inspection shall be performed by the planning director prior to the release of the surety.

*ARTICLE 11 ADDITIONAL CONSIDERATIONS*

1. The maximum height of a bench in a quarry shall be 30 feet.
2. The operator shall secure the property from entry during non-working hours by means of gates and fencing. The property shall continue to be secured until all required reclamation activities have been completed.

*ARTICLE* 12 *WHEN EFFECTIVE*

This ordinance shall be effective after its final passage, approval, and publication as provided by law. Passed and approved this __ day of _____.

Chairperson: _____

ATTEST: _____, City Clerk/County Auditor

# MODEL TOOL
# LOESS HILLS SCENIC BYWAY CORRIDOR

## TELECOMMUNICATIONS TOWERS AND ANTENNAS ORDINANCE

*ARTICLE 1 INTRODUCTION*
An ordinance regulating the placement of telecommunications towers and antennas on property located in the city/county.

*ARTICLE 2 PURPOSE*
The purpose of this ordinance is to:

1. Establish standards for the siting and design of towers and antennas for commercial wireless telecommunications;
2. Encourage the use of existing telecommunications towers or structures as an alternative to new tower construction;
4. Encourage the design and construction of towers and antennae which minimize adverse visual impacts;
5. Restrict the location of communications towers that adversely detract from the natural and scenic environment of the West Face of the Loess Hills, Special Landscape Areas, and the Loess Hills Scenic Byway;
5. Encourage compliance of all telecommunications facilities with all federal state and local regulations; and
6. Facilitate the provision of wireless telecommunications services while preserving farmlands, open space and adjoining settlements as compatible adjoining resources.

*ARTICLE 3 DEFINITIONS*
For use in this ordinance, certain words used herein shall be defined as follows:

1. "Antenna" - Any structure or devise used to transmit or receive telecommunications signals.
2. “Antenna Support Structure” – Any building or structure other than a tower which can be used for location of telecommunications facilities.
3. "Height: - The vertical distance measured from the base of the structure to the highest point of the structure.
4“Special Landscape Area” – Areas identified in the National Park Service *Loess Hills of Western Iowa Special Resource Study and Environmental Assessment*, 2001.
5. “Stealth” – Any telecommunications facility, tower, or antenna which is designed to enhance compatibility with adjacent land uses, including, but not limited to, architecturally screened roof-mounted antennas, antennas integrated into architectural elements, and towers designed to look other than a tower, such as light poles, flag poles and trees.
6. "Telecommunications" - The transmission between or among points specified by the user, of information of the user's choosing, without change in the form or content of the information as sent and received.
7. "Telecommunications Tower" – Any self-supporting latticed, guyed, or monopole structure that supports telecommunications facilities. The term shall not include

amateur radio operator's equipment as licensed by the FCC or structure supporting an earth station antenna serving residential premises or dwelling units exclusively.

8. "Viewshed" – An unobstructed sight of or the range of one's sight while traveling, visiting, driving or otherwise using the natural or man-made resources of the Loess Hills Scenic Byway.
9. "West Face" – The west face of the Loess Hills includes the area of the Loess Hills located between the western boundary of the Loess Hills Landform and one mile east of the ridgeline.

*ARTICLE 4 CONDITIONAL USE*

Telecommunications towers are allowed only as conditional uses and may be permitted upon determination that all of the applicable conditions in this ordinance are met.

*ARTICLE 5 LOCATION LIMITATIONS*

1. No new telecommunications towers shall be allowed in on the West Face of the Loess Hills.
2. No new telecommunications towers shall be located in a Conservation Development District, Loess Hills Conservation District or other similar designation.
3. No new telecommunications towers shall be located in the Loess Hills Scenic Byway Viewshed.

*ARTICLE 6 HEIGHT LIMITATIONS*

Telecommunications towers are permitted as conditional use in the following districts with the specified height limitations.

1. Residential (including Acreage Residential, Agricultural Estate, Limited Agriculture or other similar designation)
   a. New telecommunications towers shall not exceed 100 feet in height.
2. Commercial (including Highway Commercial or other similar designation)
   a. New telecommunications towers shall not exceed 180 feet in height.
3. Industrial
   a. New telecommunications towers shall not exceed 360 feet in height.
4. Agriculture
   a. New telecommunications towers shall not exceed 500 feet in height.

In the event of dense vegetation or other substantial obstacles to signal propagation, total tower height will not exceed 150% of the maximum height permitted. Applicant must demonstrate that additional height above that permitted by this ordinance is necessary for service to residents of the city/county.

Telecommunications facilities that simulate objects that typically occur in landscape similar to the proposed location (except billboards, electrical transmission, or telecommunications towers) may exceed maximum height if, based on the judgment of the planning commission, it would appear in context of the landscape, is aesthetically acceptable, and would be a preferable alternative to an undisguised facility.

Telecommunications facilities located atop or within existing building or structures may result in an overall increase in height of the structure of no more than one-third of the structure's height without the facility and does not exceed 200 feet.

*ARTICLE 7 APPLICATION REQUIREMENTS*

The applicant for a conditional use permit for construction of a telecommunications tower or placement of a commercial telecommunications antenna on an existing structure other than a tower previously permitted shall file an application with the city/county zoning administrator accompanied by a fee of $300. The application shall include the following documents:

1. A site plan, drawn to scale, identifying the site boundary; tower location; tower height; guy wires and anchors; existing and proposed structures, including accessory structures; photographs or elevation drawings depicting design of proposed structures, parking, fences and landscape plan; and existing uses on abutting parcels. A site plan is not required if antenna is to be mounted on an approved existing structure;
2. Visual impact demonstrations using color photo simulations of the proposed tower as it would be seen from residential area, public rights of way, and other public parks;
3. A current map showing locations of applicant's antennas, facilities, existing towers and proposed towers which are reflected in public records, serving any property within the city/county;
4. A report from a structural engineer containing the following:
    a. A description of the tower, including a description of the design characteristics and material;
    b. Documentation to establish that the tower has sufficient structural integrity for the proposed uses at the proposed location and meets the minimum safety requirements in Electronics industries Association (EIA) Standard 222 "Structural Standards for Steel Antenna Towers and Antenna Support Structures. "; and
    c. The general capacity of the tower in terms of the number and type of antennas it is designed to accommodate.
5. Identification of the owners of all antennas and equipment to be located at the site;
6. Evidence that a bona fide need exists for the facility and that no reasonable combination of locations, techniques, or technologies will obviate the need. The applicant must further prove that it has made all reasonable efforts to procure antenna space on existing facilities within a one-half mile radius of the proposed new tower site, including city/county-owned property, and that the equipment for which the tower is being constructed cannot be technologically or structurally accommodated on an existing or approved tower;
7. Evidence that a valid FCC license for the proposed activity has been issued;
8. A written agreement to remove the tower and/or antenna within 180 days after cessation of use;
9. Evidence that the applicable conditions of Section 6 of this ordinance have been met; and
10. Additional information as required to determine that all applicable conditions of this ordinance have been met.

*ARTICLE 8 APPLICABLE CONDITIONS*

Any applicant must show that all of the following applicable conditions are met:

1. Prior to consideration of a permit for location on private property which must be acquired, applicant must show that available publicly owned sites, and available privately owned sites, are unsuitable for operation of the facility under applicable telecommunications regulations and applicant's technical design requirements. A

tower is not allowed if technically suitable space can be found on an existing telecommunications tower within one-half mile radius of the proposed new tower site;

2. Applicant must show that the new tower is designed to accommodate applicant's future demand for additional antennas;
3. Applicant must show that all applicable health, nuisance, noise, fire, building and safety code requirements are met;
4. All towers and telecommunications facilities not requiring FAA painting or marking shall have an exterior finish which enhances the compatibility with adjacent land uses, subject to the review and approval of the planning commission. Towers shall be of stealth/camouflage design unless the planning commission determines stealth features are impractical or the cost of such features represents an undue burden on the applicant.
5. For telecommunications towers on city/county property, applicant must file with the city/county zoning administrator a written indemnification of the city/county and proof of liability insurance or other proof of financial ability to respond to claims up to $1,000,000.00 in the aggregate which may arise from operation of the facility during its life, in form approved by the city/county attorney. This information shall be updated annually by the applicant;
6. Land use regulations, visibility, fencing, screening, landscaping, parking, access, lot size, exterior illumination, sign, storage, and all other general zoning regulations except setback and height, shall apply to the telecommunications tower;
7. No new free-standing or guyed telecommunications tower shall be constructed without a setback from the tower's base of at least 1.5 times the tower height to a public or private road and at least 2.5 times the tower height to the nearest property line; and
8. The base of any telecommunications tower shall be screened from view with a solid screening fence a minimum of six feet in height.

*ARTICLE 9 ELECTRONIC EMMISSIONS AND ELECTROMAGNETIC RADIATION*

1. Prior to commencing regular operation of the facility, all facility owners and operators must submit a certificate of compliance with all current Federal Communications Commission regulations concerning electromagnetic radiation and other electronic emissions applicable to the facility.
2. All facility operators and owners must sign an agreement to be maintained by the city/county, agreeing to bring facilities into compliance with any new federal, sate or local laws or regulations concerning electromagnetic radiation and other electronic emissions applicable to the facility within 180 days of the effective date of the regulations.

*ARTICLE 10 INSPECTION*

At least every 24 months, every telecommunications tower shall be inspected by an expert who is regularly involved in the maintenance, inspection and/or erection of telecommunications towers. At a minimum, this inspection shall be conducted in accordance with the tower inspection check list provided in the Electronics Industries Association (EIA) Standard 222, "Structural Standards for Steel Antenna Towers and Antenna Support Structures." A copy of such inspection record shall be provided to the city/county.

*ARTICLE 11 MAINTENANCE*
All towers, antenna support structures, antennas and telecommunications facilities shall be maintained in good condition by the owner or operator so that the same does not constitute a nuisance to or a danger to the life or property of any person or the public.

*ARTICLE 12 ABANDONMENT*
In the event the use of any telecommunications tower has been discontinued for a period of 180 consecutive days, the tower shall be deemed abandoned. Determination of the date of abandonment shall be made by the city/county zoning administrator. Upon such abandonment, the tower owner shall have an additional 180 days within which to (1) reactivate the use of the tower, or (2) dismantle and remove the tower and all above ground components.

*ARTICLE 13 REMOVAL OF FACILITIES*
The owner of a facility shall establish a $10,000 cash security fund or provide the city/county with an irrevocable letter of credit in the same amount to secure the cost of removing an antenna or tower that has been abandoned. In the event of a transfer of ownership, the seller shall be responsible for notifying the buyer of this requirement and for notifying the city/county of the transfer.

*ARTICLE 14 REPEALER*
All ordinances or parts of ordinances in conflict with the provisions of this ordinance are hereby repealed.

*ARTICLE 15 SEVERABILITY*
If any section or provision of this ordinance is held invalid by a court of competent jurisdiction, such holding shall not affect the validity of any other provision of this ordinance which can be given effect without the invalid portion and to this end, each section and provision of this ordinance is severable.

*ARTICLE 16 PENALTIES*
Any person, as defined in Iowa Code § 4.1 (20), found to be in violation of any of the provisions of this ordinance shall be subject to a civil penalty of $150 for each day of violation, or $300 for each of violation of the infraction is a repeat offense, pursuant to Iowa Code § 331.302(15).

*ARTICLE 17 WHEN EFFECTIVE*
This ordinance shall be effective after its final passage, approval, and publication as provided by law. Passed and approved this __ day of _____.

Chairperson: _____

ATTEST: _____, City Clerk/County Auditor

# MODEL TOOL
# LOESS HILLS SCENIC BYWAY CORRIDOR

## SMALL WIND ENERGY SYSTEM ORDINANCE

*ARTICLE 1 INTRODUCTION*
An ordinance regulating the placement of small wind energy systems located in the city/county

*ARTICLE 2 PURPOSE*

1. Establish standards for the siting and operation of wind energy facilities in the city/county;
2. Encourage compliance of all wind energy facilities with all federal and state regulations;
3. Encourage the design and construction of wind energy facilities which minimize adverse visual impacts;
4. Restrict the location of wind energy facilities that adversely detract from the natural and scenic environment of the West Face of the Loess Hills, Special Landscape Areas, and the Loess Hills Scenic Byway; and
5. Foster the development of wind energy resources while preserving farmlands, open space, and adjoining settlements as compatible adjoining resources.

*ARTICLE 3 DEFINITIONS*
For use in this ordinance, certain words used herein shall be defined as follows:

1. "Meteorological Tower" or "Met Tower" – A structure designed to support the gathering of wind energy resource data, and includes the tower, base plate, anchors, guy cables and hardware, anemometers (wind speed indicators), wind direction vanes, booms to hold equipment anemometers and vanes, data logger, instrument wiring, and any telemetry devices that are used to monitor or transmit wind speed and wind flow characteristics over a period of time for either instantaneous wind information or to characterize the wind resource at a given location.
2. "Rotor diameter" – The cross sectional dimension of the circle swept by the rotating blades of a wind-powered energy generator.
3. "Small Wind Energy System" – A wind energy system that is used to generate electricity; has a nameplate capacity of 100 kilowatts or less; has a total height of 170 feet or less; and is primarily used to generate energy for use by its owner.
4. "Special Landscape Area" – Areas identified in the National Park Service *Loess Hills of Western Iowa Special Resource Study and Environmental Assessment*, 2001.
4. "Total Height" – The vertical distance measure from the average elevation of the finished grade to the tip of a wind generator blade with the tip is at its highest point.
5. "Viewshed" – An unobstructed sight of or the range of one's sight while traveling, visiting, driving or otherwise using the natural or man-made resources of the Loess Hills Scenic Byway.
6. "West Face" – The west face of the Loess Hills includes the area of the Loess Hills located between the westerly boundary of the Loess Hills Landform and

one mile east of the ridgeline.

*ARTICLE 4 CONDITIONAL USE*

A small wind energy system may be permitted in agriculture, limited agriculture, agricultural estate, acreage residential, commercial or industrial districts upon determination that all the applicable conditions in this ordinance are met.

*ARTICLE 5 LOCATION LIMITATIONS*

1. No new small wind energy systems shall be allowed in on the West Face of the Loess Hills.
2. No new small wind energy systems shall be located in a Conservation Development District, Loess Hills Conservation District or other similar designation.
3. No new small wind energy systems shall be located in the Loess Hills Scenic Byway Viewshed.

*ARTICLE 6 APPLICATION REQUIREMENTS*

The applicant for a conditional use permit for construction of a small wind energy system shall file an application with the city/county zoning administrator accompanied by a fee of $300. The application shall include the following documents:

1. A survey map at an appropriate scale identifying:
   a. The site boundary;
   b. Adjacent public right-of-way;
   c. Existing structures
   d. Proposed small wind energy system and accessory structures
   e. Adjacent ownership and existing residence, church, gathering place, library, school or workplace that is not located on the property on which it is located;
   f. Any overhead utility lines
2. A report from a licensed engineer containing the following:
   a. Small wind system specifications including manufacturer and model, rotor diameter, tower height, tower type (freestanding or guyed)
   b. Documentation to establish that the tower has sufficient structural integrity for the proposed use at the proposed location;
   c. Certification that the small wind energy system complies with all applicable state construction and electrical codes and the National Electrical Code.

*ARTICLE 7 APPLICABLE CONDITIONS*

1. Where wind characteristics permit, wind towers shall be set back from the tops of visually prominent ridgelines to minimize the visual contrast from any public access.
2. No wind energy facility shall be installed at any location that would substantially detract from or block the view of the major portion of a recognized scenic vista or scenic corridor, as viewed from any public road right-of-way or publicly accessible parkland or open space within the city/county.
3. Any visible component of a small wind energy system shall be painted a neutral color such as white or pale gray.
4. A small wind energy system shall not be artificially lighted unless such lighting is required by the Federal Aviation Administration (FAA).

5. All electrical wires associated with a small wind energy system other than the wires necessary to connect the wind generator to the tower wiring, the tower wiring to the disconnect junction box, and the grounding wires shall be located underground.
6. A tower in a small wind energy system must be set back:
   a. At least 1.2 times its total height from the property line of the property on which it is located, unless written permission is granted by affected land owner or neighbor;
   b. At least 1.2 times its total height from any public right-of-way, unless written permission is granted by the governmental entity with jurisdiction over the road;
   c. At least 1.2 times its total height from ant overhead utility lines unless written permission is granted from the affected utility
   d. At least 1,000 feet from any residence, church, gathering place, library, school or workplace that is not located on the property on which it is located.
7. The noise generated by the operation of a small wind energy system may not exceed 5 dBA as measured at any point on property adjacent to the parcel on which the small wind energy system is located.
8. Small wind energy systems must meet the following safety conditions:
   a. The minimum distance between the ground and any part of the rotor blade system shall be 30 feet.
   b. All ground mounted electrical and control equipment must be labeled and secured to prevent unauthorized access. A tower may not have step bolts or a ladder within 8 feet of the ground that is readily accessible to the public.
9. The owner of a small wind energy facility shall minimize or mitigate any interference with electromagnetic communications, such as radio, telephone or television signals caused by the facility.

*ARTICLE 8 ABANDONMENT*

1. In the event the use of any small wind energy system has been discontinued for a period of 180 consecutive days, the system shall be deemed abandoned. Determination of the date of abandonment shall be made by the city/county zoning administrator.
2. Upon such abandonment, the small wind energy system owner shall have an additional 180 days within which to (1) reactivate use of the small wind energy system, or (2) dismantle and remove the small wind energy system. If the small wind energy system is not dismantled and removed as required, the city/county may do so and assess the costs against the property for collection in the same manner as a property tax, pursuant to *Iowa Code* §331.384

*ARTICLE 9 REPEALER*

All ordinances or parts of ordinances in conflict with the provisions of this ordinance are hereby repealed.

*ARTICLE 10 SEVERABILITY*

If any section or provision of this ordinance is held invalid by a court of competent jurisdiction, such holding shall not effect the validity of any other provision of this ordinance which can be given effect without the invalid portion and to this end, each section and provision of this ordinance is severable.

*ARTICLE 11 PENALTIES*

Any person, as defined in *Iowa Code* § 4.1 (20), found to be in violation of any of the provisions of this ordinance shall be subject to a civil penalty of $150 for each day of violation, or $300 for each of violation of the infraction is a repeat offense, pursuant to *Iowa Code* § 331.302(15).

*ARTICLE 13 WHEN EFFECTIVE*

This ordinance shall be effective after its final passage, approval, and publication as provided by law. Passed and approved this __ day of _____.

Chairperson: _____

ATTEST: _____, City Clerk/County Auditor

# MODEL TOOL
# LOESS HILLS SCENIC BYWAY CORRIDOR

## WIND ENERGY FACILITY ORDINANCE

*ARTICLE 1 INTRODUCTION*
An ordinance regulating the placement of wind energy facilities located in the city/county.

*ARTICLE 2 PURPOSE*
The purpose of this ordinance is to:

1. Establish standards for the siting and operation of wind energy facilities in the city/county;
2. Encourage compliance of all wind energy facilities with all federal and state regulations;
3. Encourage the design and construction of wind energy facilities which minimize adverse visual impacts;
4. Restrict the location of wind energy facilities that adversely detract from the natural and scenic environment of the West Face of the Loess Hills, Special Landscape Areas, and the Loess Hills Scenic Byway; and
5. Foster the development of wind energy resources while preserving farmlands, open space, and adjoining settlements as compatible adjoining resources.

*ARTICLE 3 DEFINITIONS*
For use in this ordinance, certain words used herein shall be defined as follows:

1. "Meteorological Tower" or "Met Tower" – A structure designed to support the gathering of wind energy resource data, and includes the tower, base plate, anchors, guy cables and hardware, anemometers (wind speed indicators), wind direction vanes, booms to hold equipment anemometers and vanes, data logger, instrument wiring, and any telemetry devices that are used to monitor or transmit wind speed and wind flow characteristics over a period of time for either instantaneous wind information or to characterize the wind resource at a given location.
2. "Rotor diameter" – The cross sectional dimension of the circle swept by the rotating blades of a wind-powered energy generator.
3. "Special Landscape Area" – Areas identified in the National Park Service *Loess Hills of Western Iowa Special Resource Study and Environmental Assessment*, 2001
4. "Total Height" – The vertical distance measure from the average elevation of the finished grade to the tip of a wind generator blade with the tip is at its highest point.
5. "Viewshed" – An unobstructed sight of or the range of one's sight while traveling, visiting, driving or otherwise using the natural or man-made resources of the Loess Hills Scenic Byway.
6. "West Face" – The west face of the Loess Hills includes the area of the Loess Hills located between the western boundary of the Loess Hills landform and one mile east of the ridgeline.

7. “Wind Energy Facility” – An electricity-generating facility consisting of one or more wind turbines under common ownership or operating control that includes substations, MET towers, cables/wires and other building accessories to such facility, whose main purpose is to supply electricity to off-site customers.

*ARTICLE 4 CONDITIONAL USE*

Wind energy facilities are allowed only as conditional uses in agriculture and industrial districts and may be permitted upon determination that all of the applicable conditions in this ordinance are met.

*ARTICLE 5 LOCATION LIMITATIONS*

1. No new wind energy facilities shall be allowed in on the West Face of the Loess Hills.
2. No new wind energy facilities shall be located in a Conservation Development District, Loess Hills Conservation District or other similar designation.
3. No new wind energy facilities shall be located in the Loess Hills Scenic Byway Viewshed.

*ARTICLE 6 APPLICATION REQUIREMENTS*

The applicant for a conditional use permit for construction of a wind energy facility shall file an application with the city/county zoning administrator accompanied by a fee of _____. The application shall include the following documents:

1. Applicant shall identify potential effects in terms of constraints or benefits the wind energy facility may place on current or future use of the land within the project site and the surrounding area. The extent of any limitations due to public health and safety risks shall be specifically addressed, and the effects on the following activities shall also be addressed:
   a. Existing or proposed tourist or recreation activities;
   b. Residential activities;
   c. Industrial activities;
   d. Agricultural activities;
   e. Local or regional tourism; and
   f. Commercial activities
2. A survey map at an appropriate scale identifying:
   a. The site boundary;
   b. Access roads;
   c. Location of tower(s);
   d. Tower height(s);
   e. Existing and proposed structures, including accessory structures;
   f. Photographs or elevation drawings depicting design of proposed structures, parking and fences;
   g. Adjacent ownership and existing residences, schools, churches, hospitals, public libraries, federal, state, county or local parks, recognized historic or heritage sites, identified wildlife preserves, habitats or important bird areas to a distance of 2000 feet.

3. Soil Erosion, Sediment Control, and Storm Water Runoff Plan. Plan shall address what types of erosion control measures will be used during each phase of the project. It shall identify plans for:
   a. Grading;
   b. Construction and drainage of access roads and turbine pads;
   c. Design features to control dust;
   d. Design features to maintain downstream water quality;
   e. Re-vegetation to ensure slope stability;
   f. Restoring the site after temporary project activities;
   g. Disposal or storage of excavated materials;
   h. Protecting exposed soil;
   i. Stabilizing restored material and removal of silt fences or barriers when the area is stabilized; and
   j. Maintenance of erosion controls throughout the life of the project
4. Applicant shall provide information regarding flora and fauna including:
   a. Species;
   b. Officially listed threatened species;
   c. Critical habitat and habitat conditions;
   d. Migratory species
5. A project visibility map, based on a digital elevation model, showing the impact of topography upon visibility of the project from other locations, to a radius of three miles from the center of the project. The base map used shall be a published topographic map showing man-made features, such as roads and buildings.
6. No fewer than four and no more than the number of proposed individual turbines, plus three color photos, no smaller than 3" by 5," taken from locations within a three-mile radius from the site and to be selected by the planning commission, and computer-enhanced to simulate the appearance of the as-built site facilities as they would appear from these locations.

*ARTICLE 7 APPLICABLE CONDITIONS*

1. Where wind characteristics permit, wind towers shall be set back from the tops of visually prominent ridgelines to minimize the visual contrast from any public access.
2. No wind energy facility shall be installed at any location that would substantially detract from or block the view of the major portion of a recognized scenic vista or scenic corridor, as viewed from any public road right-of-way or publicly accessible parkland or open space within the city/county
3. Structures for wind turbines shall be self-supporting tubular towers painted a neutral color such as white or pale gray. No lattice structure shall be used. No logos or advertisements are allowed on these structures. Each turbine shall be marked with a visible identification number located no higher than 15 feet above ground level.
4. Applicant shall take reasonable measures such as planting trees, installing awnings, etc. to mitigate specific adverse visual impacts such as reflections, shadow flicker, and blade glint affecting residences within or immediately adjacent to the project area.
5. The design of the buildings and related shall, to the extent reasonable possible, use materials, colors, textures, screening and landscaping that will blend the facility into the natural setting and existing environment.
6. Appropriate landscaping shall be provided to screen accessory structures from roads and adjacent residences.

7. Use existing road to provide access to the facility site, or if new roads are needed, minimize the amount of land used for new roads and locate them so as to minimize adverse environmental impacts.
8. Combine transmission lines and points of connection to local distribution lines.
9. Connect the facility to existing substations, or if new substations are needed, minimize the number of new substations.
10. Any applicant must show that all of the following safety conditions are met:
    a. The minimum distance between the ground and any part of the rotor blade system shall be 100 feet.
    b. Wind turbine towers shall not be climbable up to 15 feet above ground level.
    c. All access doors to the wind turbine towers and electrical equipment shall be lockable.
    d. Appropriate warning signage shall be placed on wind turbine towers, electrical equipment and wind energy facility entrances.
    e. All wind turbines shall have an automatic braking, governing or feathering system to prevent uncontrolled rotation, overspeeding and excessive pressure on the tower structure, rotor blades and turbine components.
    f. The minimum lighting necessary for safety and security purposes and use other techniques to prevent casting glare from the site, except as otherwise required by the FAA or other applicable authority.
11. Applicant shall provide the city/county proof of a level of insurance to be determined by the planning commission in consultation with the city/county's insurer, to cover damage or injury that might result from the failure of a tower or towers or any other part or parts of the generation and transmission facility.
12. The minimum setback distance between each wind turbine tower and all surrounding property lines, overhead utility or transmission lines, other wind turbine towers, and public roads shall be equal to no less than 1.5 times the sum of the proposed structure height plus the rotor radius.
13. Each wind turbine shall be set back from the nearest residence, school, hospital, church or public library a distance no less than the greater of (a) two (2) times its total height or (b) 1,000 feet.
14. Audible noise due to wind energy facility operations shall not exceed 50 dBA for any period of time, when measured at any residence, school, hospital, church, public library, or nature preserve existing on the date of approval of the wind energy facility.
15. The applicant shall minimize or mitigate any interference with electromagnetic communications, such as radio, telephone or television signals caused by any wind energy facility.

*ARTICLE 8 DECOMMISSIONING AND RECLAMATION PLAN*

1. Applicant shall submit a Decommissioning Plan describing the manner in which the wind energy facility will be dismantled and removed from the site at the end of its useful life. All aboveground components of the commercial wind energy project shall be removed. Foundations shall be removed to four feet below ground level. Remainder of foundation may be left intact. Access roads shall be removed to the owner's satisfaction.
2. Applicant shall submit documentation showing financial capability to carry out the decommissioning and restoration requirements. Applicant shall submit an escrow account/surety bond/insurance policy in an amount approved by the planning commission as reasonably necessary to restore the site to its pre-wind energy facility topography and topsoil quality. The purpose of this

account/bond/policy is to assure removal of all improvements subject to the Conditional Use Permit at the end of the project's life or in the event of abandonment of the wind energy facility.

3. At the end of the wind energy facility's useful life, or if the wind energy facility is abandoned, the site shall be restored in accordance with the requirements of this condition within 18 months.

*ARTICLE 9 ABANDONMENT*

In the event that any wind energy facility does not produce any electric energy and there is no demonstrated plan to restore the equipment to operating condition for a one-year period, the wind energy facility will be considered abandoned. Upon termination of the aforesaid one-year period, the site shall be restored in accordance with the requirements of the Decommission and Reclamation Plan within 18 months.

*ARTICLE 10 REPEALER*

All ordinances or parts of ordinances in conflict with the provisions of this ordinance are hereby repealed.

*ARTICLE 11 SEVERABILITY*

If any section or provision of this ordinance is held invalid by a court of competent jurisdiction, such holding shall not affect the validity of any other provision of this ordinance which can be given effect without the invalid portion and to this end, each section and provision of this ordinance is severable.

*ARTICLE 12 PENALTIES*

Any person, as defined in Iowa Code § 4.1 (20), found to be in violation of any of the provisions of this ordinance shall be subject to a civil penalty of $150 for each day of violation, or $300 for each of violation of the infraction is a repeat offense, pursuant to Iowa Code § 331.302(15).

*ARTICLE 13 WHEN EFFECTIVE*

This ordinance shall be effective after its final passage, approval, and publication as provided by law. Passed and approved this __ day of _____.

Chairperson: _____

ATTEST: _____, City Clerk/County Auditor

# LOESS HILLS SCENIC BYWAY CORRIDOR

## PROPERTY TAX EXEMPTION PROGRAMS

Protecting the resources of the Loess Hills Scenic Byway Corridor is a tremendous challenge. This is particularly true since much of the land is in private ownership.
In addition to land use regulations, local governments have access to non-regulatory programs established by Iowa law that encourage the protection of unique resources on private land through tax incentives. These programs are in the form of property tax exemptions. The qualification criteria are described in the Iowa Code. Information and application forms can be obtained from the office of the Iowa Department of Revenue or the county assessor.

**Property Tax Exemption Programs**
There are two relevant property tax exemption programs in Iowa.

**1. Forest and Fruit Tree Reservations**

*Description*
Establishing and maintaining forest and fruit-tree reservations which may qualify property to be tax exempt is set out in Iowa Code Chapter 161 and the Natural Resource Commission Chapter 73. This program encourages taxpayers to grow forest or fruit trees on tracts of land. A forester with the Department of Natural Resources can assist property owners in choosing types of trees and provide planting instructions to meet qualifications of program.

*Implementation*
Applications for Forest or Fruit Tree Reservations are available from the Iowa Department of Revenue. As in the past, applications for the reduced tax rate on fruit tree reservations are required to be filed with the assessor by April 15 of each year.
The board of supervisors or state forester with the Department of Natural Resources is required to grant a tax exemption on forest reservations providing all eligibility criteria contained in Chapter 161 of the Iowa Code has been satisfied, including the filing of an application with the assessor by Apri/15 of each year. If qualified, the property receives a total tax exemption. No exemption is allowable on forest reservations located within city limits unless they are open to the public.
Also, forest reservations are not subject to or included in the acreage limitation for wetlands, etc.

**2. Native Prairie or Wetland Property Tax Exemption**

*Description*
Before lands will be certified as either "native prairie" or wildlife habitat" under Iowa Code Section 427.1 (Subsection 23), they must meet the criteria of the Natural Resource Commission Rules in Chapter 25. The purpose of this rule is to define lands which qualify for tax exemptions as "native prairie" or wildlife habitat," and to provide procedures whereby owners may have them certified as such.

*Implementation*
Applications for the native prairie or wetland property tax exemption are to be filed with the assessor by February 1 of each year on forms provided by the Department of Revenue. However, the county conservation board and the Department of Natural Resources are required to certify the eligibility of property for this exemption.

**Additional Voluntary Programs**
In addition to these programs set out by the State of Iowa, there are a number of other voluntary means by which private land owners can protect unique resources on their property. The Iowa Natural Heritage Foundation has developed a guide to voluntary protection of such resources on private land in Iowa entitled The Landowner's Options. The booklet describes 18 ways to permanently protect Iowa's special wild places. It discusses any tax advantages and offers technical assistance in exploring these options. This booklet is available from the Iowa Natural Heritage Foundation, 444 Insurance Exchange Building 505 Fifth Avenue, Des Moines, IA 50309. Their telephone number is (515) 288-1846.

# REFERENCES FOR LAND USE MODEL TOOLS

Arendt, Randall. *Rural by Design: Maintaining Small Town Character*. American Planning Association. 1994.

Huntington, Stuart. *Subdivision Review Manual-Iowa Land Use Planning Notebook*. Iowa State University, University Extension. 1995. Ames, Iowa.

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# UPDATE REFERENCES


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*Fremont County Comprehensive Plan.* The Schemmer Associates. 2006.

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Scenic America. *Scenic America Model Telecommunications Tower Ordinance*,.

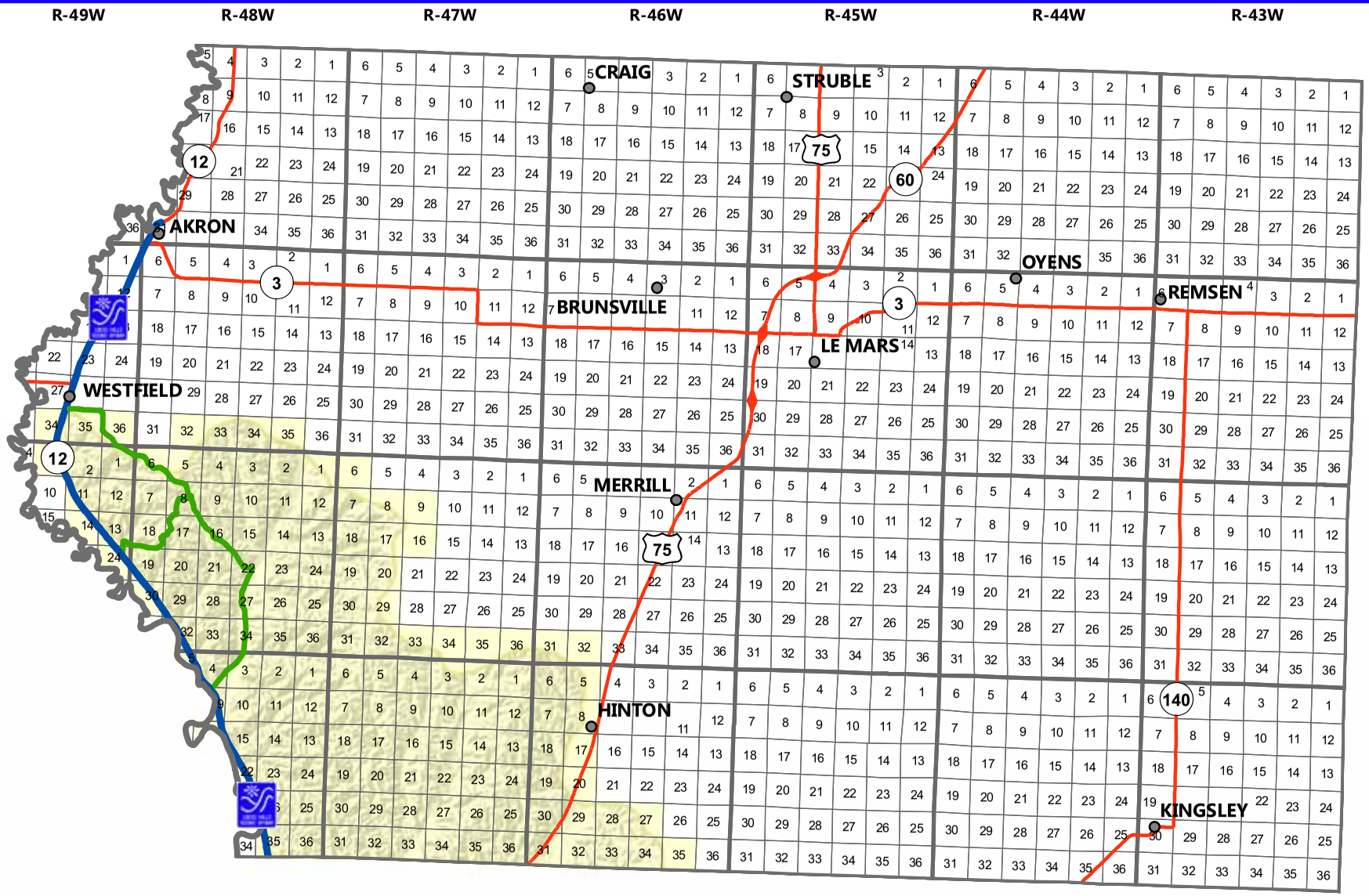
University of Wisconsin Extension. *Model Ordinance for a Conservation Subdivision.* 2000.

# Landform Definition

## Plymouth County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department




Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Loess Hills Landform Region
Loess Hills Landform (boundary definition)
Township Line
Section Line

0 1.25 2.5 5 7.5 Miles

N W E S

# Loess Hills Scenic Byway Landform Definition

## Plymouth County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

| Township | Range | Section |
|---|---|---|
| T90N | R47W | 24 |
| T90N | R47W | 34 |
| T90N | R47W | 35 |
| T90N | R47W | 36 |
| T90N | R47W | 30 |
| T90N | R47W | 20 |
| T90N | R47W | 28 |
| T90N | R47W | 33 |
| T90N | R47W | 21 |
| T90N | R47W | 16 |
| T90N | R47W | 6 |
| T90N | R47W | 7 |
| T90N | R47W | 26 |
| T90N | R47W | 27 |
| T90N | R47W | 25 |
| T90N | R47W | 23 |
| T90N | R46W | 29 |
| T90N | R46W | 31 |
| T90N | R46W | 32 |
| T90N | R46W | 19 |
| T90N | R48W | 4 |
| T90N | R48W | 10 |
| T90N | R48W | 11 |
| T90N | R48W | 12 |
| T90N | R48W | 3 |
| T90N | R48W | 2 |
| T90N | R47W | 18 |
| T90N | R47W | 17 |
| T90N | R47W | 29 |
| T90N | R47W | 31 |
| T90N | R47W | 32 |
| T90N | R47W | 19 |
| T90N | R46W | 30 |
| T90N | R46W | 20 |
| T90N | R47W | 2 |
| T90N | R47W | 15 |
| T90N | R47W | 14 |
| T90N | R47W | 10 |
| T90N | R47W | 11 |
| T90N | R47W | 13 |
| T90N | R46W | 18 |
| T90N | R46W | 17 |
| T90N | R47W | 1 |
| T90N | R47W | 12 |
| T90N | R46W | 7 |
| T90N | R46W | 6 |
| T90N | R46W | 33 |
| T90N | R46W | 34 |
| T90N | R47W | 4 |
| T90N | R47W | 8 |

# Loess Hills Scenic Byway Landform Definition

## Plymouth County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

| Township | Range | Section |
|---|---|---|
| T90N | R47W | 9 |
| T90N | R47W | 5 |
| T90N | R47W | 3 |
| T90N | R46W | 8 |
| T90N | R47W | 22 |
| T90N | R48W | 35 |
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| T90N | R48W | 22 |
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| T90N | R48W | 25 |
| T90N | R48W | 36 |
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| T90N | R48W | 15 |
| T90N | R48W | 14 |
| T90N | R48W | 26 |
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| T90N | R46W | 35 |
| T90N | R48W | 16 |
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| T91N | R48W | 6 |
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| T91N | R48W | 25 |
| T91N | R48W | 22 |
| T91N | R48W | 24 |
| T91N | R48W | 23 |
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| T91N | R47W | 17 |
| T91N | R48W | 2 |
| T91N | R48W | 11 |
| T91N | R48W | 16 |
| T91N | R47W | 31 |
| T91N | R48W | 36 |

# Loess Hills Scenic Byway Landform Definition

## Plymouth County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

| Township | Range | Section |
|---|---|---|
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| T91N | R49W | 3 |
| T91N | R48W | 32 |
| T91N | R47W | 16 |
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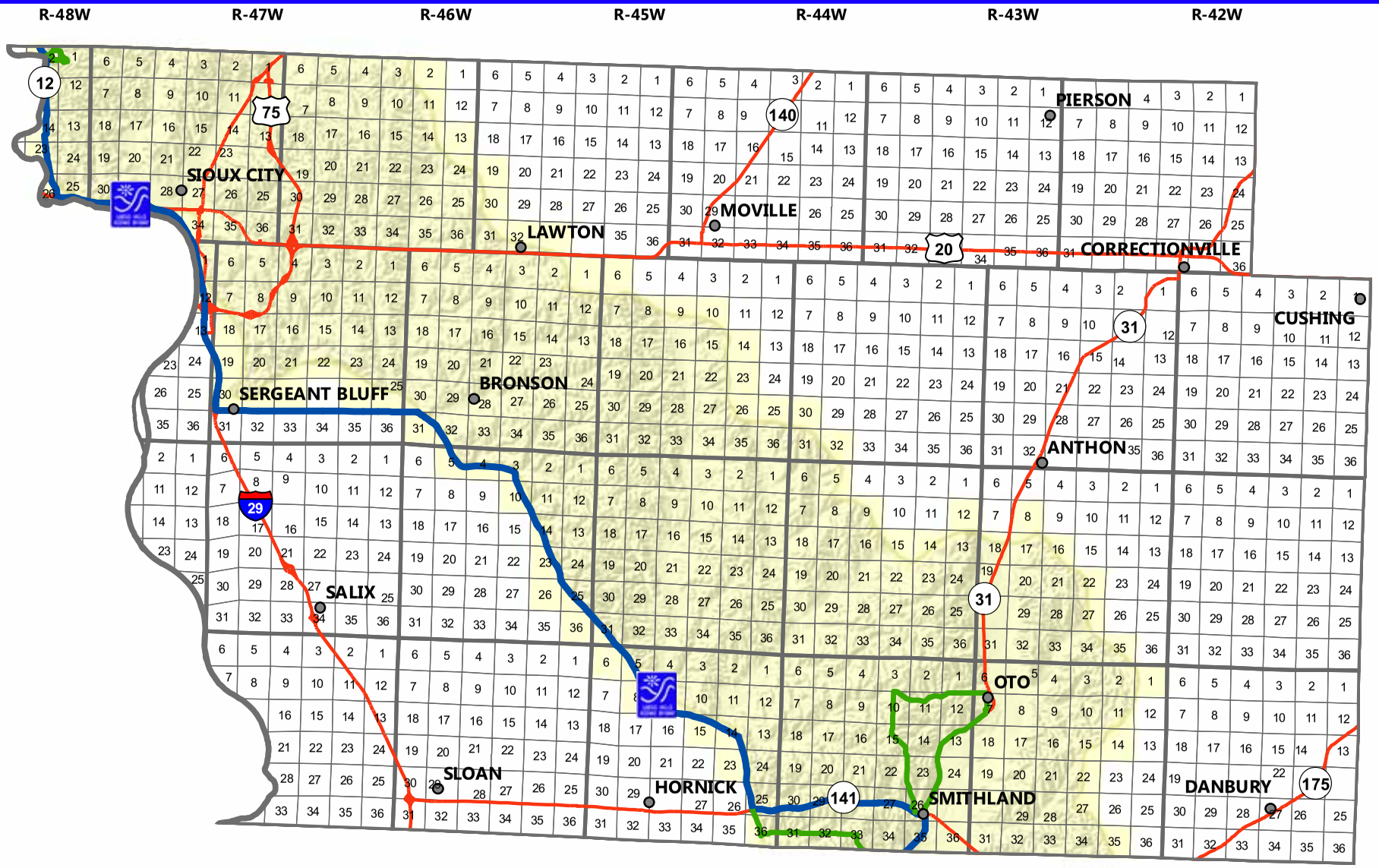
| T92N | R49W | 34 |
| T92N | R49W | 35 |
| T92N | R49W | 36 |

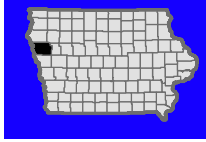
# Landform Definition

## Woodbury County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Loess Hills Landform Region
Loess Hills Landform (boundary definition)
Township Line
Section Line

0 1.25 2.5 5 7.5 Miles

N W E S

# Loess Hills Scenic Byway Landform Definition

## Woodbury County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

| Township | Range | Section |
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| T86N | R43W | 5 |
| T86N | R43W | 16 |
| T86N | R45W | 1 |
| T86N | R44W | 3 |
| T86N | R45W | 24 |
| T86N | R44W | 20 |
| T86N | R45W | 36 |
| T86N | R44W | 31 |
| T86N | R44W | 32 |
| T86N | R44W | 30 |

# Loess Hills Scenic Byway Landform Definition

## Woodbury County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

| Township | Range | Section |
|---|---|---|
| T86N | R45W | 25 |
| T86N | R44W | 29 |
| T86N | R44W | 19 |
| T86N | R44W | 27 |
| T86N | R44W | 33 |
| T86N | R44W | 34 |
| T86N | R44W | 21 |
| T86N | R44W | 28 |
| T86N | R44W | 22 |
| T86N | R44W | 8 |
| T86N | R45W | 13 |
| T86N | R44W | 18 |
| T86N | R44W | 17 |
| T86N | R45W | 12 |
| T86N | R44W | 7 |
| T86N | R44W | 6 |
| T86N | R44W | 10 |
| T86N | R44W | 16 |
| T86N | R44W | 15 |
| T86N | R44W | 5 |
| T86N | R44W | 9 |
| T86N | R44W | 4 |
| T86N | R44W | 23 |
| T86N | R43W | 19 |
| T86N | R43W | 27 |
| T86N | R43W | 2 |
| T86N | R43W | 15 |
| T86N | R43W | 14 |
| T86N | R43W | 9 |
| T86N | R43W | 10 |
| T86N | R43W | 11 |
| T86N | R43W | 3 |
| T86N | R43W | 1 |
| T87N | R46W | 25 |
| T87N | R46W | 36 |
| T87N | R46W | 23 |
| T87N | R46W | 26 |
| T87N | R46W | 24 |
| T87N | R46W | 13 |
| T87N | R46W | 5 |
| T87N | R46W | 10 |
| T87N | R46W | 4 |
| T87N | R46W | 3 |
| T87N | R46W | 11 |
| T87N | R46W | 14 |
| T87N | R46W | 12 |
| T87N | R46W | 2 |
| T87N | R46W | 1 |
| T87N | R45W | 16 |
| T87N | R45W | 20 |

# Loess Hills Scenic Byway Landform Definition

## Woodbury County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

| Township | Range | Section |
|---|---|---|
| T87N | R45W | 31 |
| T87N | R45W | 32 |
| T87N | R45W | 19 |
| T87N | R45W | 30 |
| T87N | R45W | 29 |
| T87N | R45W | 28 |
| T87N | R45W | 33 |
| T87N | R45W | 34 |
| T87N | R45W | 27 |
| T87N | R45W | 21 |
| T87N | R45W | 22 |
| T87N | R45W | 15 |
| T87N | R45W | 7 |
| T87N | R45W | 18 |
| T87N | R45W | 17 |
| T87N | R45W | 8 |
| T87N | R45W | 6 |
| T87N | R45W | 5 |
| T87N | R45W | 3 |
| T87N | R45W | 9 |
| T87N | R45W | 10 |
| T87N | R45W | 4 |
| T87N | R44W | 32 |
| T87N | R44W | 33 |
| T87N | R44W | 29 |
| T87N | R44W | 28 |
| T87N | R45W | 12 |
| T87N | R45W | 23 |
| T87N | R45W | 24 |
| T87N | R45W | 11 |
| T87N | R45W | 14 |
| T87N | R45W | 13 |
| T87N | R44W | 19 |
| T87N | R44W | 20 |
| T87N | R44W | 21 |
| T87N | R44W | 7 |
| T87N | R44W | 18 |
| T87N | R44W | 17 |
| T87N | R44W | 16 |
| T87N | R44W | 8 |
| T87N | R44W | 22 |
| T87N | R44W | 24 |
| T87N | R44W | 34 |
| T87N | R44W | 35 |
| T87N | R44W | 36 |
| T87N | R44W | 26 |
| T87N | R44W | 27 |
| T87N | R44W | 25 |
| T87N | R44W | 23 |
| T87N | R43W | 29 |

# Loess Hills Scenic Byway Landform Definition

## Woodbury County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

| Township | Range | Section |
|---|---|---|
| T87N | R43W | 31 |
| T87N | R43W | 32 |
| T87N | R43W | 19 |
| T87N | R43W | 30 |
| T87N | R43W | 20 |
| T87N | R44W | 15 |
| T87N | R44W | 14 |
| T87N | R44W | 13 |
| T87N | R44W | 12 |
| T87N | R43W | 8 |
| T87N | R43W | 18 |
| T87N | R43W | 17 |
| T87N | R44W | 9 |
| T87N | R45W | 26 |
| T87N | R44W | 30 |
| T87N | R45W | 35 |
| T87N | R45W | 36 |
| T87N | R44W | 31 |
| T87N | R45W | 25 |
| T87N | R43W | 33 |
| T87N | R43W | 34 |
| T87N | R43W | 35 |
| T87N | R43W | 27 |
| T87N | R43W | 28 |
| T87N | R43W | 22 |
| T87N | R43W | 16 |
| T87N | R45W | 2 |
| T87N | R45W | 1 |
| T87N | R44W | 6 |
| T87N | R44W | 5 |
| T87N | R43W | 21 |
| T88N | R46W | 36 |
| T88N | R46W | 32 |
| T88N | R46W | 31 |
| T88N | R47W | 20 |
| T88N | R47W | 30 |
| T88N | R47W | 29 |
| T88N | R47W | 18 |
| T88N | R47W | 19 |
| T88N | R47W | 17 |
| T88N | R48W | 12 |
| T88N | R48W | 1 |
| T88N | R47W | 7 |
| T88N | R47W | 8 |
| T88N | R47W | 6 |
| T88N | R47W | 5 |
| T88N | R47W | 16 |
| T88N | R47W | 15 |
| T88N | R47W | 28 |
| T88N | R47W | 21 |

# Loess Hills Scenic Byway Landform Definition

## Woodbury County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

| Township | Range | Section |
|---|---|---|
| T88N | R47W | 22 |
| T88N | R47W | 24 |
| T88N | R47W | 26 |
| T88N | R47W | 25 |
| T88N | R47W | 14 |
| T88N | R47W | 23 |
| T88N | R47W | 13 |
| T88N | R47W | 10 |
| T88N | R46W | 23 |
| T88N | R46W | 22 |
| T88N | R46W | 5 |
| T88N | R46W | 18 |
| T88N | R46W | 17 |
| T88N | R46W | 6 |
| T88N | R46W | 7 |
| T88N | R46W | 8 |
| T88N | R46W | 10 |
| T88N | R46W | 15 |
| T88N | R46W | 16 |
| T88N | R46W | 11 |
| T88N | R46W | 4 |
| T88N | R46W | 9 |
| T88N | R46W | 3 |
| T88N | R46W | 13 |
| T88N | R45W | 17 |
| T88N | R46W | 25 |
| T88N | R45W | 30 |
| T88N | R45W | 29 |
| T88N | R46W | 24 |
| T88N | R45W | 19 |
| T88N | R45W | 20 |
| T88N | R45W | 18 |
| T88N | R45W | 22 |
| T88N | R45W | 28 |
| T88N | R45W | 27 |
| T88N | R45W | 16 |
| T88N | R45W | 21 |
| T88N | R45W | 15 |
| T88N | R46W | 12 |
| T88N | R45W | 7 |
| T88N | R45W | 8 |
| T88N | R46W | 1 |
| T88N | R45W | 6 |
| T88N | R45W | 9 |
| T88N | R45W | 10 |
| T88N | R46W | 34 |
| T88N | R46W | 33 |
| T88N | R46W | 35 |
| T88N | R45W | 32 |
| T88N | R45W | 31 |

# Loess Hills Scenic Byway Landform Definition

## Woodbury County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

| Township | Range | Section |
|---|---|---|
| T88N | R45W | 33 |
| T88N | R45W | 34 |
| T88N | R47W | 9 |
| T88N | R47W | 4 |
| T88N | R47W | 3 |
| T88N | R47W | 1 |
| T88N | R47W | 11 |
| T88N | R47W | 12 |
| T88N | R47W | 2 |
| T88N | R46W | 2 |
| T88N | R46W | 14 |
| T88N | R46W | 28 |
| T88N | R46W | 30 |
| T88N | R46W | 29 |
| T88N | R46W | 19 |
| T88N | R46W | 20 |
| T88N | R46W | 27 |
| T88N | R46W | 26 |
| T88N | R46W | 21 |
| T88N | R45W | 26 |
| T88N | R45W | 25 |
| T88N | R45W | 35 |
| T88N | R45W | 36 |
| T88N | R44W | 32 |
| T88N | R44W | 30 |
| T88N | R44W | 31 |
| T88N | R45W | 23 |
| T88N | R45W | 14 |
| T89N | R47W | 34 |
| T89N | R47W | 35 |
| T89N | R46W | 32 |
| T89N | R46W | 26 |
| T89N | R45W | 30 |
| T89N | R46W | 24 |
| T89N | R47W | 19 |
| T89N | R47W | 29 |
| T89N | R47W | 28 |
| T89N | R47W | 27 |
| T89N | R47W | 21 |
| T89N | R47W | 20 |
| T89N | R47W | 22 |
| T89N | R47W | 6 |
| T89N | R48W | 14 |
| T89N | R48W | 13 |
| T89N | R47W | 18 |
| T89N | R48W | 11 |
| T89N | R48W | 2 |
| T89N | R48W | 12 |
| T89N | R46W | 23 |
| T89N | R45W | 19 |

# Loess Hills Scenic Byway Landform Definition

## Woodbury County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

| Township | Range | Section |
|---|---|---|
| T89N | R46W | 35 |
| T89N | R46W | 36 |
| T89N | R45W | 31 |
| T89N | R46W | 25 |
| T89N | R46W | 3 |
| T89N | R47W | 33 |
| T89N | R47W | 36 |
| T89N | R47W | 7 |
| T89N | R48W | 1 |
| T89N | R47W | 17 |
| T89N | R47W | 16 |
| T89N | R47W | 15 |
| T89N | R47W | 5 |
| T89N | R47W | 8 |
| T89N | R47W | 9 |
| T89N | R47W | 10 |
| T89N | R47W | 4 |
| T89N | R46W | 16 |
| T89N | R46W | 19 |
| T89N | R47W | 26 |
| T89N | R47W | 25 |
| T89N | R46W | 30 |
| T89N | R47W | 23 |
| T89N | R47W | 24 |
| T89N | R46W | 29 |
| T89N | R46W | 28 |
| T89N | R46W | 27 |
| T89N | R46W | 21 |
| T89N | R46W | 20 |
| T89N | R46W | 22 |
| T89N | R45W | 32 |
| T89N | R45W | 33 |
| T89N | R46W | 14 |
| T89N | R46W | 13 |
| T89N | R46W | 2 |
| T89N | R46W | 11 |
| T89N | R46W | 31 |
| T89N | R46W | 33 |
| T89N | R46W | 34 |
| T89N | R47W | 3 |
| T89N | R48W | 26 |
| T89N | R48W | 25 |
| T89N | R47W | 30 |
| T89N | R48W | 24 |
| T89N | R48W | 23 |
| T89N | R46W | 15 |
| T89N | R46W | 6 |
| T89N | R47W | 14 |
| T89N | R47W | 13 |
| T89N | R46W | 18 |

# Loess Hills Scenic Byway Landform Definition

## Woodbury County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

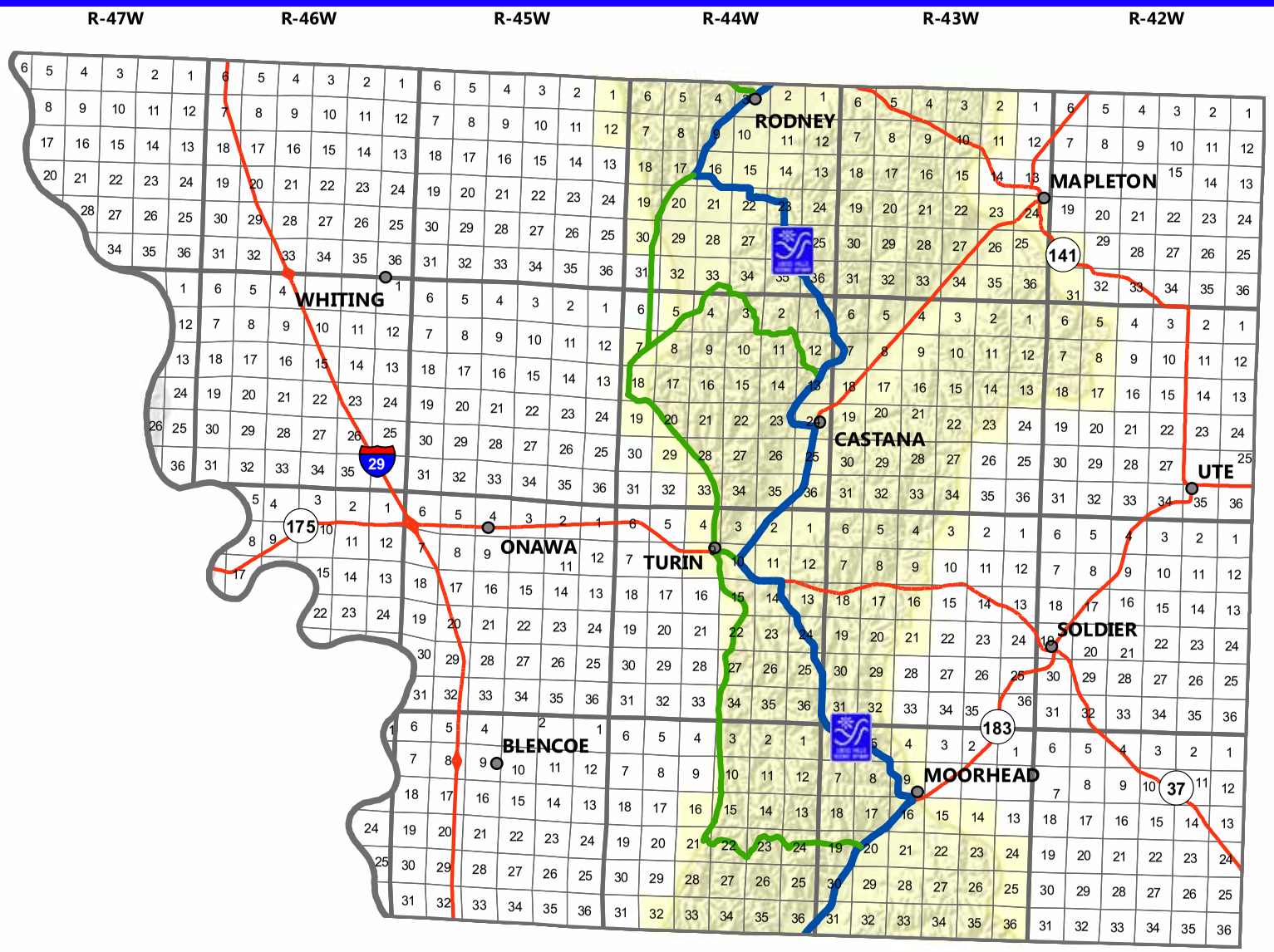
| Township | Range | Section |
|---|---|---|
| T89N | R47W | 2 |
| T89N | R47W | 11 |
| T89N | R47W | 12 |
| T89N | R46W | 7 |
| T89N | R47W | 1 |
| T89N | R46W | 8 |
| T89N | R46W | 17 |
| T89N | R46W | 10 |
| T89N | R46W | 9 |
| T89N | R46W | 5 |
| T89N | R46W | 4 |

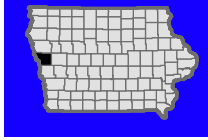
# Landform Definition

## Monona County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Loess Hills Landform Region
Loess Hills Landform (boundary definition)
Township Line
Section Line

0 1.25 2.5 5 7.5 Miles

N W E S

# Loess Hills Scenic Byway Landform Definition

## Monona County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

| Township | Range | Section |
|---|---|---|
| T82N | R44W | 3 |
| T82N | R43W | 6 |
| T82N | R44W | 22 |
| T82N | R44W | 23 |
| T82N | R44W | 34 |
| T82N | R44W | 35 |
| T82N | R44W | 27 |
| T82N | R44W | 26 |
| T82N | R43W | 30 |
| T82N | R44W | 32 |
| T82N | R44W | 28 |
| T82N | R44W | 33 |
| T82N | R44W | 21 |
| T82N | R44W | 16 |
| T82N | R43W | 24 |
| T82N | R43W | 36 |
| T82N | R44W | 36 |
| T82N | R43W | 31 |
| T82N | R44W | 24 |
| T82N | R44W | 25 |
| T82N | R43W | 19 |
| T82N | R43W | 25 |
| T82N | R44W | 2 |
| T82N | R44W | 15 |
| T82N | R44W | 14 |
| T82N | R44W | 10 |
| T82N | R44W | 11 |
| T82N | R44W | 13 |
| T82N | R43W | 18 |
| T82N | R44W | 1 |
| T82N | R44W | 12 |
| T82N | R43W | 7 |
| T82N | R43W | 20 |
| T82N | R43W | 21 |
| T82N | R43W | 32 |
| T82N | R43W | 33 |
| T82N | R43W | 29 |
| T82N | R43W | 28 |
| T82N | R43W | 26 |
| T82N | R43W | 34 |
| T82N | R43W | 35 |
| T82N | R43W | 22 |
| T82N | R43W | 27 |
| T82N | R43W | 23 |
| T82N | R43W | 4 |
| T82N | R43W | 17 |
| T82N | R43W | 16 |
| T82N | R43W | 5 |
| T82N | R43W | 8 |
| T82N | R43W | 9 |

# Loess Hills Scenic Byway Landform Definition

## Monona County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

| Township | Range | Section |
|---|---|---|
| T82N | R43W | 15 |
| T82N | R43W | 14 |
| T83N | R44W | 9 |
| T83N | R44W | 4 |
| T83N | R44W | 3 |
| T83N | R43W | 20 |
| T83N | R43W | 21 |
| T83N | R43W | 32 |
| T83N | R43W | 29 |
| T83N | R43W | 5 |
| T83N | R43W | 8 |
| T83N | R43W | 17 |
| T83N | R43W | 6 |
| T83N | R43W | 9 |
| T83N | R43W | 16 |
| T83N | R43W | 4 |
| T83N | R43W | 3 |
| T83N | R44W | 34 |
| T83N | R44W | 35 |
| T83N | R44W | 27 |
| T83N | R44W | 26 |
| T83N | R43W | 30 |
| T83N | R44W | 36 |
| T83N | R43W | 31 |
| T83N | R44W | 24 |
| T83N | R44W | 25 |
| T83N | R43W | 19 |
| T83N | R44W | 2 |
| T83N | R44W | 15 |
| T83N | R44W | 14 |
| T83N | R44W | 10 |
| T83N | R44W | 11 |
| T83N | R44W | 13 |
| T83N | R43W | 18 |
| T83N | R44W | 12 |
| T83N | R44W | 1 |
| T83N | R43W | 7 |
| T83N | R44W | 22 |
| T83N | R44W | 23 |
| T84N | R44W | 29 |
| T84N | R44W | 33 |
| T84N | R44W | 28 |
| T84N | R44W | 3 |
| T84N | R43W | 18 |
| T84N | R44W | 22 |
| T84N | R44W | 23 |
| T84N | R44W | 34 |
| T84N | R44W | 35 |
| T84N | R44W | 27 |
| T84N | R44W | 26 |

# Loess Hills Scenic Byway Landform Definition

## Monona County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

| Township | Range | Section |
|---|---|---|
| T84N | R43W | 30 |
| T84N | R44W | 36 |
| T84N | R43W | 31 |
| T84N | R44W | 24 |
| T84N | R44W | 25 |
| T84N | R43W | 19 |
| T84N | R44W | 2 |
| T84N | R44W | 15 |
| T84N | R44W | 14 |
| T84N | R44W | 10 |
| T84N | R44W | 11 |
| T84N | R44W | 12 |
| T84N | R44W | 13 |
| T84N | R44W | 4 |
| T84N | R44W | 19 |
| T84N | R44W | 20 |
| T84N | R44W | 21 |
| T84N | R44W | 17 |
| T84N | R44W | 16 |
| T84N | R44W | 7 |
| T84N | R44W | 8 |
| T84N | R44W | 9 |
| T84N | R44W | 1 |
| T84N | R43W | 20 |
| T84N | R43W | 21 |
| T84N | R43W | 32 |
| T84N | R43W | 33 |
| T84N | R43W | 29 |
| T84N | R43W | 28 |
| T84N | R43W | 27 |
| T84N | R43W | 34 |
| T84N | R43W | 22 |
| T84N | R43W | 5 |
| T84N | R43W | 8 |
| T84N | R43W | 17 |
| T84N | R43W | 7 |
| T84N | R43W | 6 |
| T84N | R43W | 10 |
| T84N | R43W | 16 |
| T84N | R43W | 15 |
| T84N | R43W | 4 |
| T84N | R43W | 9 |
| T84N | R43W | 3 |
| T84N | R44W | 5 |
| T84N | R44W | 18 |
| T84N | R43W | 2 |
| T84N | R42W | 5 |
| T84N | R43W | 23 |
| T84N | R43W | 1 |
| T84N | R43W | 14 |

# Loess Hills Scenic Byway Landform Definition

## Monona County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

| Township | Range | Section |
|---|---|---|
| T84N | R43W | 13 |
| T84N | R43W | 11 |
| T84N | R43W | 12 |
| T84N | R42W | 18 |
| T84N | R42W | 17 |
| T84N | R42W | 6 |
| T84N | R42W | 7 |
| T84N | R42W | 8 |
| T85N | R43W | 3 |
| T85N | R44W | 27 |
| T85N | R44W | 1 |
| T85N | R44W | 21 |
| T85N | R44W | 22 |
| T85N | R44W | 33 |
| T85N | R44W | 32 |
| T85N | R44W | 34 |
| T85N | R44W | 28 |
| T85N | R44W | 20 |
| T85N | R44W | 30 |
| T85N | R44W | 29 |
| T85N | R44W | 18 |
| T85N | R44W | 19 |
| T85N | R44W | 17 |
| T85N | R45W | 12 |
| T85N | R44W | 7 |
| T85N | R44W | 8 |
| T85N | R44W | 6 |
| T85N | R45W | 1 |
| T85N | R44W | 5 |
| T85N | R44W | 25 |
| T85N | R44W | 35 |
| T85N | R44W | 36 |
| T85N | R44W | 23 |
| T85N | R44W | 26 |
| T85N | R44W | 24 |
| T85N | R44W | 3 |
| T85N | R44W | 16 |
| T85N | R44W | 15 |
| T85N | R44W | 4 |
| T85N | R44W | 9 |
| T85N | R44W | 10 |
| T85N | R44W | 14 |
| T85N | R44W | 13 |
| T85N | R44W | 2 |
| T85N | R44W | 11 |
| T85N | R44W | 12 |
| T85N | R43W | 19 |
| T85N | R43W | 20 |
| T85N | R43W | 31 |
| T85N | R43W | 32 |

# Loess Hills Scenic Byway Landform Definition

## Monona County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

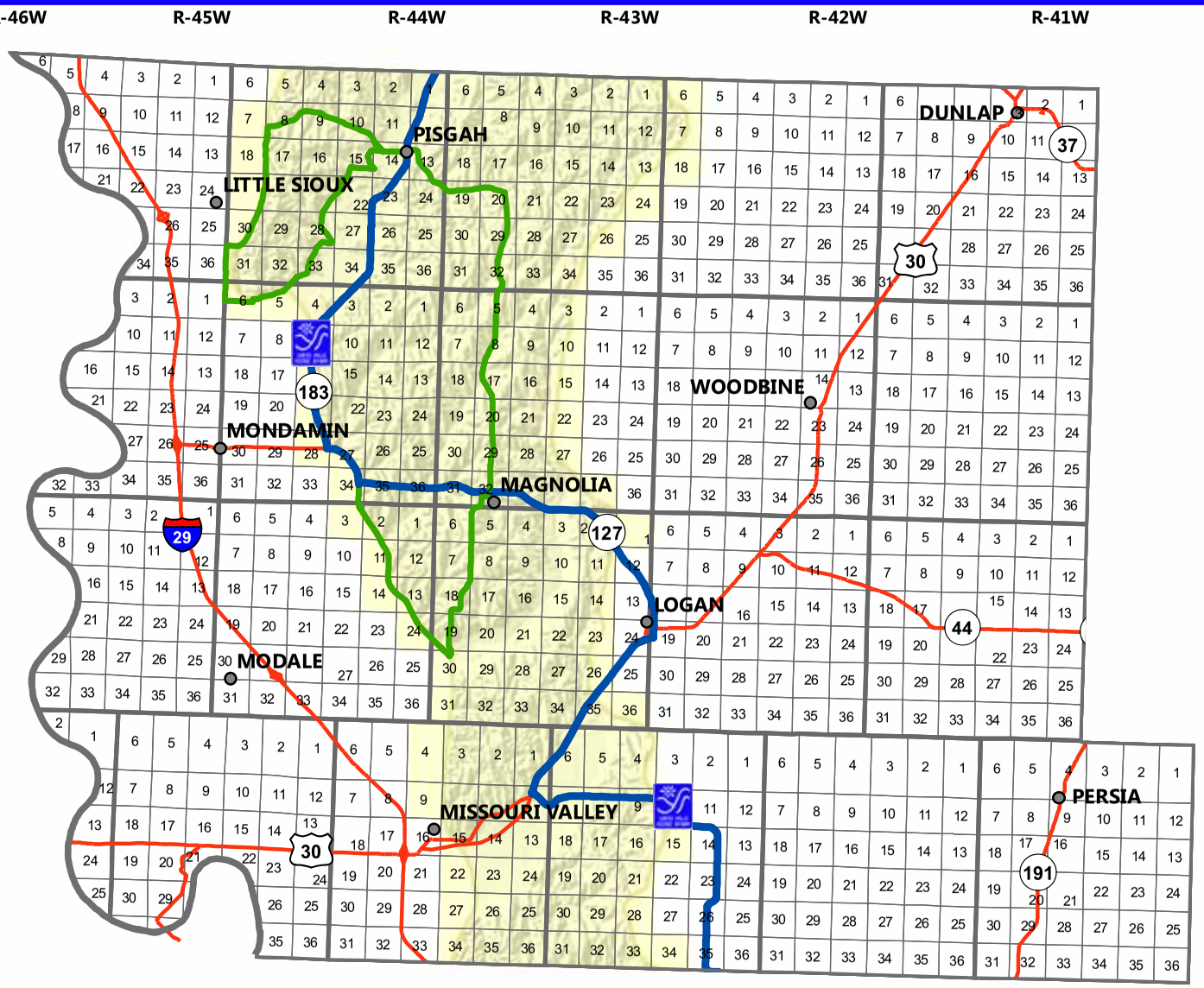
| Township | Range | Section |
|---|---|---|
| T85N | R43W | 30 |
| T85N | R43W | 29 |
| T85N | R43W | 27 |
| T85N | R43W | 33 |
| T85N | R43W | 34 |
| T85N | R43W | 21 |
| T85N | R43W | 28 |
| T85N | R43W | 22 |
| T85N | R43W | 5 |
| T85N | R43W | 18 |
| T85N | R43W | 17 |
| T85N | R43W | 6 |
| T85N | R43W | 7 |
| T85N | R43W | 8 |
| T85N | R43W | 16 |
| T85N | R43W | 15 |
| T85N | R43W | 4 |
| T85N | R43W | 9 |
| T85N | R43W | 10 |
| T85N | R43W | 23 |
| T85N | R43W | 24 |
| T85N | R43W | 35 |
| T85N | R43W | 36 |
| T85N | R43W | 26 |
| T85N | R43W | 25 |
| T85N | R42W | 31 |
| T85N | R42W | 30 |
| T85N | R43W | 2 |
| T85N | R43W | 11 |

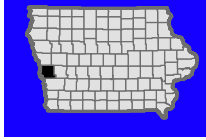
# Landform Definition

## Harrison County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Loess Hills Landform Region
Loess Hills Landform (boundary definition)
Township Line
Section Line

0 1.25 2.5 5 7.5 Miles

N W E S

# Loess Hills Scenic Byway Landform Definition

## Harrison County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

| Township | Range | Section |
|---|---|---|
| T78N | R43W | 5 |
| T78N | R43W | 20 |
| T78N | R43W | 21 |
| T78N | R43W | 32 |
| T78N | R43W | 33 |
| T78N | R43W | 29 |
| T78N | R43W | 28 |
| T78N | R43W | 34 |
| T78N | R43W | 4 |
| T78N | R43W | 17 |
| T78N | R43W | 16 |
| T78N | R43W | 8 |
| T78N | R43W | 9 |
| T78N | R43W | 15 |
| T78N | R43W | 10 |
| T78N | R44W | 22 |
| T78N | R43W | 19 |
| T78N | R44W | 2 |
| T78N | R44W | 15 |
| T78N | R44W | 14 |
| T78N | R44W | 3 |
| T78N | R44W | 10 |
| T78N | R44W | 11 |
| T78N | R43W | 7 |
| T78N | R44W | 13 |
| T78N | R43W | 18 |
| T78N | R44W | 1 |
| T78N | R44W | 12 |
| T78N | R43W | 6 |
| T78N | R44W | 34 |
| T78N | R44W | 27 |
| T78N | R44W | 9 |
| T78N | R44W | 4 |
| T78N | R44W | 23 |
| T78N | R44W | 24 |
| T78N | R44W | 35 |
| T78N | R44W | 36 |
| T78N | R44W | 26 |
| T78N | R44W | 25 |
| T78N | R43W | 30 |
| T78N | R43W | 31 |
| T79N | R43W | 30 |
| T79N | R43W | 31 |
| T79N | R44W | 24 |
| T79N | R43W | 19 |
| T79N | R44W | 14 |
| T79N | R44W | 3 |
| T79N | R44W | 11 |
| T79N | R44W | 13 |
| T79N | R44W | 12 |

# Loess Hills Scenic Byway Landform Definition

## Harrison County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

| Township | Range | Section |
|---|---|---|
| T79N | R44W | 2 |
| T79N | R44W | 1 |
| T79N | R43W | 20 |
| T79N | R43W | 21 |
| T79N | R43W | 32 |
| T79N | R43W | 33 |
| T79N | R43W | 29 |
| T79N | R43W | 28 |
| T79N | R43W | 27 |
| T79N | R43W | 34 |
| T79N | R43W | 22 |
| T79N | R43W | 5 |
| T79N | R43W | 8 |
| T79N | R43W | 17 |
| T79N | R43W | 7 |
| T79N | R43W | 6 |
| T79N | R43W | 10 |
| T79N | R43W | 16 |
| T79N | R43W | 15 |
| T79N | R43W | 2 |
| T79N | R43W | 1 |
| T79N | R43W | 4 |
| T79N | R43W | 9 |
| T79N | R43W | 3 |
| T79N | R43W | 18 |
| T79N | R43W | 26 |
| T79N | R43W | 36 |
| T79N | R43W | 35 |
| T79N | R43W | 23 |
| T79N | R43W | 11 |
| T79N | R43W | 14 |
| T80N | R44W | 10 |
| T80N | R44W | 11 |
| T80N | R43W | 18 |
| T80N | R44W | 13 |
| T80N | R44W | 1 |
| T80N | R44W | 12 |
| T80N | R43W | 7 |
| T80N | R43W | 35 |
| T80N | R43W | 20 |
| T80N | R43W | 21 |
| T80N | R43W | 32 |
| T80N | R43W | 33 |
| T80N | R43W | 29 |
| T80N | R43W | 28 |
| T80N | R43W | 34 |
| T80N | R43W | 27 |
| T80N | R43W | 22 |
| T80N | R43W | 16 |
| T80N | R43W | 17 |

# Loess Hills Scenic Byway Landform Definition

## Harrison County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

| Township | Range | Section |
|---|---|---|
| T80N | R43W | 8 |
| T80N | R43W | 5 |
| T80N | R43W | 9 |
| T80N | R43W | 15 |
| T80N | R43W | 10 |
| T80N | R43W | 4 |
| T80N | R43W | 3 |
| T80N | R44W | 28 |
| T80N | R44W | 21 |
| T80N | R44W | 6 |
| T80N | R44W | 9 |
| T80N | R44W | 3 |
| T80N | R43W | 6 |
| T80N | R44W | 22 |
| T80N | R44W | 23 |
| T80N | R44W | 34 |
| T80N | R44W | 35 |
| T80N | R44W | 27 |
| T80N | R44W | 26 |
| T80N | R43W | 30 |
| T80N | R44W | 36 |
| T80N | R43W | 31 |
| T80N | R44W | 24 |
| T80N | R44W | 25 |
| T80N | R43W | 19 |
| T80N | R44W | 2 |
| T80N | R44W | 15 |
| T80N | R44W | 14 |
| T80N | R44W | 16 |
| T80N | R44W | 5 |
| T80N | R44W | 4 |
| T81N | R43W | 31 |
| T81N | R44W | 22 |
| T81N | R44W | 23 |
| T81N | R44W | 34 |
| T81N | R44W | 35 |
| T81N | R44W | 27 |
| T81N | R44W | 26 |
| T81N | R44W | 36 |
| T81N | R44W | 19 |
| T81N | R44W | 31 |
| T81N | R44W | 30 |
| T81N | R44W | 28 |
| T81N | R44W | 32 |
| T81N | R44W | 33 |
| T81N | R44W | 20 |
| T81N | R44W | 29 |
| T81N | R44W | 21 |
| T81N | R44W | 25 |
| T81N | R44W | 24 |

# Loess Hills Scenic Byway Landform Definition

## Harrison County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

| Township | Range | Section |
|---|---|---|
| T81N | R44W | 14 |
| T81N | R44W | 10 |
| T81N | R44W | 15 |
| T81N | R44W | 3 |
| T81N | R44W | 11 |
| T81N | R44W | 13 |
| T81N | R44W | 12 |
| T81N | R44W | 2 |
| T81N | R44W | 1 |
| T81N | R43W | 19 |
| T81N | R43W | 20 |
| T81N | R43W | 32 |
| T81N | R43W | 30 |
| T81N | R43W | 29 |
| T81N | R43W | 27 |
| T81N | R43W | 33 |
| T81N | R43W | 34 |
| T81N | R43W | 21 |
| T81N | R44W | 4 |
| T81N | R43W | 17 |
| T81N | R43W | 6 |
| T81N | R43W | 7 |
| T81N | R43W | 8 |
| T81N | R43W | 16 |
| T81N | R43W | 15 |
| T81N | R43W | 4 |
| T81N | R43W | 9 |
| T81N | R43W | 10 |
| T81N | R42W | 6 |
| T81N | R44W | 8 |
| T81N | R44W | 9 |
| T81N | R43W | 26 |
| T81N | R43W | 2 |
| T81N | R43W | 14 |
| T81N | R43W | 23 |
| T81N | R43W | 11 |
| T81N | R43W | 13 |
| T81N | R43W | 24 |
| T81N | R42W | 18 |
| T81N | R43W | 1 |
| T81N | R43W | 12 |
| T81N | R42W | 7 |
| T81N | R43W | 28 |
| T81N | R43W | 22 |
| T81N | R43W | 5 |
| T81N | R43W | 18 |
| T81N | R44W | 18 |
| T81N | R44W | 7 |
| T81N | R44W | 17 |
| T81N | R44W | 16 |

# Loess Hills Scenic Byway Landform Definition

## Harrison County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

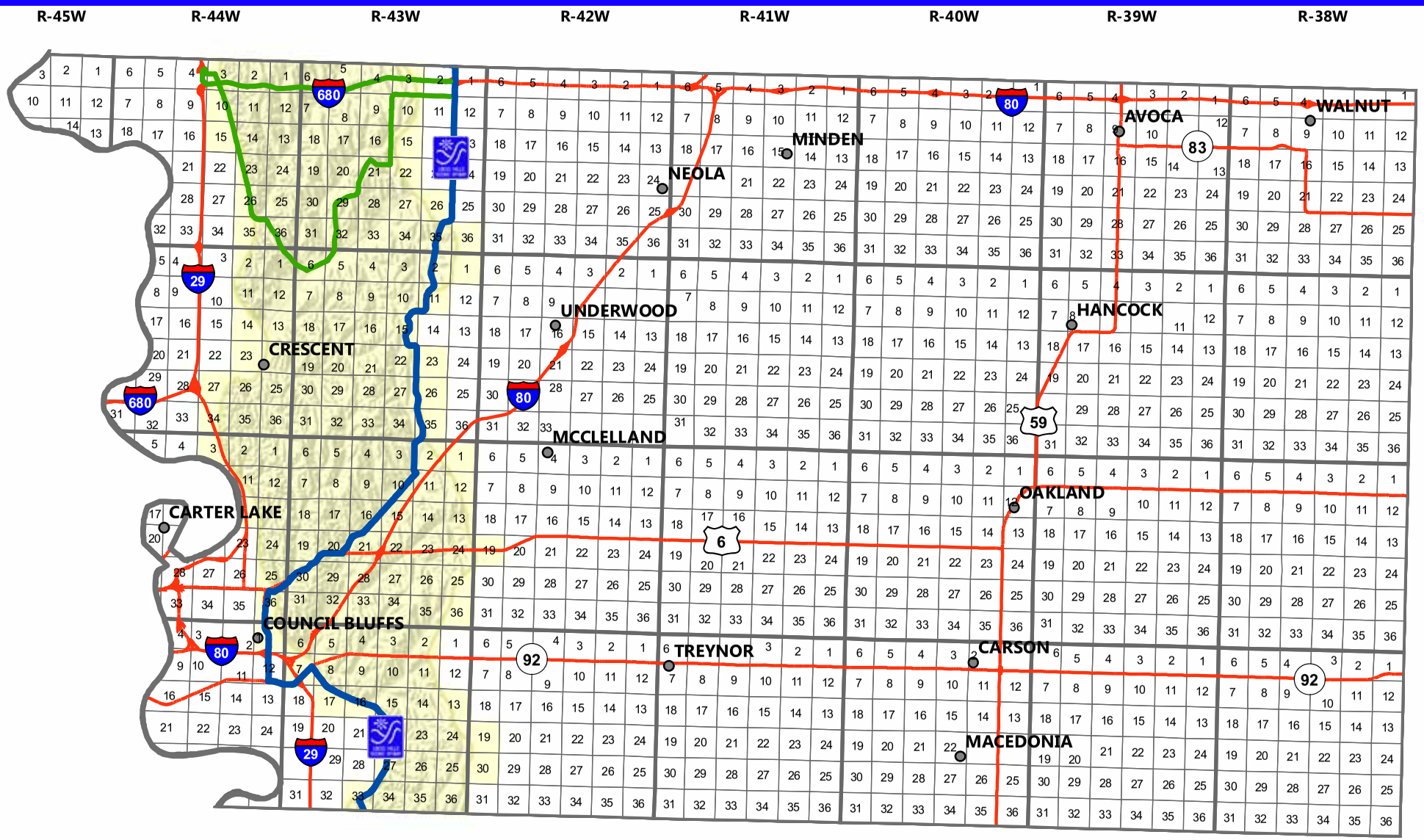
| Township | Range | Section |
|---|---|---|
| T81N | R44W | 5 |
| T81N | R43W | 3 |

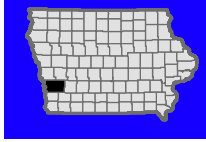
# Landform Definition

## Pottawattamie County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Loess Hills Landform Region
Loess Hills Landform (boundary definition)
Township Line
Section Line

0 1.25 2.5 5 7.5 Miles

N W E S

# Loess Hills Scenic Byway Landform Definition

**Pottawattamie County, IA**

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

| Township | Range | Section |
|---|---|---|
| T74N | R43W | 17 |
| T74N | R43W | 16 |
| T74N | R43W | 5 |
| T74N | R43W | 8 |
| T74N | R43W | 4 |
| T74N | R43W | 10 |
| T74N | R43W | 11 |
| T74N | R43W | 14 |
| T74N | R43W | 13 |
| T74N | R43W | 2 |
| T74N | R43W | 3 |
| T74N | R42W | 19 |
| T74N | R43W | 7 |
| T74N | R42W | 30 |
| T74N | R44W | 1 |
| T74N | R43W | 22 |
| T74N | R43W | 33 |
| T74N | R43W | 34 |
| T74N | R43W | 27 |
| T74N | R43W | 25 |
| T74N | R43W | 35 |
| T74N | R43W | 36 |
| T74N | R43W | 23 |
| T74N | R43W | 26 |
| T74N | R43W | 24 |
| T74N | R43W | 15 |
| T74N | R43W | 9 |
| T74N | R43W | 6 |
| T75N | R44W | 3 |
| T75N | R44W | 14 |
| T75N | R44W | 13 |
| T75N | R43W | 18 |
| T75N | R44W | 2 |
| T75N | R44W | 11 |
| T75N | R43W | 7 |
| T75N | R44W | 12 |
| T75N | R44W | 1 |
| T75N | R43W | 20 |
| T75N | R43W | 22 |
| T75N | R43W | 32 |
| T75N | R43W | 33 |
| T75N | R43W | 34 |
| T75N | R43W | 28 |
| T75N | R43W | 29 |
| T75N | R43W | 27 |
| T75N | R43W | 21 |
| T75N | R43W | 25 |
| T75N | R43W | 35 |
| T75N | R42W | 19 |
| T75N | R43W | 30 |

# Loess Hills Scenic Byway Landform Definition

**Pottawattamie County, IA**

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

| Township | Range | Section |
|---|---|---|
| T75N | R43W | 31 |
| T75N | R44W | 36 |
| T75N | R44W | 25 |
| T75N | R44W | 24 |
| T75N | R43W | 19 |
| T75N | R43W | 6 |
| T75N | R43W | 36 |
| T75N | R43W | 23 |
| T75N | R43W | 26 |
| T75N | R43W | 24 |
| T75N | R43W | 4 |
| T75N | R43W | 17 |
| T75N | R43W | 16 |
| T75N | R43W | 5 |
| T75N | R43W | 8 |
| T75N | R43W | 9 |
| T75N | R43W | 15 |
| T75N | R43W | 14 |
| T75N | R43W | 13 |
| T75N | R43W | 3 |
| T75N | R43W | 10 |
| T75N | R43W | 11 |
| T75N | R43W | 12 |
| T75N | R43W | 2 |
| T75N | R43W | 1 |
| T76N | R43W | 21 |
| T76N | R43W | 28 |
| T76N | R43W | 22 |
| T76N | R43W | 8 |
| T76N | R44W | 13 |
| T76N | R43W | 18 |
| T76N | R43W | 17 |
| T76N | R44W | 1 |
| T76N | R44W | 12 |
| T76N | R43W | 7 |
| T76N | R43W | 6 |
| T76N | R43W | 9 |
| T76N | R43W | 16 |
| T76N | R43W | 15 |
| T76N | R43W | 10 |
| T76N | R43W | 4 |
| T76N | R43W | 5 |
| T76N | R43W | 3 |
| T76N | R43W | 26 |
| T76N | R43W | 11 |
| T76N | R43W | 1 |
| T76N | R44W | 2 |
| T76N | R44W | 26 |
| T76N | R44W | 34 |
| T76N | R44W | 35 |

# Loess Hills Scenic Byway Landform Definition

**Pottawattamie County, IA**

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

| Township | Range | Section |
|---|---|---|
| T76N | R44W | 27 |
| T76N | R44W | 23 |
| T76N | R44W | 14 |
| T76N | R44W | 11 |
| T76N | R44W | 24 |
| T76N | R43W | 20 |
| T76N | R44W | 36 |
| T76N | R43W | 31 |
| T76N | R43W | 32 |
| T76N | R44W | 25 |
| T76N | R43W | 30 |
| T76N | R43W | 29 |
| T76N | R43W | 19 |
| T76N | R43W | 27 |
| T76N | R43W | 33 |
| T76N | R43W | 34 |
| T76N | R43W | 2 |
| T76N | R43W | 23 |
| T76N | R43W | 35 |
| T77N | R43W | 3 |
| T77N | R44W | 10 |
| T77N | R44W | 23 |
| T77N | R43W | 19 |
| T77N | R44W | 35 |
| T77N | R44W | 36 |
| T77N | R43W | 31 |
| T77N | R44W | 25 |
| T77N | R44W | 26 |
| T77N | R44W | 3 |
| T77N | R43W | 30 |
| T77N | R44W | 24 |
| T77N | R43W | 27 |
| T77N | R43W | 33 |
| T77N | R43W | 32 |
| T77N | R43W | 34 |
| T77N | R43W | 21 |
| T77N | R43W | 22 |
| T77N | R43W | 6 |
| T77N | R44W | 14 |
| T77N | R44W | 13 |
| T77N | R43W | 18 |
| T77N | R44W | 2 |
| T77N | R44W | 11 |
| T77N | R43W | 7 |
| T77N | R44W | 12 |
| T77N | R44W | 1 |
| T77N | R43W | 17 |
| T77N | R43W | 16 |
| T77N | R43W | 15 |
| T77N | R43W | 5 |

# Loess Hills Scenic Byway Landform Definition

**Pottawattamie County, IA**

***Loess Hills Scenic Byway Corridor Management Plan***

**Source: Golden Hills Resource Conservation & Development**

**Prepared By: Pottawattamie County GIS Department**

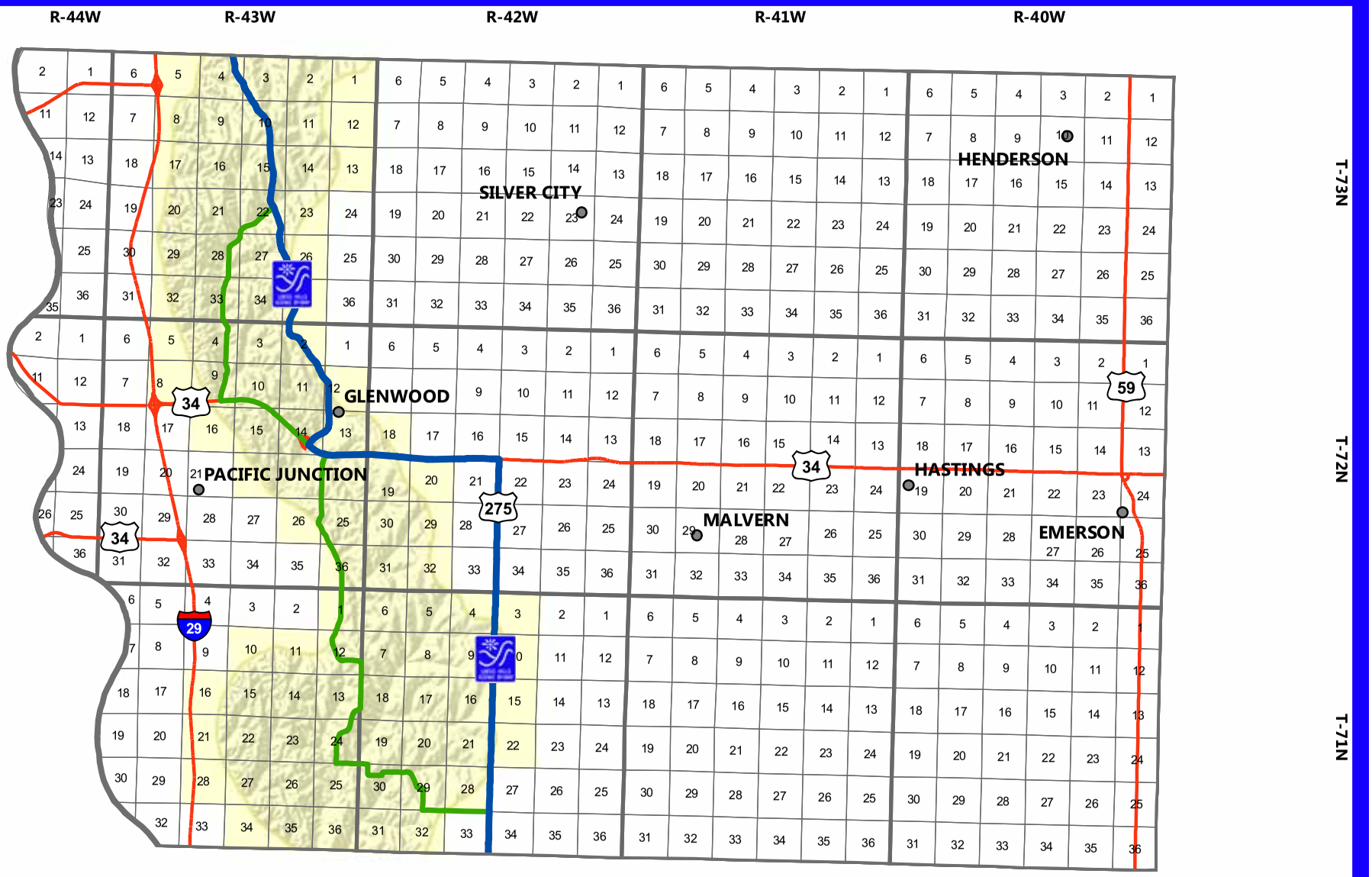
| Township | Range | Section |
|---|---|---|
| T77N | R43W | 8 |
| T77N | R43W | 9 |
| T77N | R43W | 10 |
| T77N | R43W | 20 |
| T77N | R43W | 29 |
| T77N | R43W | 28 |
| T77N | R43W | 4 |
| T77N | R43W | 35 |
| T77N | R43W | 36 |
| T77N | R43W | 26 |
| T77N | R44W | 15 |

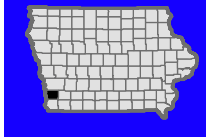
# Landform Definition

## Mills County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
Loess Hills Landform Region
Loess Hills Landform (boundary definition)
Township Line
Section Line

0 1 2 4 6 Miles

N W E S

# Loess Hills Scenic Byway Landform Definition

## Mills County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

| Township | Range | Section |
|---|---|---|
| T71N | R43W | 13 |
| T71N | R42W | 16 |
| T71N | R43W | 25 |
| T71N | R42W | 15 |
| T71N | R42W | 22 |
| T71N | R43W | 1 |
| T71N | R42W | 6 |
| T71N | R42W | 7 |
| T71N | R43W | 12 |
| T71N | R42W | 8 |
| T71N | R42W | 5 |
| T71N | R42W | 3 |
| T71N | R42W | 9 |
| T71N | R42W | 10 |
| T71N | R42W | 4 |
| T71N | R42W | 18 |
| T71N | R42W | 19 |
| T71N | R43W | 24 |
| T71N | R42W | 20 |
| T71N | R42W | 21 |
| T71N | R42W | 17 |
| T71N | R43W | 21 |
| T71N | R43W | 28 |
| T71N | R43W | 16 |
| T71N | R43W | 23 |
| T71N | R43W | 27 |
| T71N | R43W | 26 |
| T71N | R43W | 10 |
| T71N | R43W | 22 |
| T71N | R43W | 15 |
| T71N | R43W | 14 |
| T71N | R43W | 11 |
| T71N | R42W | 30 |
| T71N | R42W | 29 |
| T71N | R42W | 28 |
| T72N | R43W | 2 |
| T72N | R43W | 12 |
| T72N | R42W | 18 |
| T72N | R43W | 13 |
| T72N | R43W | 26 |
| T72N | R43W | 22 |
| T72N | R43W | 23 |
| T72N | R43W | 8 |
| T72N | R43W | 5 |
| T72N | R43W | 9 |
| T72N | R43W | 10 |
| T72N | R43W | 15 |
| T72N | R43W | 16 |
| T72N | R43W | 14 |
| T72N | R43W | 11 |

# Loess Hills Scenic Byway Landform Definition

## Mills County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

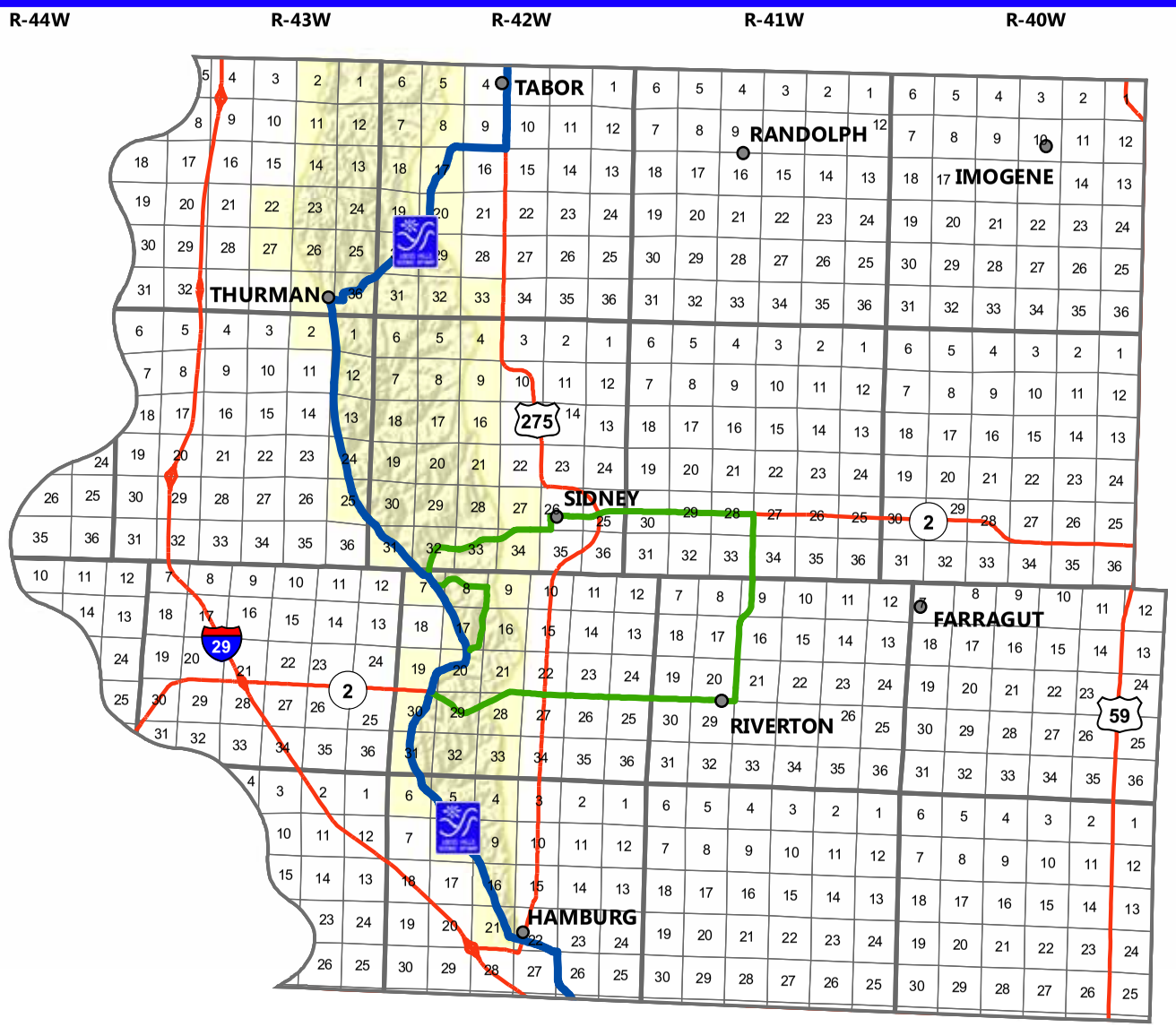
| Township | Range | Section |
|---|---|---|
| T72N | R43W | 3 |
| T72N | R43W | 4 |
| T72N | R42W | 20 |
| T72N | R42W | 31 |
| T72N | R42W | 32 |
| T72N | R42W | 19 |
| T72N | R42W | 30 |
| T72N | R42W | 29 |
| T72N | R43W | 24 |
| T72N | R43W | 36 |
| T72N | R43W | 25 |
| T73N | R43W | 33 |
| T73N | R43W | 34 |
| T73N | R43W | 35 |
| T73N | R43W | 16 |
| T73N | R43W | 21 |
| T73N | R43W | 29 |
| T73N | R43W | 28 |
| T73N | R43W | 20 |
| T73N | R43W | 22 |
| T73N | R43W | 27 |
| T73N | R43W | 15 |
| T73N | R43W | 5 |
| T73N | R43W | 17 |
| T73N | R43W | 8 |
| T73N | R43W | 9 |
| T73N | R43W | 10 |
| T73N | R43W | 14 |
| T73N | R43W | 13 |
| T73N | R43W | 23 |
| T73N | R43W | 12 |
| T73N | R43W | 11 |
| T73N | R43W | 1 |
| T73N | R43W | 26 |
| T73N | R43W | 32 |

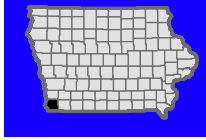
# Landform Definition

## Fremont County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



- Loess Hills Scenic Byway Spine
- Loess Hills Scenic Byway Loop
- Loess Hills Landform Region
- Loess Hills Landform (boundary definition)
- Township Line
- Section Line

0 1.25 2.5 5 7.5 Miles

N W E S

# Loess Hills Scenic Byway Landform Definition

**Fremont County, IA**

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

| Township | Range | Section |
|---|---|---|
| T67N | R42W | 6 |
| T67N | R42W | 4 |
| T67N | R42W | 21 |
| T67N | R42W | 9 |
| T67N | R42W | 16 |
| T67N | R42W | 8 |
| T67N | R42W | 5 |
| T68N | R42W | 9 |
| T68N | R42W | 19 |
| T68N | R42W | 20 |
| T68N | R42W | 31 |
| T68N | R42W | 32 |
| T68N | R42W | 30 |
| T68N | R42W | 29 |
| T68N | R42W | 28 |
| T68N | R42W | 33 |
| T68N | R42W | 21 |
| T68N | R42W | 7 |
| T68N | R42W | 17 |
| T68N | R42W | 16 |
| T68N | R42W | 8 |
| T69N | R42W | 32 |
| T69N | R43W | 24 |
| T69N | R43W | 25 |
| T69N | R43W | 13 |
| T69N | R43W | 12 |
| T69N | R43W | 2 |
| T69N | R43W | 1 |
| T69N | R42W | 31 |
| T69N | R42W | 33 |
| T69N | R42W | 34 |
| T69N | R42W | 4 |
| T69N | R42W | 19 |
| T69N | R42W | 20 |
| T69N | R42W | 29 |
| T69N | R42W | 30 |
| T69N | R42W | 28 |
| T69N | R42W | 21 |
| T69N | R42W | 6 |
| T69N | R42W | 18 |
| T69N | R42W | 7 |
| T69N | R42W | 17 |
| T69N | R42W | 16 |
| T69N | R42W | 5 |
| T69N | R42W | 8 |
| T69N | R42W | 9 |
| T69N | R42W | 27 |
| T70N | R43W | 36 |
| T70N | R43W | 25 |
| T70N | R43W | 24 |

# Loess Hills Scenic Byway Landform Definition

**Fremont County, IA**

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development

Prepared By: Pottawattamie County GIS Department

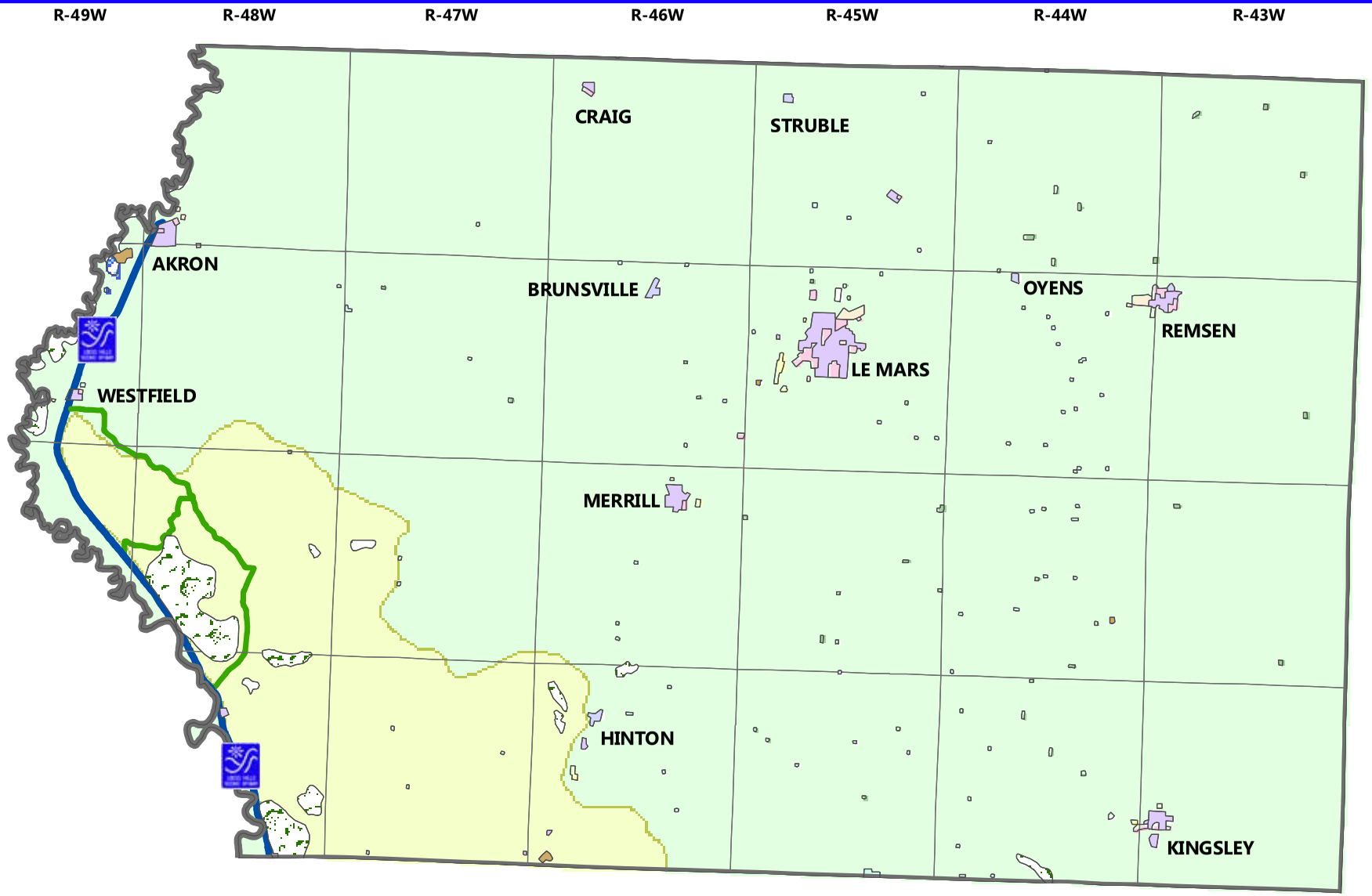
| Township | Range | Section |
|---|---|---|
| T70N | R43W | 14 |
| T70N | R43W | 13 |
| T70N | R42W | 19 |
| T70N | R42W | 20 |
| T70N | R42W | 31 |
| T70N | R42W | 32 |
| T70N | R42W | 30 |
| T70N | R42W | 29 |
| T70N | R42W | 33 |
| T70N | R42W | 6 |
| T70N | R42W | 18 |
| T70N | R42W | 7 |
| T70N | R43W | 22 |
| T70N | R43W | 23 |
| T70N | R43W | 35 |
| T70N | R43W | 27 |
| T70N | R43W | 26 |
| T70N | R43W | 1 |
| T70N | R43W | 2 |
| T70N | R43W | 11 |
| T70N | R43W | 12 |
| T70N | R42W | 17 |
| T70N | R42W | 5 |
| T70N | R42W | 8 |

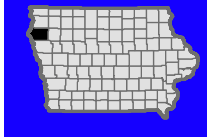
# Land Use Land Cover

## Plymouth County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



- Loess Hills Scenic Byway Spine
- Loess Hills Scenic Byway Loop
- Commercial & Services
- Confined Feeding Operations
- Cropland & Pasture
- Deciduous Forest Land
- Industrial
- Mixed Urban or Built-Up Land
- Other Agricultural Land
- Other Urban or Built-Up Land
- Reservoirs
- Residential
- Strip Mines-Quarries-Gravel Pits
- Transportation-Communication-Utilities
- Unknown

0 1.25 2.5 5 7.5 Miles

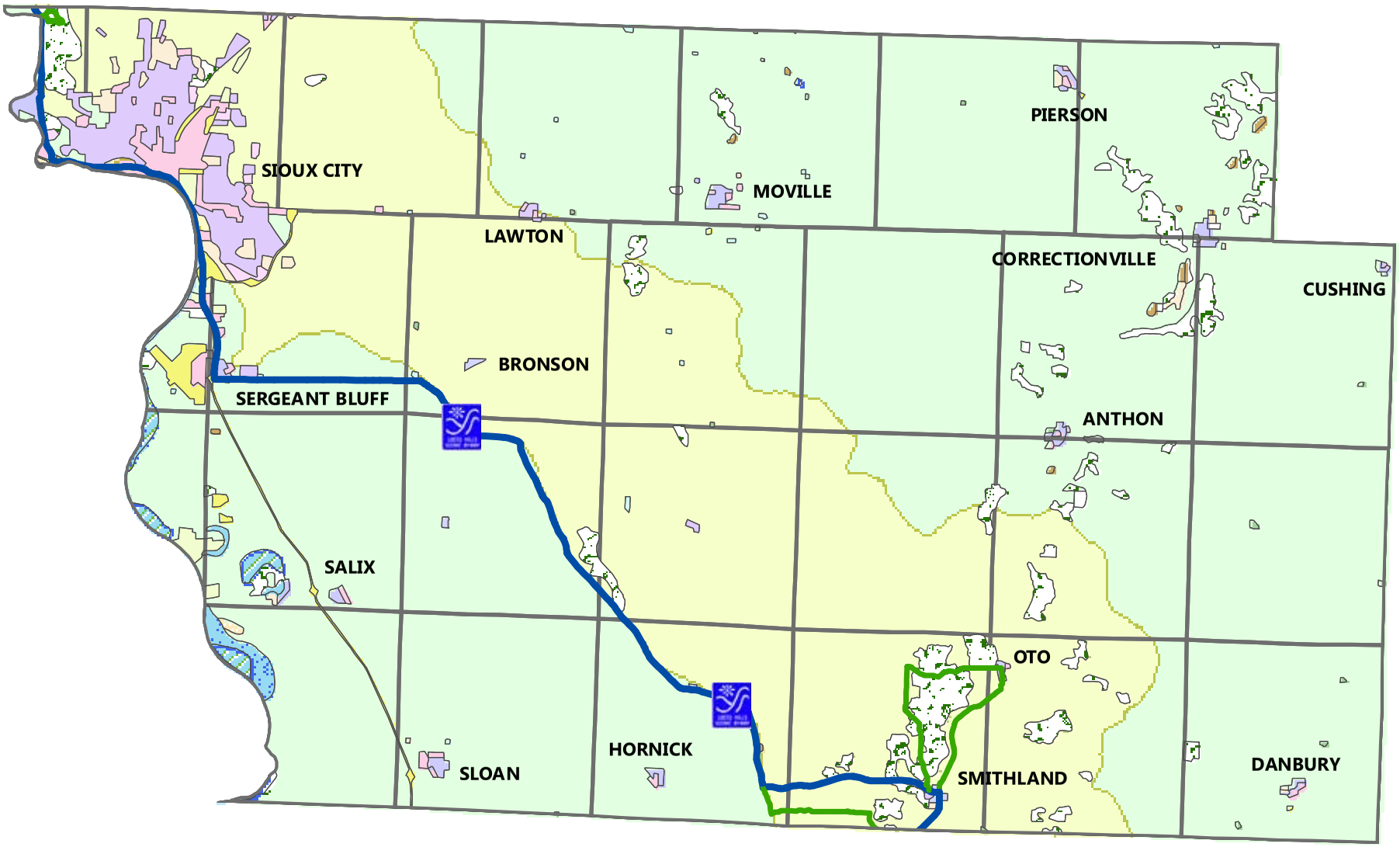
N W E S

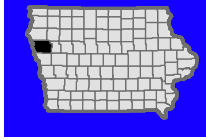
# Land Use Land Cover

## Woodbury County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



- Loess Hills Scenic Byway Spine
- Loess Hills Scenic Byway Loop
- Commercial & Services
- Confined Feeding Operations
- Cropland & Pasture
- Deciduous Forest Land
- Forested Wetlands
- Industrial
- Industrial & Commercial
- Lakes
- Mixed Urban or Built-Up Land
- Nonforested Wetlands
- Other Agricultural Land
- Other Agricultural Land
- Other Urban or Built-Up Land
- Reservoirs
- Residential
- Sandy Areas Other Than Beaches
- Shrub & Brush Rangeland
- Streams & Canals
- Strip Mines-Quarries-Gravel Pits
- Transitional Areas
- Transportation-Communication-Utilities
- Unknown

0 1.25 2.5 5 7.5 Miles

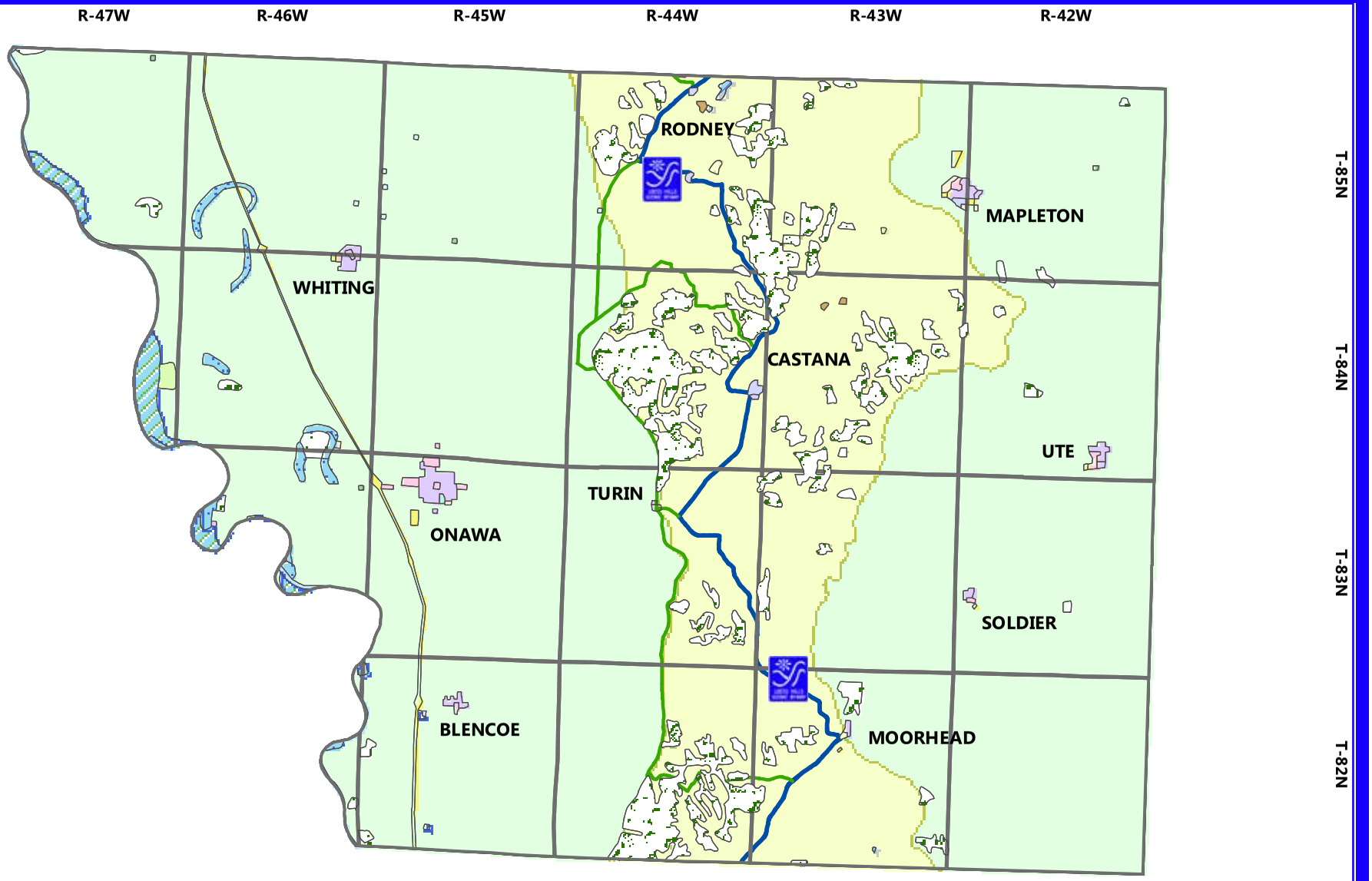
N W E S

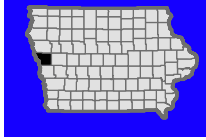
# Land Use Land Cover

## Monona County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



- Loess Hills Scenic Byway Spine
- Loess Hills Scenic Byway Loop
- Commercial & Services
- Confined Feeding Operations
- Cropland & Pasture
- Deciduous Forest Land
- Forested Wetlands
- Herbaceous Rangeland
- Industrial
- Lakes
- Mixed Urban or Built-Up Land
- Nonforested Wetlands
- Other Agricultural Land
- Other Urban or Built-Up Land
- Reservoirs
- Residential
- Shrub & Brush Rangeland
- Streams & Canals
- Transportation-Communication-Utilities

0 1.25 2.5 5 7.5 Miles

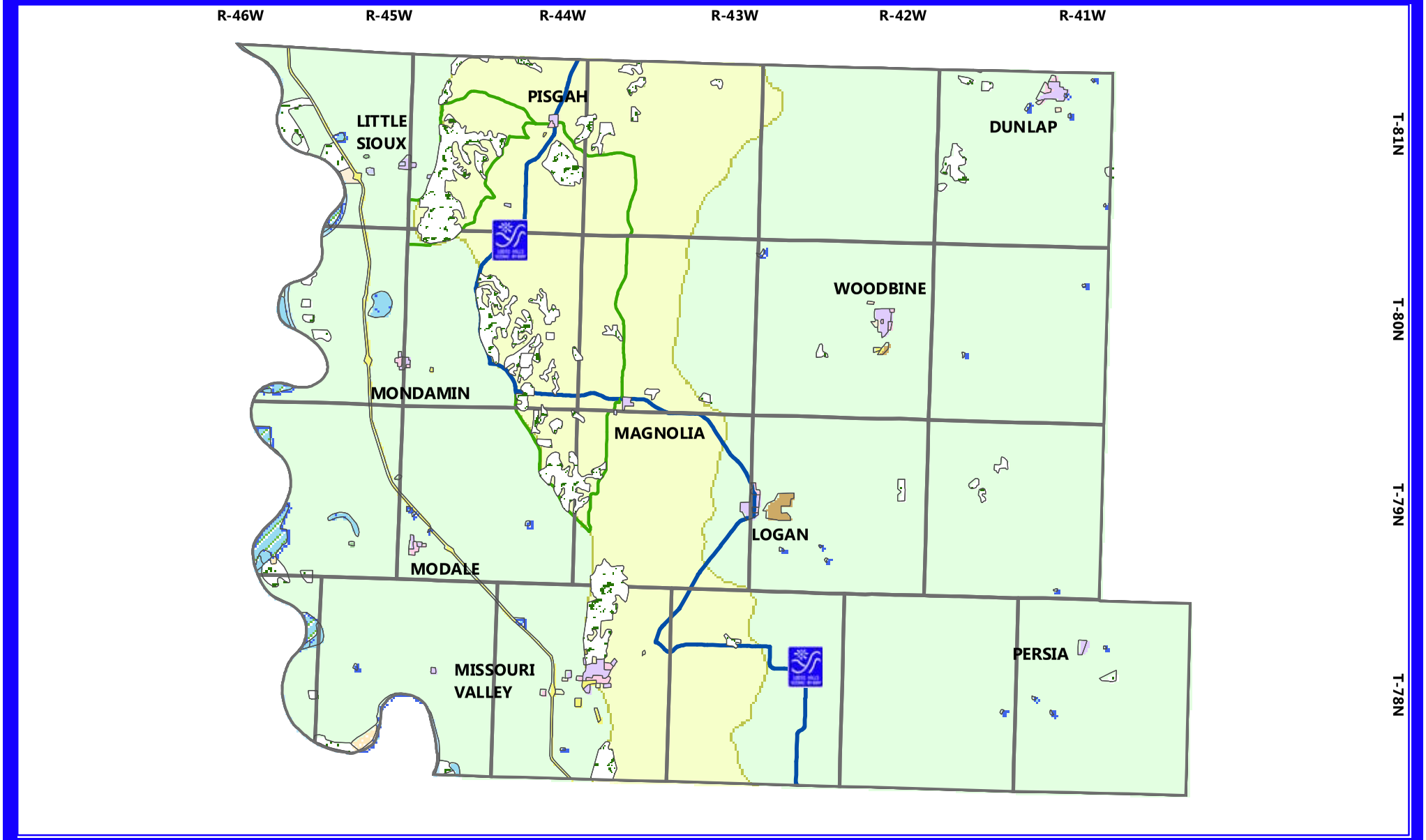
N W E S

# Land Use Land Cover

## Harrison County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department

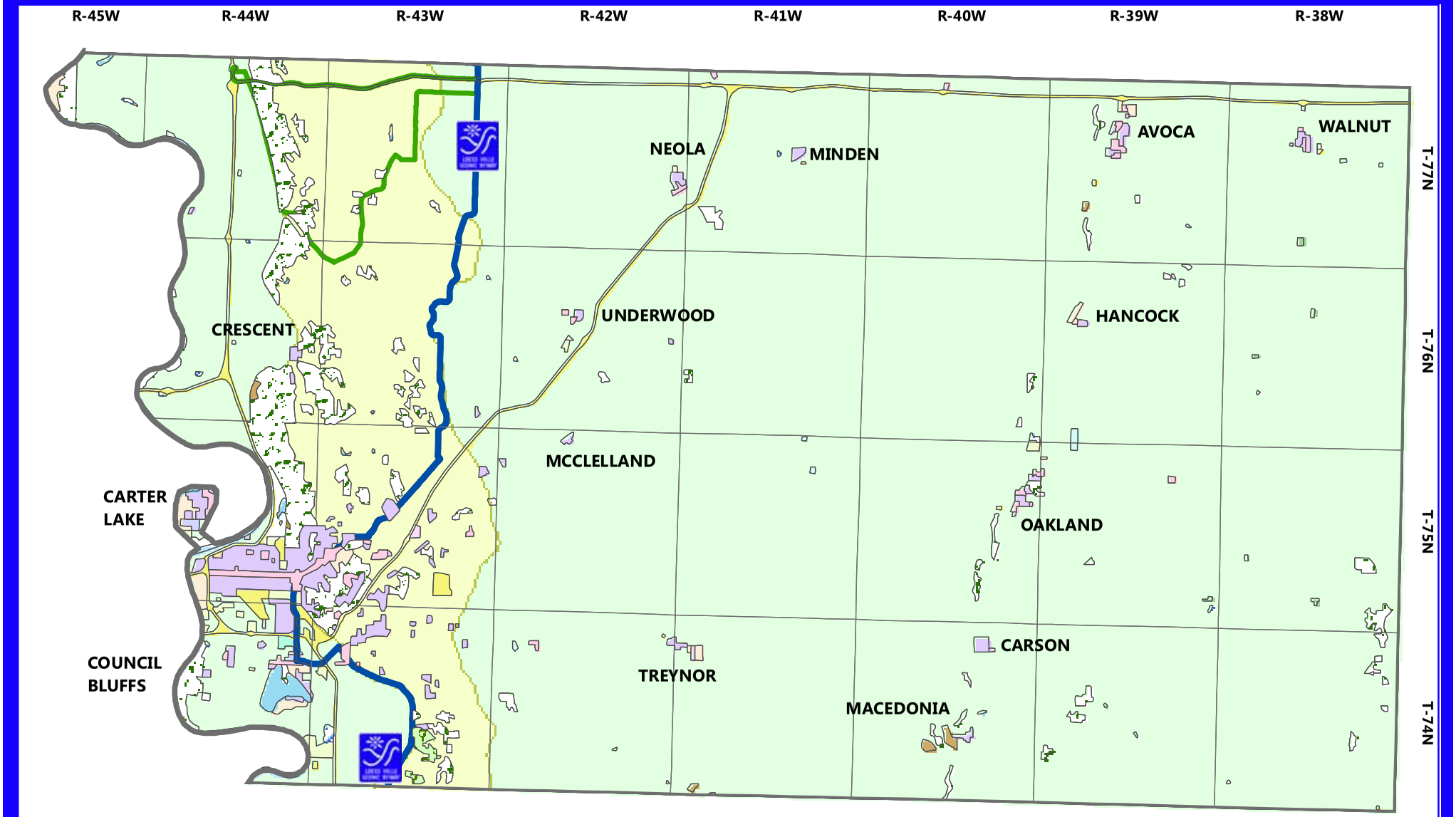


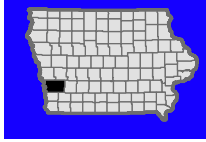
# Land Use Land Cover

## Pottawattamie County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



- Loess Hills Scenic Byway Spine
- Loess Hills Scenic Byway Loop
- Commercial & Services
- Confined Feeding Operations
- Cropland & Pasture
- Deciduous Forest Land
- Industrial
- Industrial & Commercial Complexes
- Lakes
- Mixed Forest Land
- Mixed Urban or Built-Up Land
- Orchards-Groves-Vineyards
- Other Agricultural Land
- Other Urban or Built-Up Land
- Reservoirs
- Residential
- Streams & Canals
- Strip Mines-Quarries-Gravel Pits
- Transportation-Communication-Utilities
- Unknown

0 1.25 2.5 5 7.5 Miles

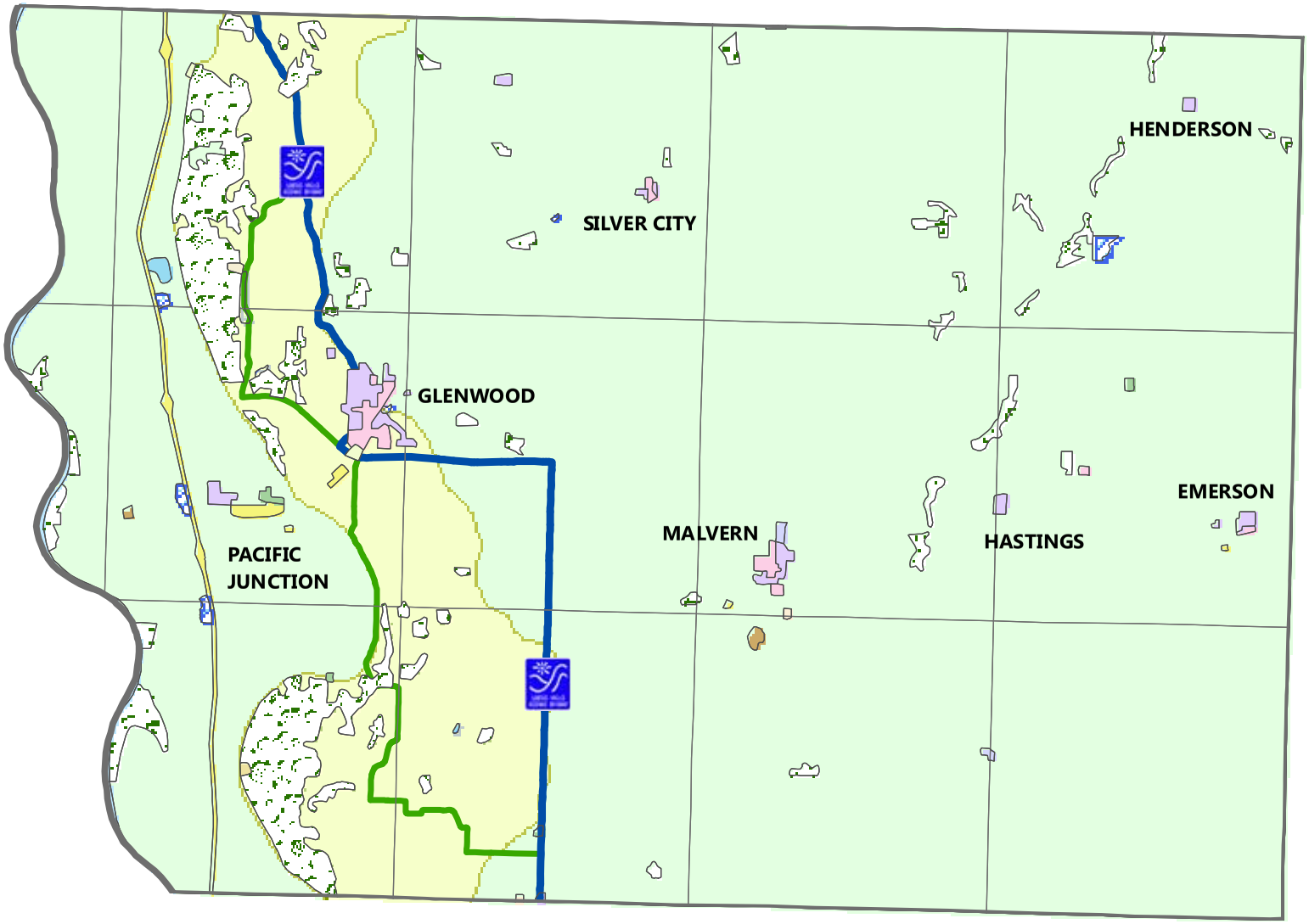
N W E S

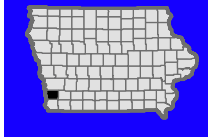
# Land Use Land Cover

## Mills County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



- Loess Hills Scenic Byway Spine
- Loess Hills Scenic Byway Loop
- Commercial & Services
- Cropland & Pasture
- Deciduous Forest Land
- Industrial
- Industrial & Commercial
- Lakes
- Mixed Urban or Built-Up Land
- Orchards-Groves-Vineyards
- Other Agricultural Land
- Other Urban or Built-Up Land
- Reservoirs
- Residential
- Streams & Canals
- Strip Mines-Quarries-Gravel Pits
- Transportation-Communication-Utilities
- Unknown

0 1 2 4 6 Miles

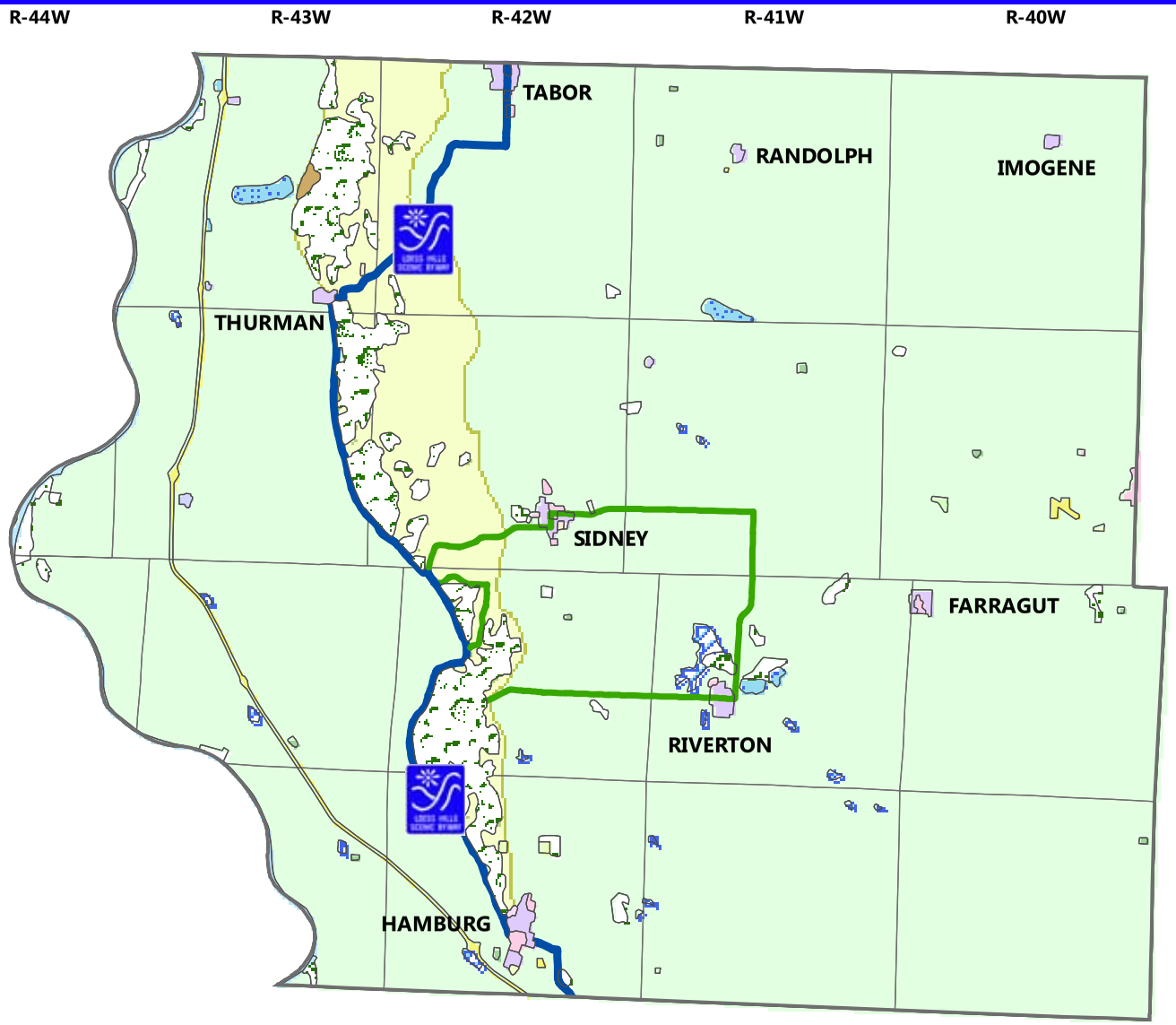
N W E S

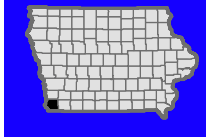
# Land Use Land Cover

## Fremont County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



- Loess Hills Scenic Byway Spine
- Loess Hills Scenic Byway Loop
- Commercial & Services
- Cropland & Pasture
- Deciduous Forest Land
- Evergreen Forest Land
- Industrial
- Lakes
- Mixed Urban or Built-Up Land
- Nonforested Wetlands
- Orchards-Groves-Vineyards
- Other Agricultural Land
- Other Urban or Built-Up Land
- Reservoirs
- Residential
- Streams & Canals
- Strip Mines-Quarries-Gravel Pits
- Transitional
- Transportation-Communication-Utilities
- Unknown

0 1.25 2.5 5 7.5 Miles

N W E S

## Assessing Future Impacts

Conditions in the Loess Hills Scenic Byway Corridor are dynamic. Rural housing development, urban and industrial expansion, highway construction, mining operations and agriculture are ongoing activities that can significantly impact the intrinsic qualities of the Scenic Byway Corridor. Impacts caused by these activities could greatly diminish the area's attractiveness to travelers. Eventually, the negative impacts of these activities could result in irreparable damage to the Loess Hills, a region of recognized state, national and world significance.

Mining operation in the Loess Hills

Golden Hills

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*An American Treasure Unique in the World*

### *A Resource Assessment Tool for the Loess Hills Scenic Byway Corridor*

Maintaining the intrinsic qualities of the Corridor requires that Scenic Byway stakeholders understand the impacts of certain activities and effectively work to influence the manner in which they take place. In order to assist stakeholders with these tasks, a corridor resource assessment tool has been developed as part of the *Corridor Management Plan.*

Development of the corridor resource assessment tool consisted of dividing the Loess Scenic Byway into 91 segments of between 2 to 7

miles in length and side of road designations “A” and “B”. The segment breaks were determined primarily by landscape changes. Road, stream or railway intersections provided a landmark for segment breaks in areas of little change in landscape. An extensive inventory of resources and features in the Scenic Byway Corridor associated with each segment was completed. This information has been used in geographic information system (GIS) to create a comprehensive database and accompanying maps. A description of the information collected during the inventory is presented at the end of this chapter. Maps of the Scenic Byway segments used in the corridor resource assessment tool are also included at the end of this chapter.

The corridor resource assessment tool can be used to:

- Summarize resources and features present along segments of the Scenic Byway;
- Determine the relative rarity or commonality of resources and features in the Corridor;
- Assess land use management alternatives and changes in the Scenic Byway Corridor;
- Identify Scenic Byway segments with desirable features for special programs such as Integrated Roadside Vegetation Management; and
- Identify and rank the relative importance of segments with features that contribute to the quality of the travel experience in the Scenic Byway Corridor.

The database and mapping system are maintained by Golden Hills Resource Conservation and Development (RC&D). Assistance in applying the corridor resource assessment tool is available from Golden Hills RC&D, Inc. to all Byway stakeholder organizations.

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### Travel Experience Application

The corridor resource assessment tool contains information on resources and features present along segments that contribute to the quality of the travel experience in the Loess Hills Scenic Byway Corridor. The use of this information to rate travel experience in the Corridor reflects the results of visual perception, recreational preference and landscape resource attitude studies conducted with more than 700 visitors and residents in the Loess Hills. The tool uses information in the corridor resource assessment database to assign relative ratings to each segment of the Scenic Byway with respect to the quality of travel experience. For the purpose of this travel experience application, a relative rating of high is defined by a given

segment of the Scenic Byway having the features and associated conditions described listed below. A map of the travel experience application is included at the end of this chapter.

| Feature | Condition |
|---|---|
| Elevation | Overview or mid-level |
| Foreground land use | Desirable woody vegetation or prairie |
| Slope | Greater than 20% |
| Enclosure | Yes with landform or vegetation |
| Development | Farm site or none |
| Landcover | 2 or 3 land cover types with or without view of floodplain |
| Horizontal alignment | Winding, curving |
| Vertical alignment | Highly variable |
| Ridgeline | Undeveloped if present |
| Roadcuts | Two or more present |
| Eyesores | None |
| Critical resource areas | One or more present |
| Water present | Yes, any type |

**Additional Applications of the Corridor Resource Assessment Tool**

Additional applications of the tool include the assessment of impacts to resources in the Corridor from roadway construction and land use changes. Roadway construction that can potentially impact resources in the Corridor include roadway and shoulder widening, vertical or horizontal roadway realignment, and the installation of bridges and drainage systems. These activities can impact desirable prairie and woodland land cover, roadway enclosure by the landform or vegetation, and natural landscape features such as wetlands and rivers.

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Land use changes that can impact resources in the Corridor include residential, commercial and industrial construction, new or upgraded utility lines, and mining and soil excavation activities. These changes can impact land cover, the percentage of undeveloped landscape, number of eyesores, ridgeline condition, sense of enclosure, and natural landscape features.

### *Future Impact Actions*

**Future Impacts Action #1**

Application of the corridor resource assessment tool to evaluate the impact from a particular activity will be helpful in planning and influencing change in the Loess Hills. The rating system will enable local governments, public agencies and private organizations to anticipate the consequences of proposed activities in the Scenic Byway Corridor. As a result, the tool can be used to identify the need for, and select, alternative courses of action that avoid or minimize negative impacts on resources in the Corridor. Byway stakeholders should familiarize themselves with the corridor resource assessment tool and apply the tool to evaluate and avoid any negative effects from all major activities that could potentially impact the Loess Hills.

***Maps and Tables***

- Corridor Resource Assessment Inventory - Table
- Corridor Resource Assessment Segments - Map
- Corridor Resource Assessment - Quality of Travel Experience - Map

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Data collected for resources and features along the Scenic Byway are outlined below:

**COUNTY DATA**: Refers to the county in which the Scenic Byway segment is located:

1. Road ID: reference to a particular segment from 2 to 7 miles in length along the Scenic Byway; numbering begins with #1 at the south limits of the system.
2. Side: reference to which side of the segment is assessed; designation of side A or side B is given.

**VIEWSHED DATA**: This data refers to the landscape within view from the Scenic Byway. The various land uses and land covers were noted if they existed:

1. Undeveloped, natural: percentage of land in the segment-side which has no structures or agricultural use; the land appears to be unused and is in a natural state of land cover.
2. Undeveloped, earthwork changes: land is undeveloped except for obvious earthwork changes; this could include conservation earthwork, fill dirt removal, or soil stockpiling.
3. Developed, residential: development occurs that is used for housing; could include single detached housing, multi-family housing or trailer sites.
4. Developed, agricultural: development occurs that includes agricultural use of the land; could indicate row cropped, grazing lands, feedlots.
5. Developed, commercial: development occurs that includes commercial buildings or operations.
6. Developed, urban: urban development occurs; could indicate village or large community.
7. Forested, deciduous: land cover noted with tract(s) of deciduous forest.
8. Forested, deciduous & evergreen: land cover noted with tract(s) of mixed deciduous and evergreen forest.
9. Forested, evergreen: land cover noted with tract(s) of evergreen (eastern red cedar most likely) forest.
10. Pasture: land cover noted with tract(s) of grazed pasture.
11. Row-Cropped: land cover noted with tract(s) of row-cropped land, most likely corn or soybeans.
12. Prairie: land cover noted with tract(s) of native prairie vegetation.
13. Landcover Pattern Type: Several types of landcover patterns are typically found in the region; this section details which of the patterns are present along this segment-side in a typical framed view (at any one time). Land covers that were found include: row-cropped, pasture, forest, development, and prairie. The following patterns have been identified (extensive information is available about preferences for these types):
    - R = >80% row-cropped
    - 1 = predominantly one land cover that is not row-cropped; could include pasture, forest, or prairie
    - 2-3 = two or three landcover types are present in various combinations
    - U = urban
    - + = indicates two or three landcover types are present in various combinations with a view of the flood plain

**VIEWSHED DATA contd**:

14 Water Present: indicates presence of water in the viewshed on the segment-side; the following types of water were identified (in some cases quantities were of each were noted):
- W = wetland
- S = stream
- L = lake
- N = none visible

15. Ridge Line, status: indicates the development or obstruction by development of ridge lines (if they exist) in the segment-side:
- D = developed
- U = undeveloped
- 0 = no ridge line in viewshed

16. Quarry, landfill: indicates the presence of a visible quarry or landfill on segment-side.
17. Soil excavation: indicates presence of one or more obvious soil excavation areas on segment-side.
18. Exposed slopes: indicates presence of bare, unvegetated slopes where earthwork has occurred.
19. Eyesores present: indicates presence of obvious eyesores due to human activity along the segment side:
- S = some eyesores present
- A = a lot of eyesores present

**TOPOGRAPHIC DATA**: One or two types of the following classifications were made on the viewshed slopes present. This classification was made to indicate general steepness of the land:

1. >20% slope: predominant areas within the viewshed are composed of land with >20% slope
2. 9 - 20% slope: predominant areas within the viewshed are composed of 9 - 20% slope
3. 2 - 9% slope: predominant areas within the viewshed are composed of 2 - 9% slope
4. 0 - 2 % slope: predominant areas within the viewshed are composed of floodplain areas

**ROUTE DATA**: Data collected was considered essential to a detailed understanding of the Scenic Byway routes:

1. Horizontal Alignment: a measure of the configuration of the road in the horizontal plane:
   - T = straight alignment
   - G = geometric alignment or one with sharp corners rather than sweeping curves
   - S = sinuous or very curving alignment
2. Vertical alignment: a measure of the configuration of the road in the vertical plane
   - 0 = essentially flat alignment such as at the base of the bluffs and on the flood plain
   - M = moderately variable alignment
   - V = highly variable alignment - a lot of up and down through the landform

**ROUTE DATA contd:**

3. Elevation: a determination was made for the segment in general concerning it's placement in the vertical aspect of the landform:
    - D = distant from the landform - not within or directly adjacent to it
    - B = baseline or bottom edge of land formation
    - O = overview or high elevation
    - M = mid-level with land both lower and higher than the road elevation
4. CRA within segment/close: indication if a Critical Resource Area (CRA) is located within the quarter-section of land nearest the segment-side of the route; CRAs were identified in the Loess Hills Landscape Resource Study and refer to verified rare or endangered plant or animal species or habitat, or cultural or historic resource sites.
5. Public recreation area within segment: indication of a developed public recreation area along or near the segment.
6. Historic/Cultural site in segment: indication of historic or cultural site that is undeveloped but of public interest; sites are not sensitive to impact and are generally not considered CRAs.
7. Road Cuts: indication of the presence and frequency of earthwork cuts through the Loess Hills landform that are close to the road and unvegetated - therefore exposing the soil formation. These cuts create a sense of enclosure along the route and add interest for travelers:
    - 0 = none on segment-side
    - 1 = one on segment-side
    - 2 = two on segment-side
    - 3 = three on segment-side
    - >3 = more than three on segment-side
8. Juxtaposition: a reference to the location of route segment, in a plan view format, within the landform:
    - E = segment located east of the steepest sections and in moderately rolling or flood plain landscape
    - I = in the center and steepest parts of the landform
    - W = segment located west and outside of the landform
9. Enclosed ROW w/ landform: a sense of enclosure exists along significant portions of this segment-side due to landform.
10. Enclosed ROW w/ vegetation: a sense of enclosure exists along significant portions of this segment-side due to overhanging or close trees.
11. Open, non-enclosed ROW: no sense of enclosure was detected on this segment-side.
12. ROW width: an indication of the perceived width of the right-of-way (not pavement):
    - N = narrow
    - A = average
13. Pavement width: an indication of the perceived width of the road surface:
    - N = narrow
    - A = average
14. No shoulders: if checked, at least a portion of this segment-side contains no paved or gravel shoulders.
15. Shoulder width: shoulders were found on at least a portion of the segment -side if a letter is shown in this row; this is a measure of the perceived width of the existing shoulders:
    - N = narrow shoulders present
    - A = typical or average shoulders present
    - E = extra-wide shoulders present

**ROUTE DATA contd**:

16. Paved road surface: checked if segment contains paved surfaces; paved implies concrete, asphalt-concrete or bituminous.
17. Rock road surface: checked if segment contains rock surfaced roads.
18. Dirt surface: checked if segment contains dirt (non-rocked) surface roads.

**FOREGROUND DATA:** Refers to the portion of the landscape that is closest to the edge of the ROW and the traveler. It is the landscape that can be observed with the greatest detail:

1. ROW vegetation, native prairie: using visual reconnaissance, an estimation of the percentage of the right-of-way vegetation that is native prairie.
2. ROW, unmown grasses: an indication that portions of the right-of-way are unmown grasses.
3. ROW vegetation, mown: an indication that mowing of the right-of-way is occurring along this segment-side.
4. Foreground vegetation, desirable woody: an indication of the presence of woody vegetation that is desirable from a habitat and a visual stand point; is this vegetation were removed by road improvement or development, a significant impact would occur because of this change.
5. Foreground vegetation, woody: an indication that significant woody vegetation exists adjacent to the road.
6. Foreground vegetation, rowcrop: an indication that significant potions of the segment-side have row-cropped land in the foreground.
7. Foreground vegetation, pasture: an indication that significant portions of the segment-side have pasture in the foreground.
8. Foreground vegetation, prairie: an indication that significant portions of the segment-side have prairie vegetation in the foreground.

**DEVELOPMENT DATA:** Refers to the presence and type of development visible from the Scenic Byway:

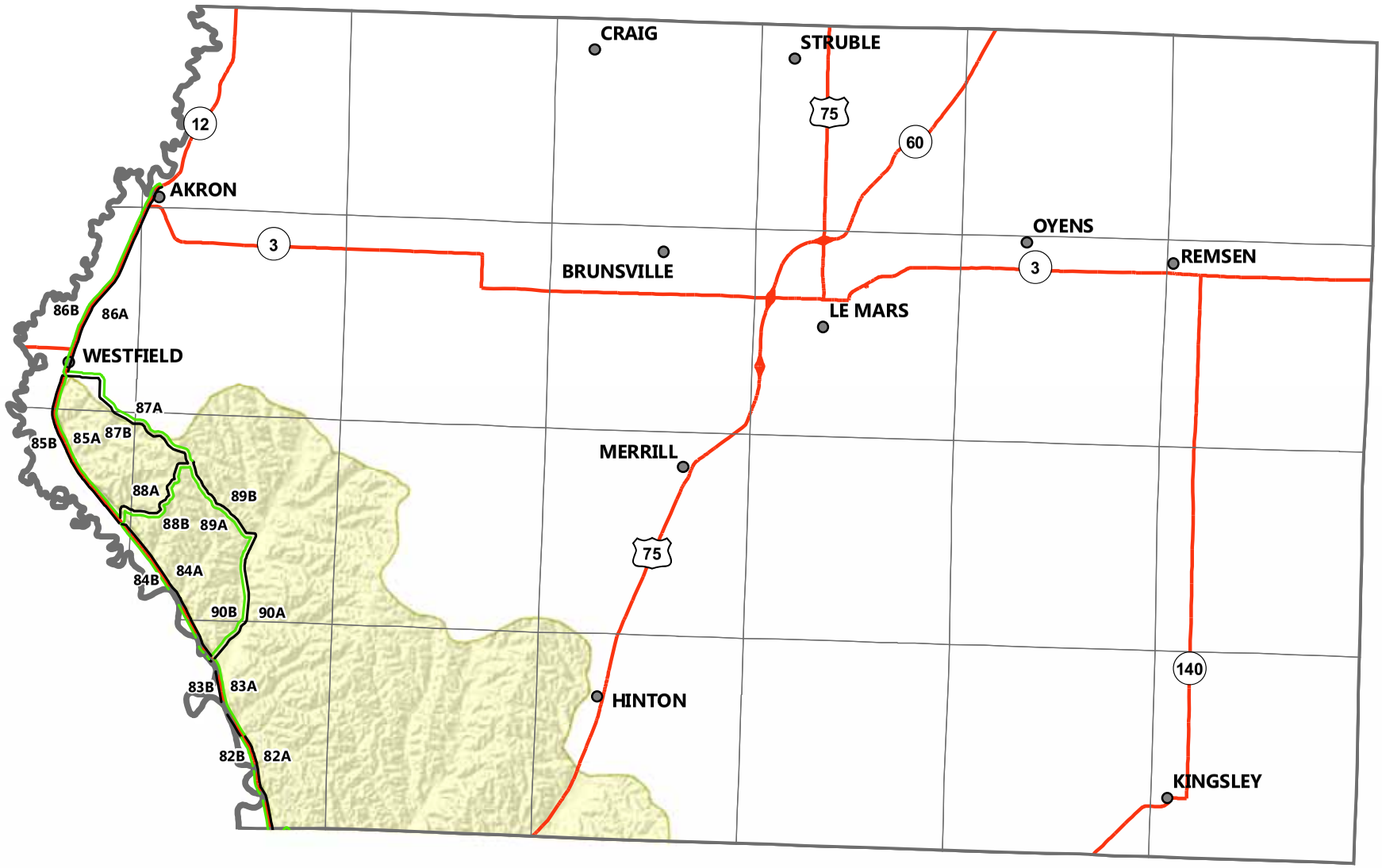
1. No development: if checked, no development was visible in the foreground on the segment-side.
2. Farm site development: if checked, farm site(s) were present in the foreground on the segment-side.
3. Single housing: if checked, single detached housing was present in the foreground of the segment-side.
4. Housing development: if checked, housing development was present in the foreground, including urban areas and planned housing developments.
5. Commercial Development: if checked. commercial development was present in the foreground of the segment-side.

# Byway Assessment Segments

## Plymouth County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department




84A Byway Segment Identification #
Township Line
Loess Hills Landform Region

0 1.25 2.5 5 7.5 Miles

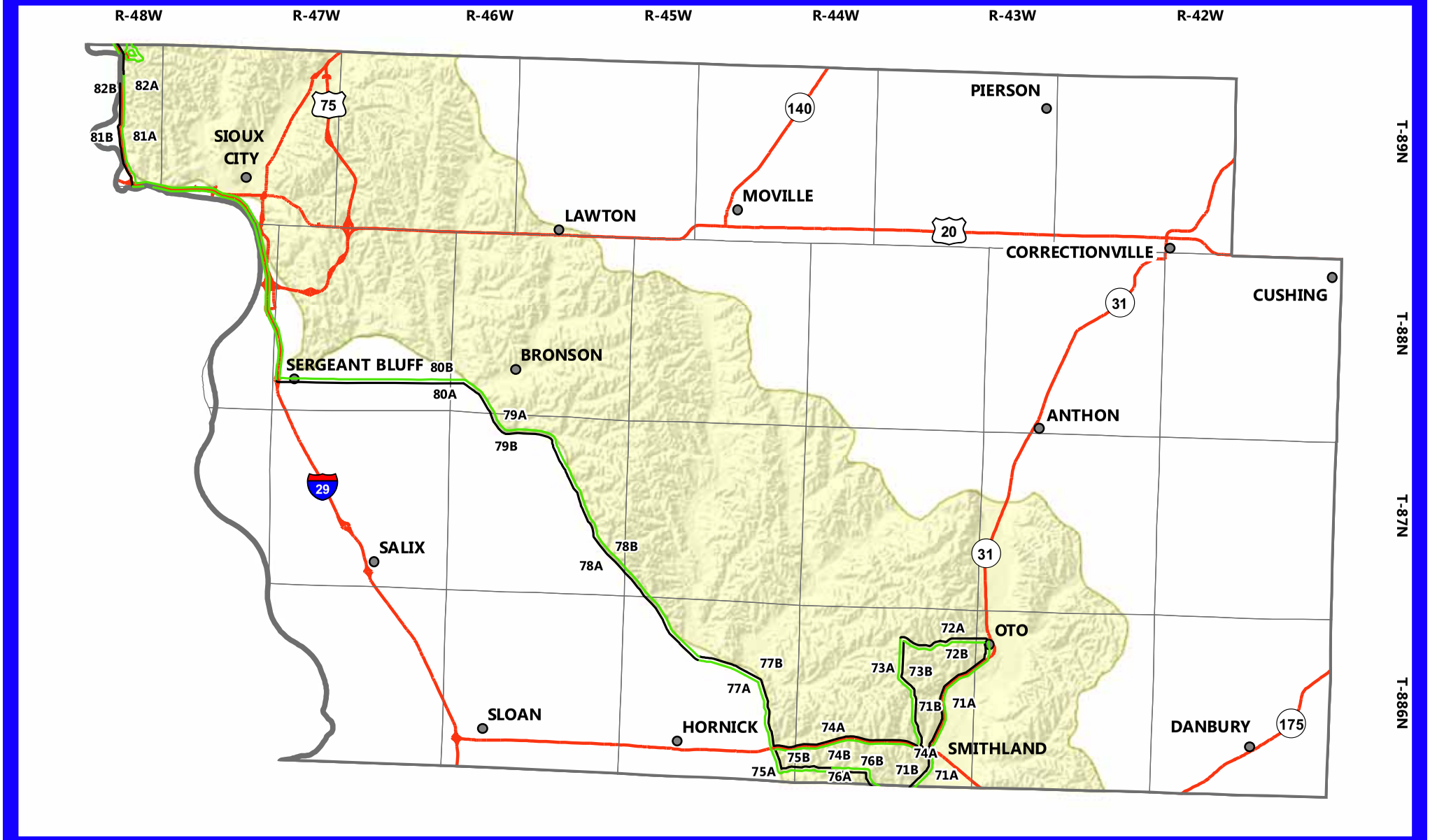
N W E S

# Byway Assessment Segments

## Woodbury County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department




84A Byway Segment Identification #
Township Line
Loess Hills Landform Region

0 1.25 2.5 5 7.5 Miles

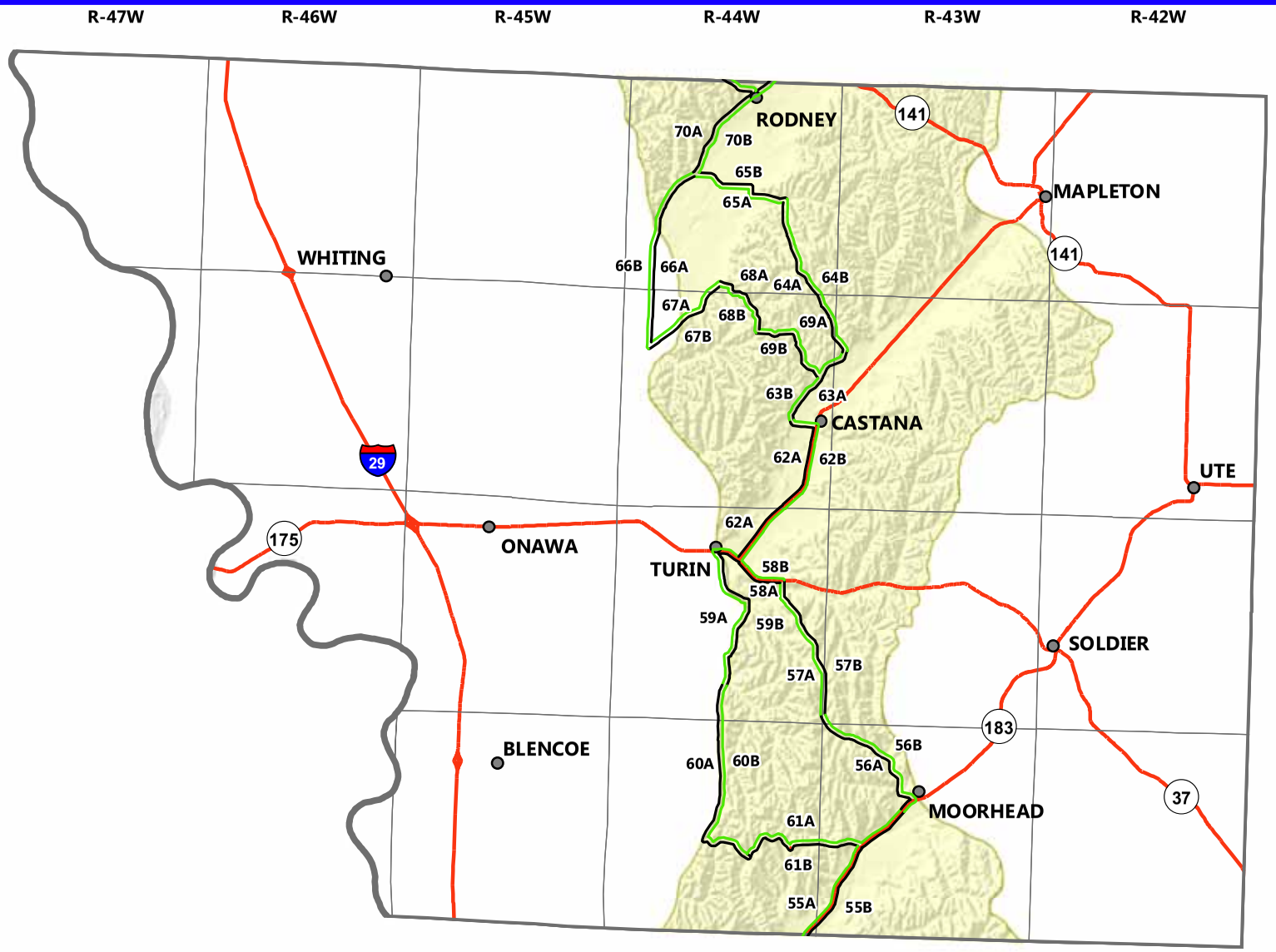
N
W E
S

# Byway Assessment Segments

## Monona County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department




84A Byway Segment Identification

Township Line

Loess Hills Landform Region

0 1.25 2.5 5 7.5 Miles

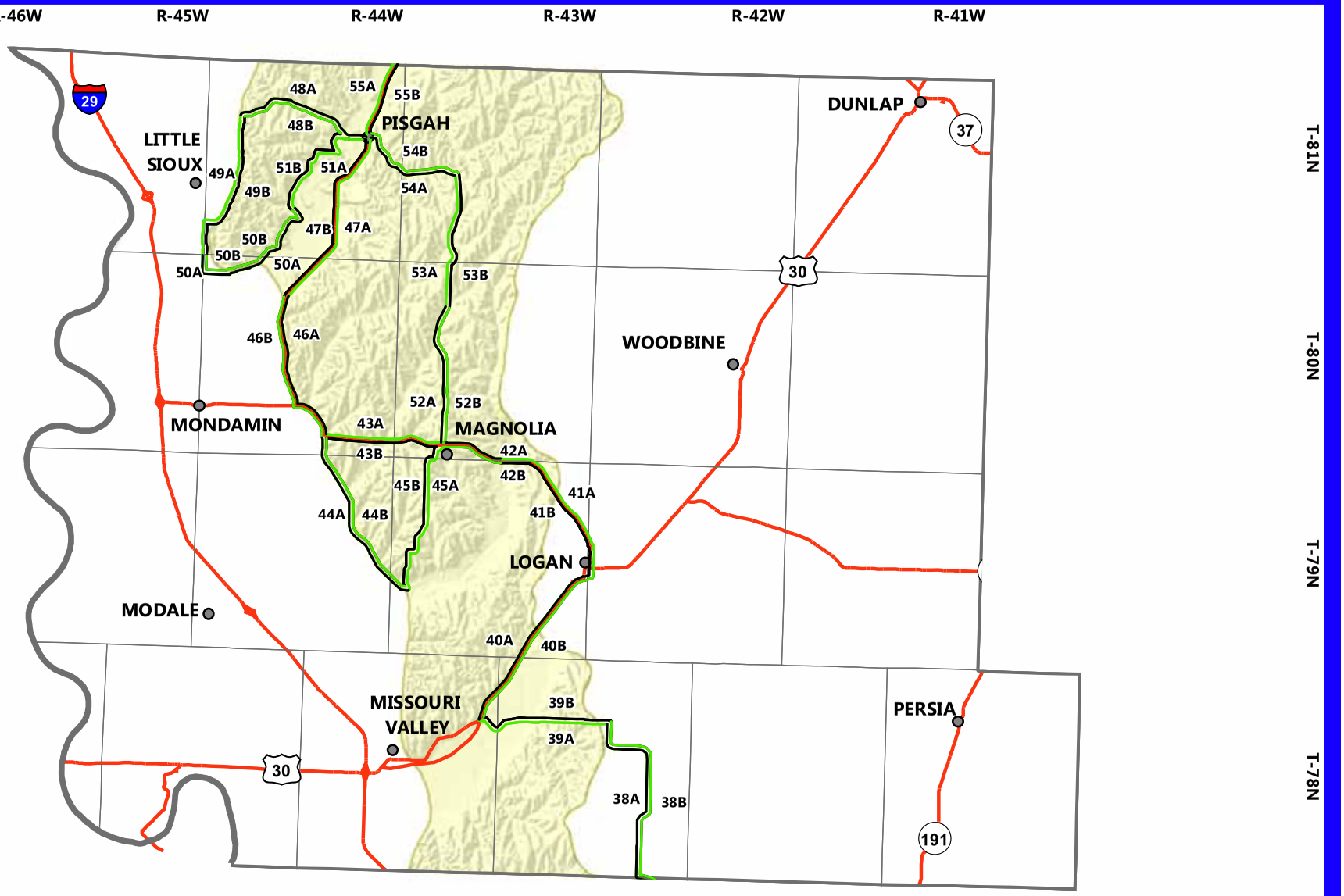
N W E S

# Byway Assessment Segments

## Harrison County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department




84A Byway Segment Identification #
Township Line
Loess Hills Landform Region

0 1.25 2.5 5 7.5 Miles

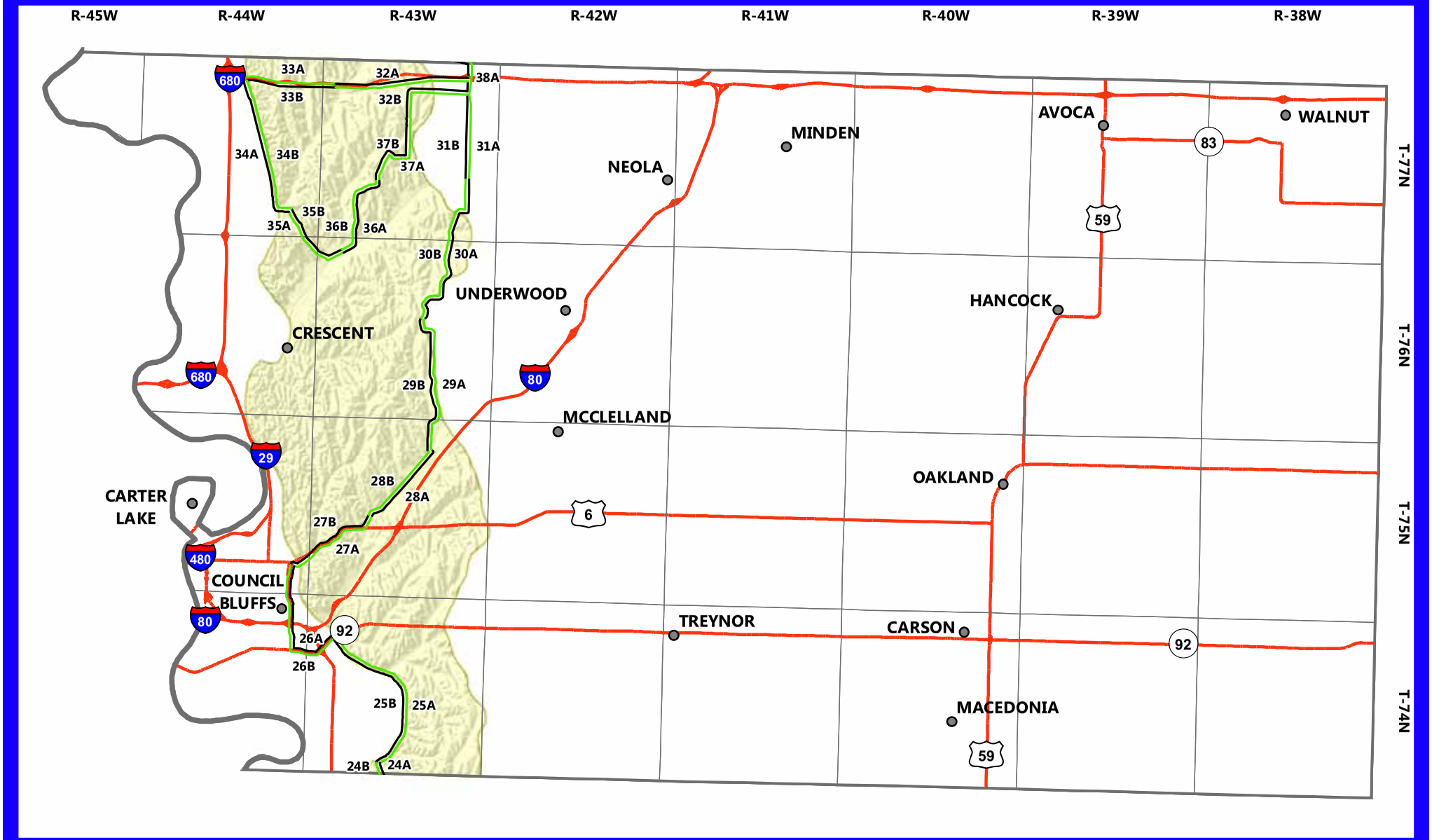
N
W E
S

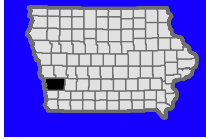
# Byway Assessment Segments

## Pottawattamie County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



84A Byway Segment Identification #

Township Line

Loess Hills Landform Region

0 1.25 2.5 5 7.5 Miles

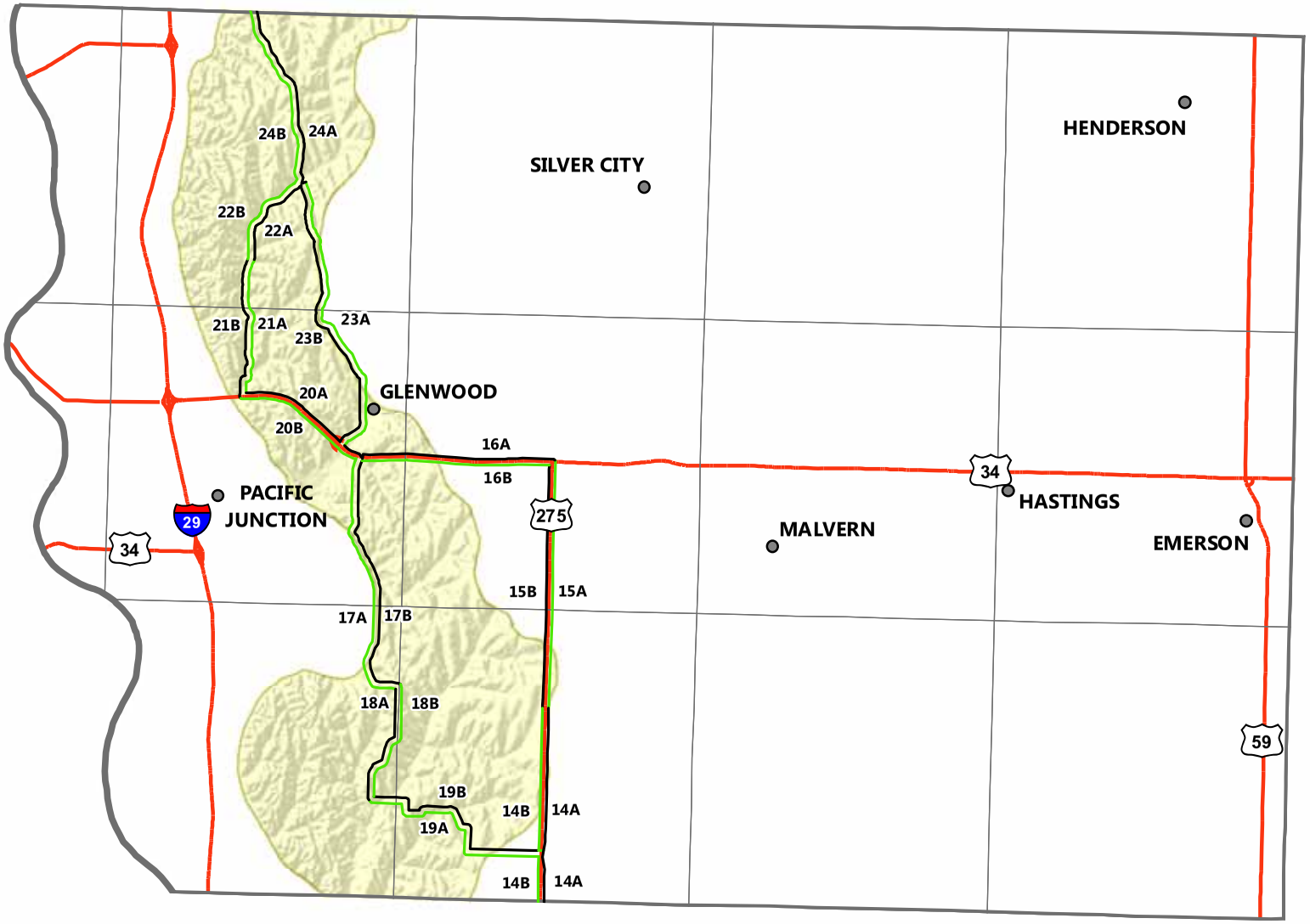
N W E S

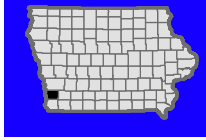
# Byway Assessment Segments

## Mills County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



84A Byway Segment Identification #

Township Line

Loess Hills Landform Region

0 1 2 4 6 Miles

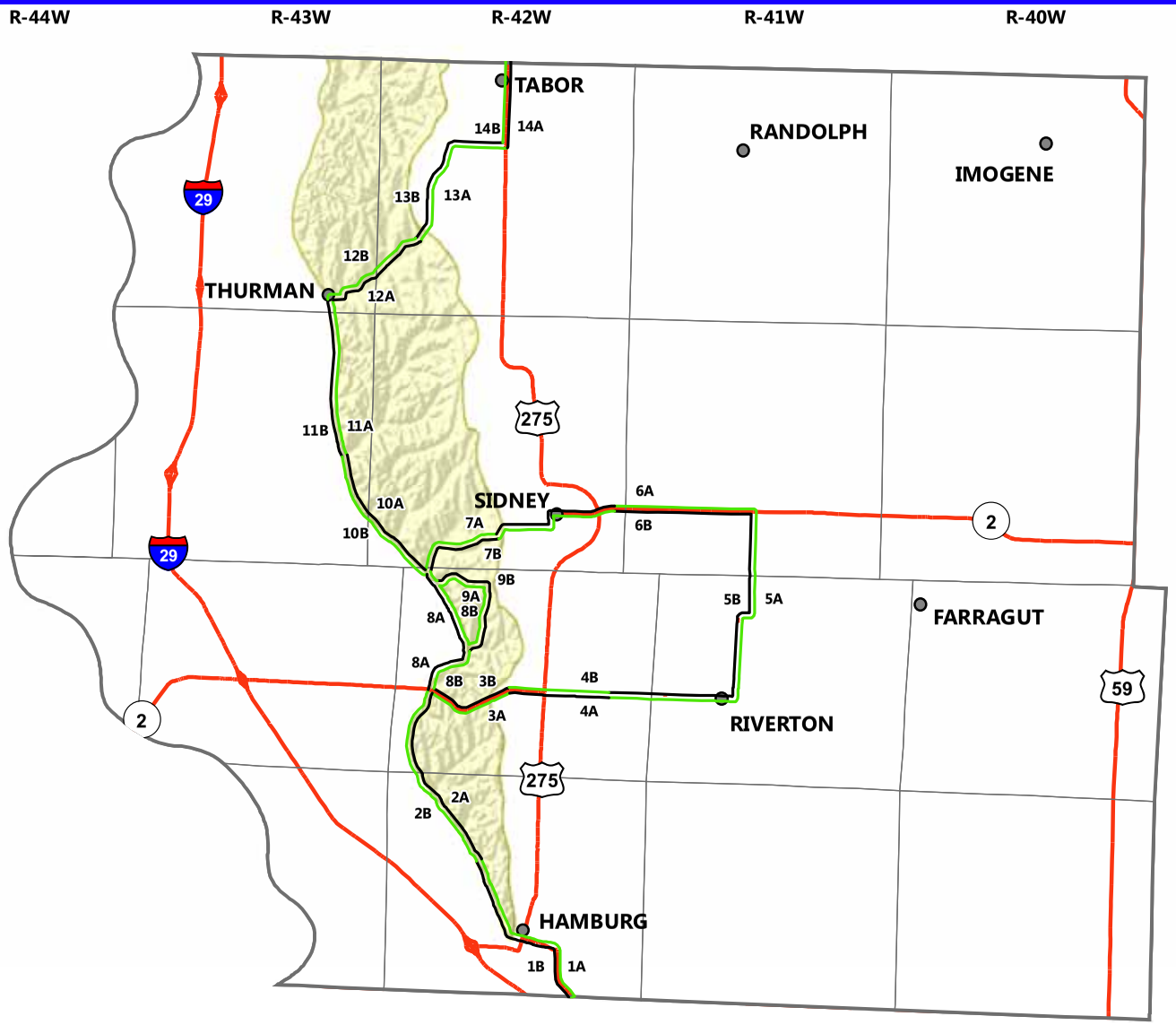
N W E S

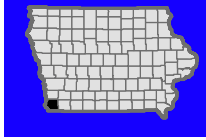
# Byway Assessment Segments

## Fremont County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



84A Byway Segment Identification #

Township Line

Loess Hills Landform Region

0 1.25 2.5 5 7.5 Miles

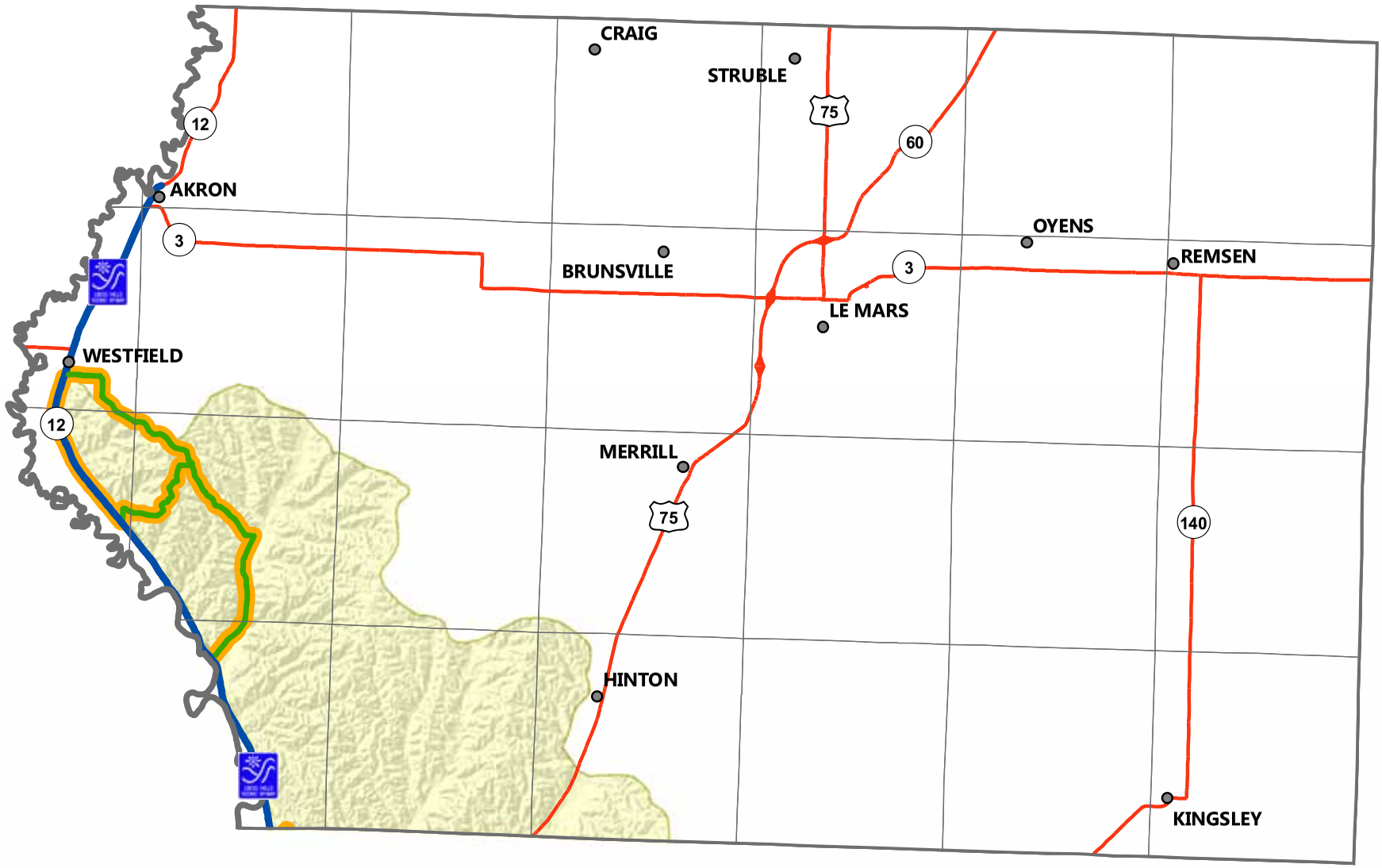
N W E S

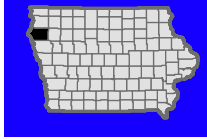
# Quality of Traveler Experience

## Plymouth County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
High Quality Travel Experience
Highways
Township Line
Loess Hills Landform Region

0 1.25 2.5 5 7.5 Miles

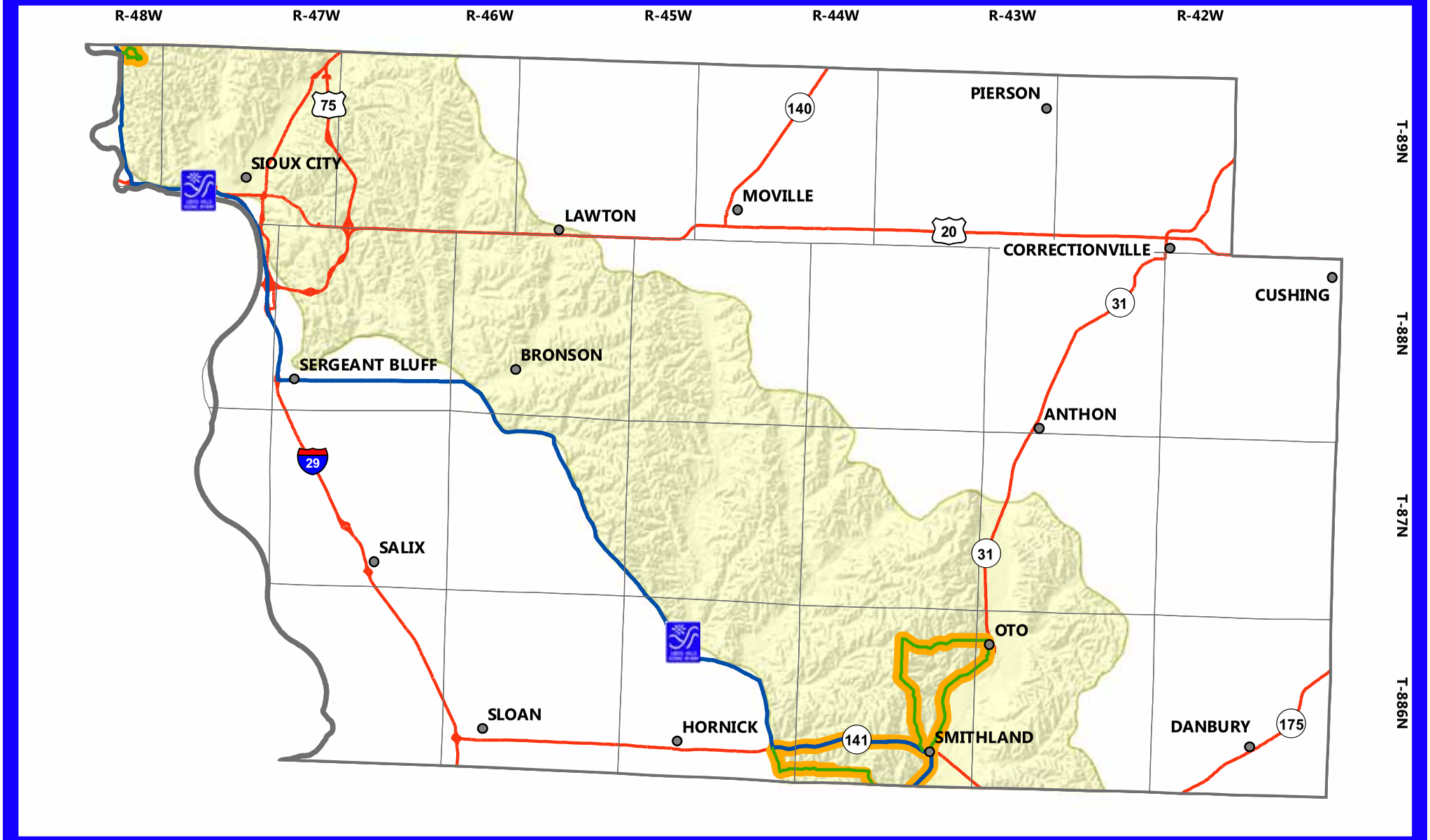
N W E S

# Quality of Traveler Experience

## Woodbury County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department




Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
High Quality Travel Experience
Highways
Township Line
Loess Hills Landform Region

0 1.25 2.5 5 7.5 Miles

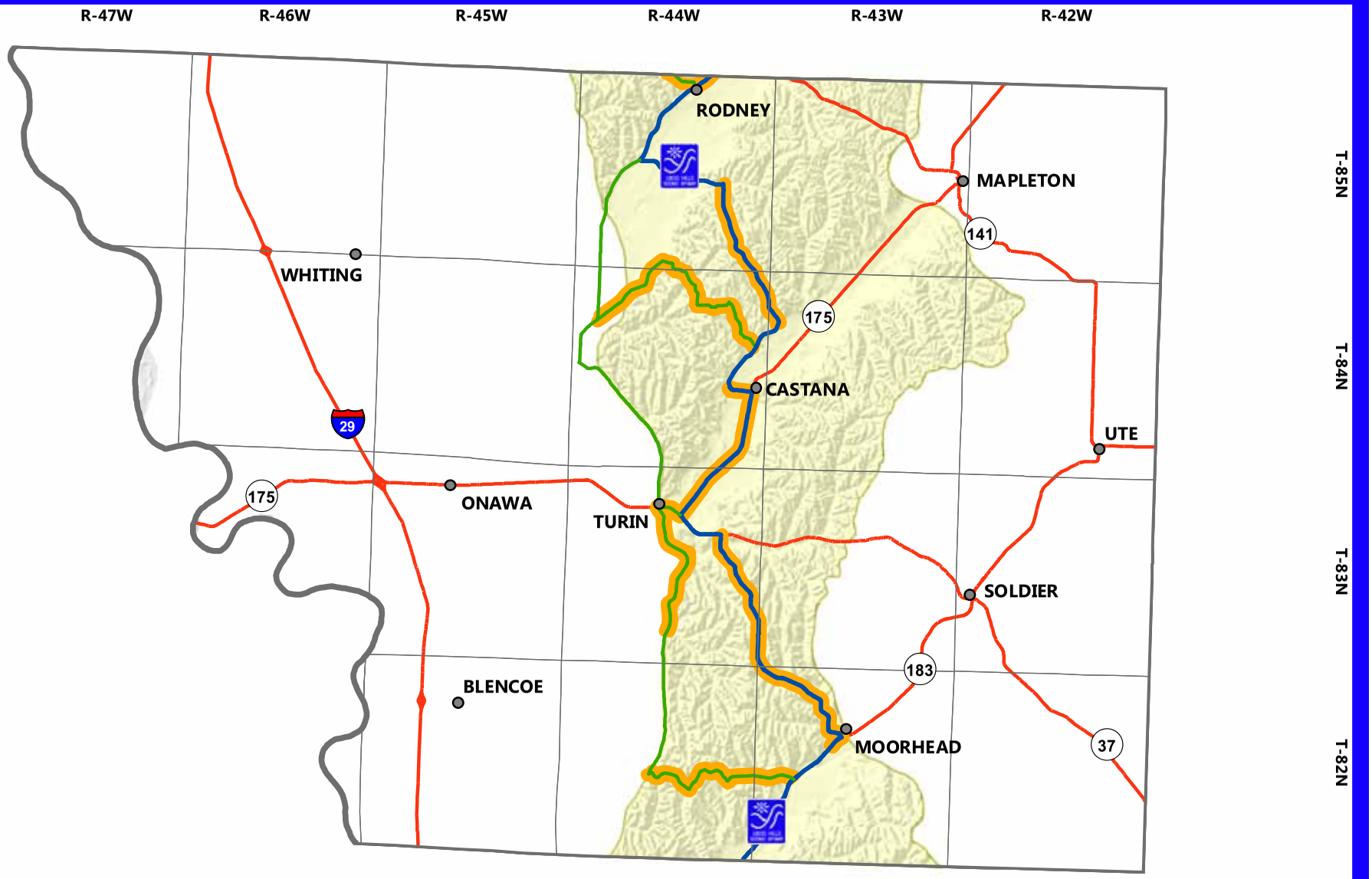
N W E S

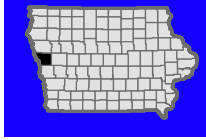
# Quality of Traveler Experience

## Monona County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
High Quality Travel Experience
Highways
Township Line
Loess Hills Landform Region

0 1.25 2.5 5 7.5 Miles

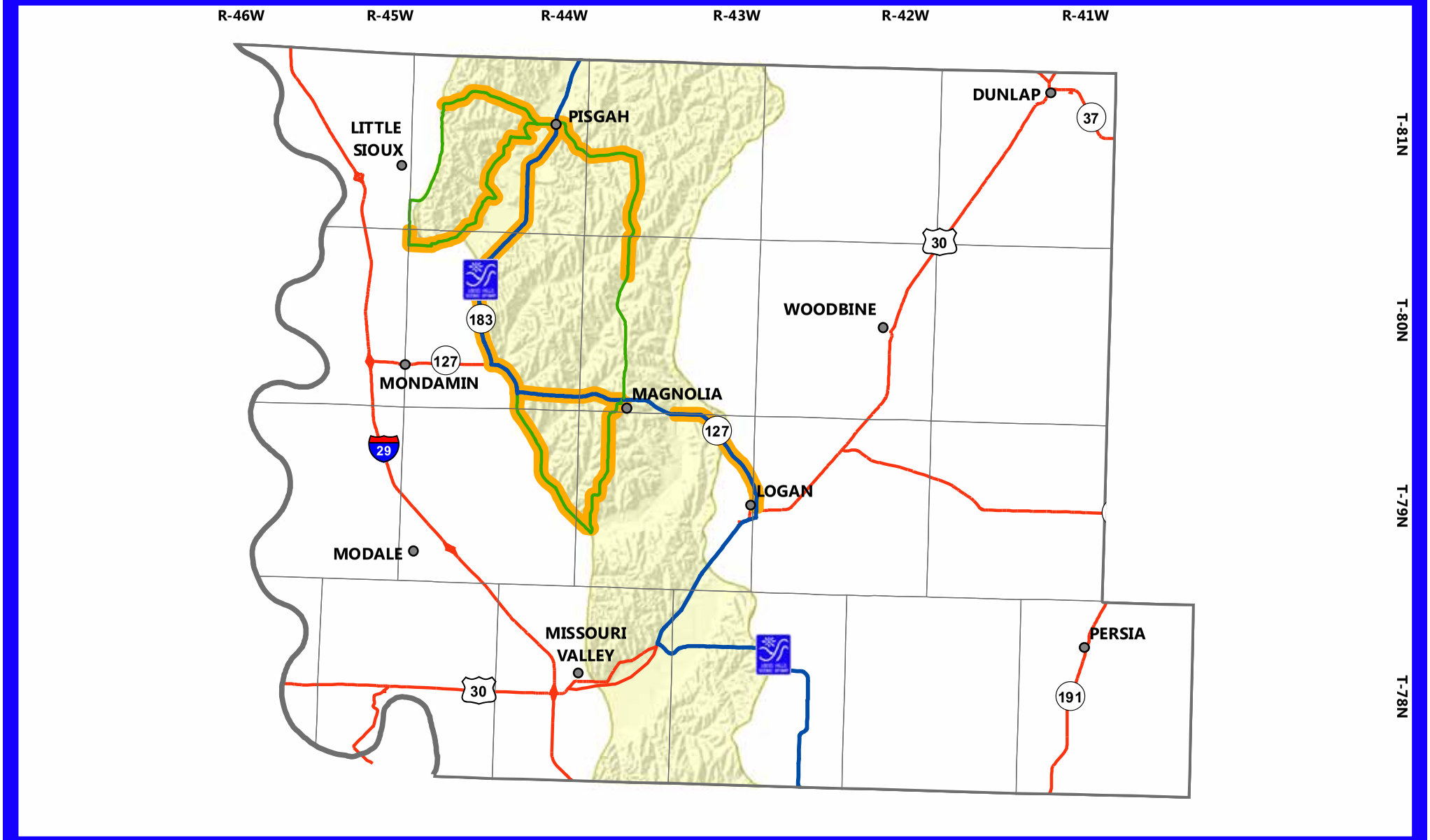
N W E S

# Quality of Traveler Experience

## Harrison County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department




Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
High Quality Travel Experience
Highways
Township Line
Loess Hills Landform Region

0 1.25 2.5 5 7.5 Miles

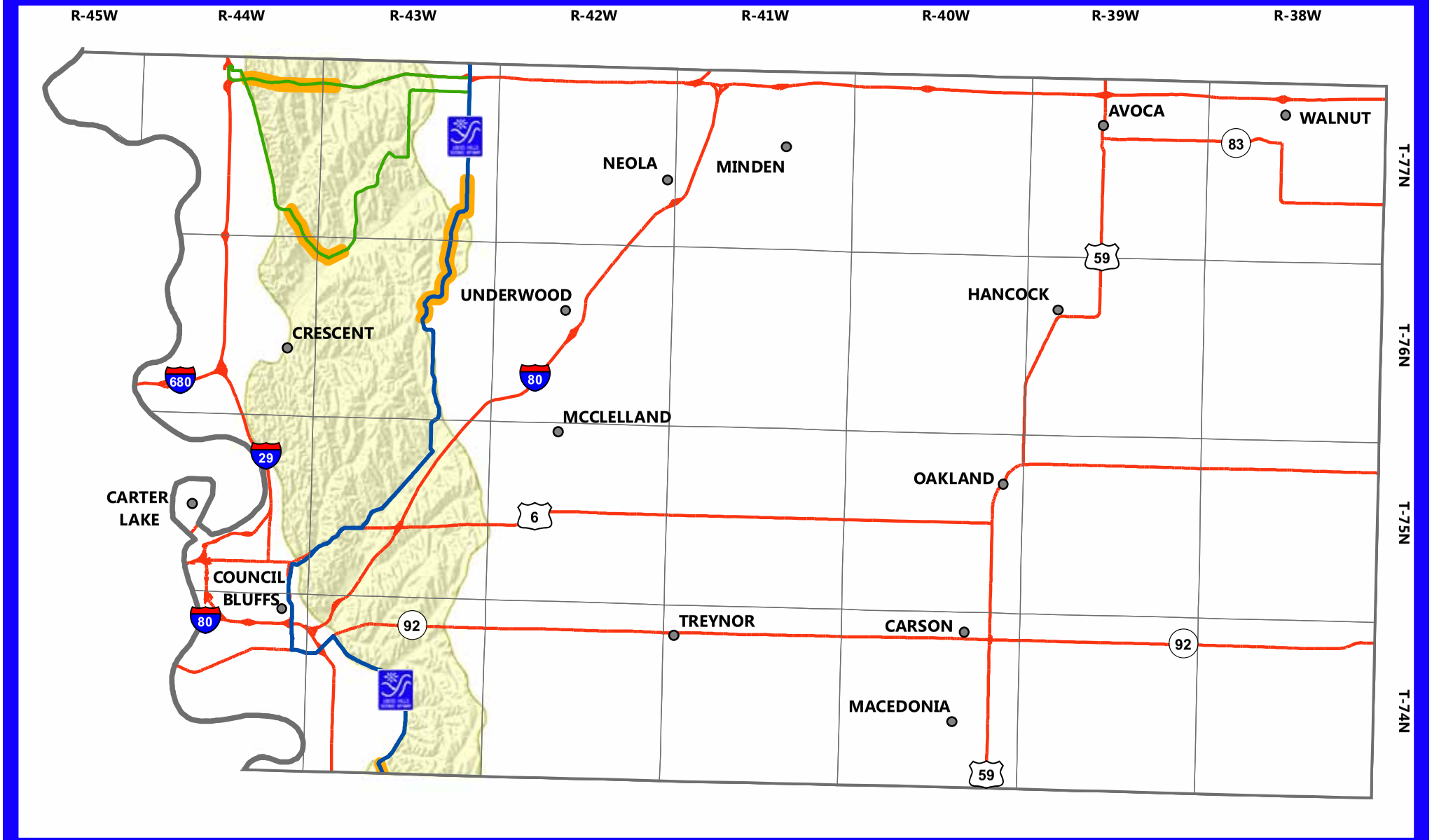
N W E S

# Quality of Traveler Experience

## Pottawattamie County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department

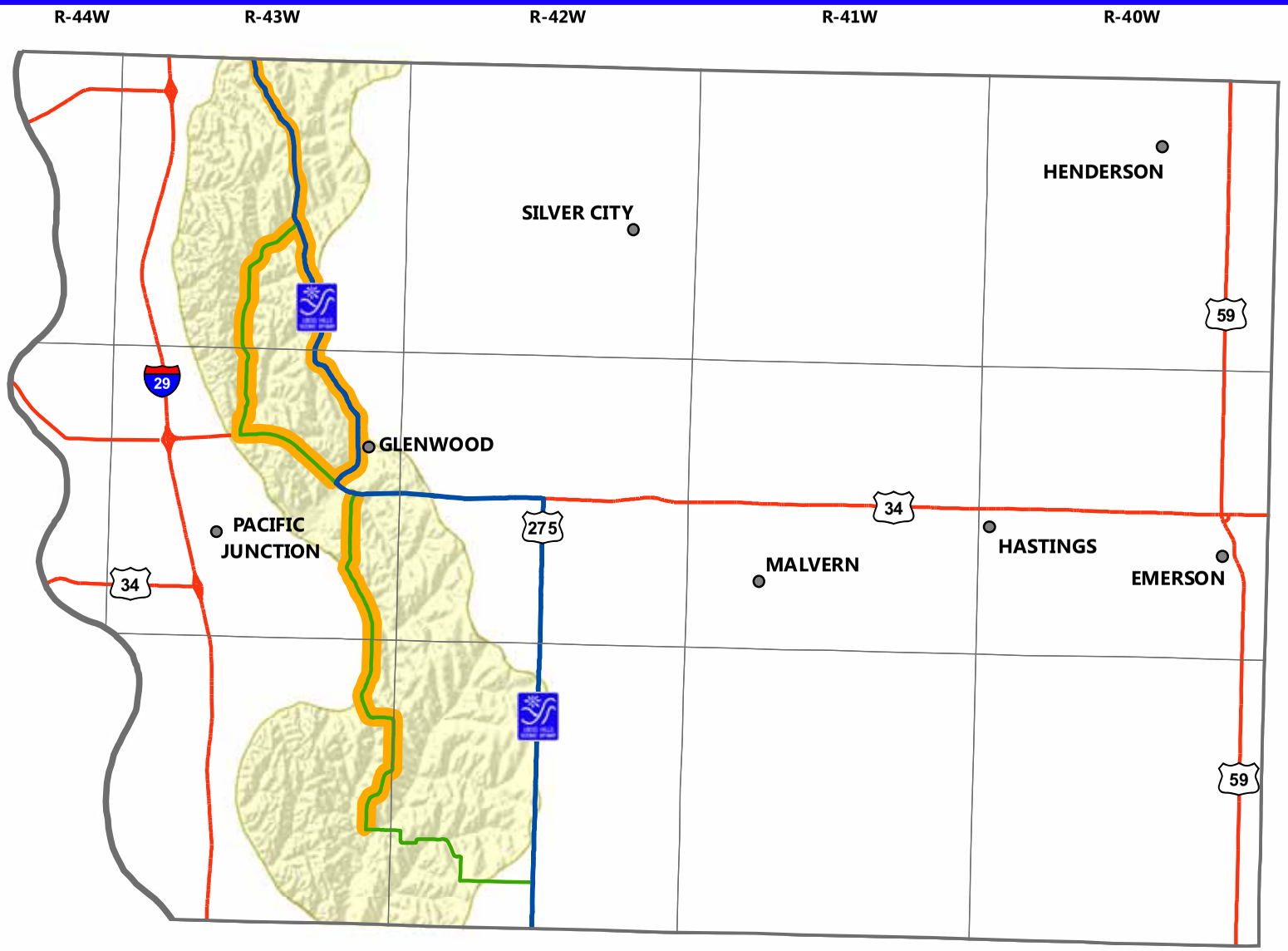


# Quality of Traveler Experience

## Mills County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department




Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
High Quality Travel Experience
Highways
Township Line
Loess Hills Landform Region

0 1 2 4 6 Miles

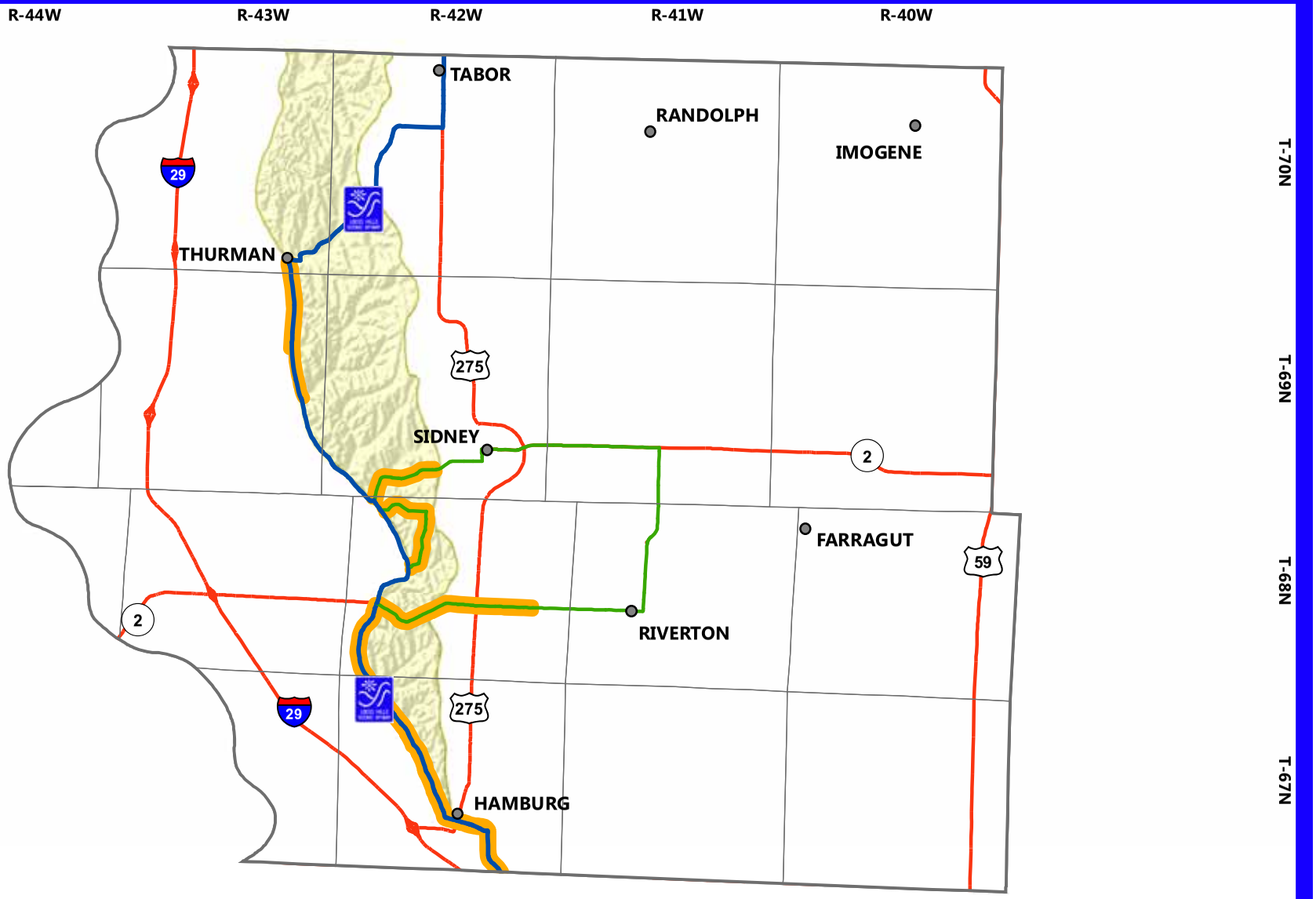
N W E S

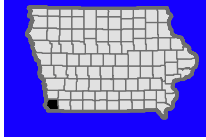
# Quality of Traveler Experience

## Fremont County, IA

*Loess Hills Scenic Byway Corridor Management Plan*

Source: Golden Hills Resource Conservation & Development
Prepared By: Pottawattamie County GIS Department



Loess Hills Scenic Byway Spine
Loess Hills Scenic Byway Loop
High Quality Travel Experience
Highways
Loess Hills Landform Region
Township Line

0 1.25 2.5 5 7.5 Miles

N W E S

## Managing Roadsides and Entryways

Roadside management activities in the Loess Hills Scenic Byway Corridor should be directed toward establishing and maintaining safe, stable and low maintenance community entryways and roadsides that are attractive to residents and visitors. The Iowa DOT numerous counties and communities cooperate in the implementation of a state-wide Integrated Roadside Vegetation Management (IRVM) program.

The IRVM program combines state and local resources and expertise to improve the cost effective management, environmental benefits, safety, and attractiveness of roadsides. IRVM practices focus on the use of native vegetation, integrated weed control, and soil conservation measures to improve the condition of roadsides. Currently, five of the seven counties in the Loess Hills Scenic Byway Corridor participate in the IRVM program. Harrison and Plymouth Counties are not actively involved with the program at this time.

An important application of roadside management practices is the enhancement of community entryways. A community entryway is the land that is visible from a highway which connects the countryside with a community. It can also include important places associated with major thoroughfares within a community which connect one neighborhood or land use with another. These highways, county roads or streets provide the physical and visual environments for communities to make first impressions on visitors and lasting memories for residents.

**THE LOESS HILLS OF IOWA**
*An American Treasure Unique in the World*

Entryways provide opportunities to express the image or character of communities in the Loess Hills Scenic Byway Corridor. The unique features of the Loess Hills should be integrated into each community in the Corridor. One way of doing this is by enhancing community entryways with native vegetation. Using native vegetation at the entryway of a community can create and reinforce its association with the Loess Hills. Adding other elements to the entryway design can then express each community's individual character. In addition to the resources available through the IRVM program, communities can seek professional assistance in designing entryways from landscape architects and other designers.

### *Managing Roadsides and Entryways Actions*

**Roadside Management Action #1**

Counties and communities in the Loess Hills Scenic Byway Corridor should work together with Iowa DOT to more fully develop the IRVM program in the region. Particular emphasis should be placed on the application of IRVM practices on roadsides along the Loess Hills Scenic Byway. Communities should be encouraged to assess their aesthetic appeal, especially at their entryways. Entryways should convey the message to travelers that a community is an integral part of the Loess Hills Scenic Byway Corridor.

# Loess Hills National Scenic Byway

# Marketing Plan 2009

Photo courtesy of Don Poggensee

Western Hills Resources
December 2008

**Table of Contents**

Executive Summary ..... 1

Overview/Background ..... 2

Partnerships ..... 3

SWOT Analysis ..... 4

Situation Analysis
- Economic Impact ..... 5
- Target Markets ..... 6
- Iowa Welcome Centers ..... 7
- Visitors Demographics ..... 8

Opportunities for Growth ..... 11
- Market Segment ..... 11
- Niche Markets ..... 12

General Marketing Goals ..... 18

Action Plans ..... 19
- Internet/Website ..... 19/20
- Virtual Connections ..... 20
- Advertising ..... 21
- Events ..... 22
- Promotion and Public Relations ..... 23
- Budget ..... 24

# Executive Summary

This Marketing Plan for the Loess Hills National Scenic Byway provides a detailed action plan designed to increase the number of people visiting the Byway by expanding our market reach, targeting niche markets, addressing frequency and adding to our marketing mix.

The Loess Hills National Scenic Byway Council has nine years experience and many successes in establishing working partnerships and programs to accomplish the Corridor Management Plan objectives written in 2000.

The Byway Council is ready to tackle new challenges and commit to accomplishing new goals to enhance the byway, increase visitors and to develop creative education programs for all ages, (i.e., home schooled students work at one Iowa Welcome Center learning more about Iowa and have passed the competency test to become certified Iowa Traveler Counselors).

While some public relations, advertising and promotion have been accomplished to date, the 2008 Corridor Management Plan establishes marketing priorities to increase visitor numbers for a 12-18 month period. Some strategies will have an impact continuing beyond the timeline of this plan.

A priority goal for the Byway Council is to seek "All American Road" designation from the Federal Highway Administration. This marketing plan includes a Strengths Weaknesses, Opportunities (SWOT), and Threats analysis, a customer profile, identifies target markets and includes advertising and promotion strategies to assist the leadership of the Loess Hills Scenic Byway Council.

Attracting increasing numbers of visitors, tracking the success of the advertising plan and working with Byway attractions to ensure delivery of the highest quality customer service will present challenges for the volunteer committee and limited number of staff. At the same time, we believe the Loess Hills National Scenic Byway Council, attractions and event planners are ready to celebrate our success.

**Marketing Plan Rationale:** The Byway is the impetus to encourage local preservation and the "signature attraction" to increase visitor numbers and improve the economy for the families and communities within the Loess Hills.

## Overview:

The **Mission** of the Byway Council is "To provide a high quality experience to travelers on the Loess Hills National Scenic Byway."

The **Marketing team's goal** is to "Attract visitors to the Loess Hills National Scenic Byway to enjoy the unique natural, archeological and scenic qualities of the Loess Hills landform by offering recreational, sightseeing and event opportunities."

**Brand:** This is the only place in North America to see this unique loess hills landscape.

**Position statement:** We offer diverse activities in a safe, unique nature-based environment.

### Background:

Flanking Iowa's western border, the Loess Hills National Scenic Byway passes through a "one-of-a kind" land formation of loess soil 200 feet in height and 200 miles long from north of Sioux City, Iowa to St. Joseph, Missouri. Comprising over 640,000 acres of land in western Iowa, loess soil deposits at this depth can be found nowhere else in the world, but China.

The Loess Hills Scenic Byway was initiated in the early 1990's by the Golden Hills Resource Conservation and Development organization. The Loess Hills landform is located in seven Iowa counties. Two hundred residents, organizations and government agencies began the process of identifying the most scenic routes throughout the expanse of the two hundred and twenty-mile landform. Once agreement was reached with local residents and approval of the routes secured from the county engineers and Iowa Department of Transportation, Byway identification and directional signs were posted throughout the Loess Hills Scenic Byway.

Work began immediately on development of a corridor management plan for the Byway. Numerous professionals contributed expertise in the areas of conservation, protection, enhancement, communication, visitor services and marketing.

- The Loess Hills Scenic Byway was officially designated an Iowa Scenic Byway in 1999.
- In 2000, the Federal Highway Administration designated the Loess Hills as a National Scenic Byway .

Thirteen volunteer members from Loess Hills counties, regional organizations and government agencies determine policies, establish goals and set priorities to accomplish the Loess Hills Corridor Management Plan. This Council was established in 2000 and is supported by the Golden Hills Resource Conservation and Development, Inc. as the Byway leader with a paid coordinator, and the Western Iowa Tourism Region serving as the Marketing coordinator.

The Loess Hills Byway offers scenic vistas, rare prairie flora and fauna, quaint rural communities and public lands offering many opportunities for visitors to experience life in this unique place.

## Partnerships:

The Byway Council has developed both long-standing and short-term partnerships to accomplish common goals. Some examples include:

Federal Highway Administration's Byway Resource Center
Iowa Department of Transportation—Byway Program
National Park Service
U.S. Fish and Wildlife Service
Iowa Department of Economic Development
Iowa Tourism Office
Western Iowa Welcome Centers
Iowa Department of Cultural Affairs
Western Iowa Tourism Region
Convention and Visitor Bureaus
Chambers of Commerce
Loess Hills Alliance
Local Economic Development organizations
County Conservation Boards
County Boards of Supervisors
Planning and Zoning Commissions
Local Historical Societies
Businesses
Attractions
Loess Hills Hospitality Association
Public and Private Foundations
Loess Hills wineries
State Historical Society
Office of the State Archeologist
Western Iowa Wine Trail
Western Iowa Grape Growers

The Scenic Byway Council, with the financial assistance of grant funding, local contributions and partnerships, has made remarkable progress in the areas of interpretation and visitor services. Entrance portals, welcome and interpretive centers, new outdoor recreation facilities and personal communication with visitors at the Iowa Welcome Centers have enhanced the visitor experience on the Byway.

## Situation Analysis

### Marketing SWOT Synopsis:

Strengths

⇒ Unique—one-of-a-kind
⇒ Nature-based
⇒ Diversity of attractions
⇒ Visual quality
⇒ Many recreational opportunities
⇒ Several ways to access the landform (car, bicycle, motorcycle, RV, hiking)
⇒ Family-friendly destination
⇒ Within one-day of major metropolitan areas
⇒ Good value for the $
⇒ National Historic Trails
⇒ National Wildlife Refuge in close proximity
⇒ Missouri River in close proximity
⇒ National Byway status
⇒ Significant archaeology
⇒ Significant cultural areas
⇒ People do not have to travel the entire Byway to learn about the Loess Hills
⇒ Topography changes throughout the Byway
⇒ Two Interstate Highways I-29 and I-80
⇒ Several marketing partners
⇒ Good visitor services

Weaknesses

⇒ What makes the hills unique isn't easily visible
⇒ Not visually magnificent (like mountains or ocean)
⇒ Large area
⇒ Poor website
⇒ Lack of awareness
⇒ Less population and promotion of the west side of the state
⇒ Iowa is not typically a travel destination

Opportunities

⇒ Several marketing partners
⇒ Increase promotion opportunities through local partnerships
⇒ Add attractions relevant to the Loess Hills (archeological interpretive center)
⇒ Confirm Brand Identity
⇒ Interactive website that takes advantage of new technology
⇒ Podcasts, Blogs, Message Boards
⇒ E-newsletters
⇒ Special interest group enthusiasm—niche marketing
⇒ Good area for small business development
⇒ Entice Interstate Highway travelers to travel the Byway instead
⇒ People take shorter trips, closer to home and travel by automobile

Threats

⇒ Competition for Travelers time
⇒ Competition from other Byways
⇒ Development pressure/random development
⇒ Lack of funding
⇒ Volatile gas prices
⇒ Volatile economy
⇒ Visitor destruction/mitigation
⇒ Fill dirt removal

## Situation Analysis Continued

The Byway Council is an active and effective group of volunteers that continues to develop good working relationships with many partners capable of enriching the Byway experience for visitors. In addition, under the leadership of the Golden Hills RC&D, the Council continues to improve the quality of life for residents so that future generations will continue to live, work and spend leisure time in the Loess Hills of Iowa.

The diversity of attractions and activities extends our market share to include not only visitors interested in eco-tourism but those interested in shopping in quaint, small town boutiques, attending performing arts and other events, pursuing their interest in history or a favorite recreational past-time.

Strategic planning and implementation of educational programs and facilities, creating reliable visitor services and developing critical partnerships with government agencies, citizens, community and state-wide organizations, has created a comprehensive effort to sustain the Loess Hills National Scenic Byway as a state, regional and nationally significant attraction.

"If we build it, they will come" is a dangerous assumption. Without the marketing and advertising assistance of the America's Byways, Iowa Tourism office, Western Iowa Tourism Region and several Convention and Visitors Bureaus, the growth of tourism in the Loess Hills would not be as significant.

For the purposes of understanding economic impact, target markets and creating a customer profile for the Loess Hills National Scenic Byway, secondary research conducted by the Travel Industry of America and the Iowa Tourism Office's 2007 Iowa Welcome Center study was relied upon since this information is the most up-to-date. All data used from these sources was also cross-referenced with the Loess Hills Scenic Byway Business and Visitor surveys, completed in 2003, to determine if any significant differences would cause our conclusions to be inconsistent with previous information obtained from the Loess Hills study.

Tourism is a growing and vibrant industry in the state of Iowa. Iowa tourism generated expenditures in 2007 grew 7.6% over 2006, outpacing the national average of 5.7% according to the Iowa Tourism Office at the Iowa Department of Economic Development. Western Iowa and the Loess Hills also continue to increase the tourism dollars generated.

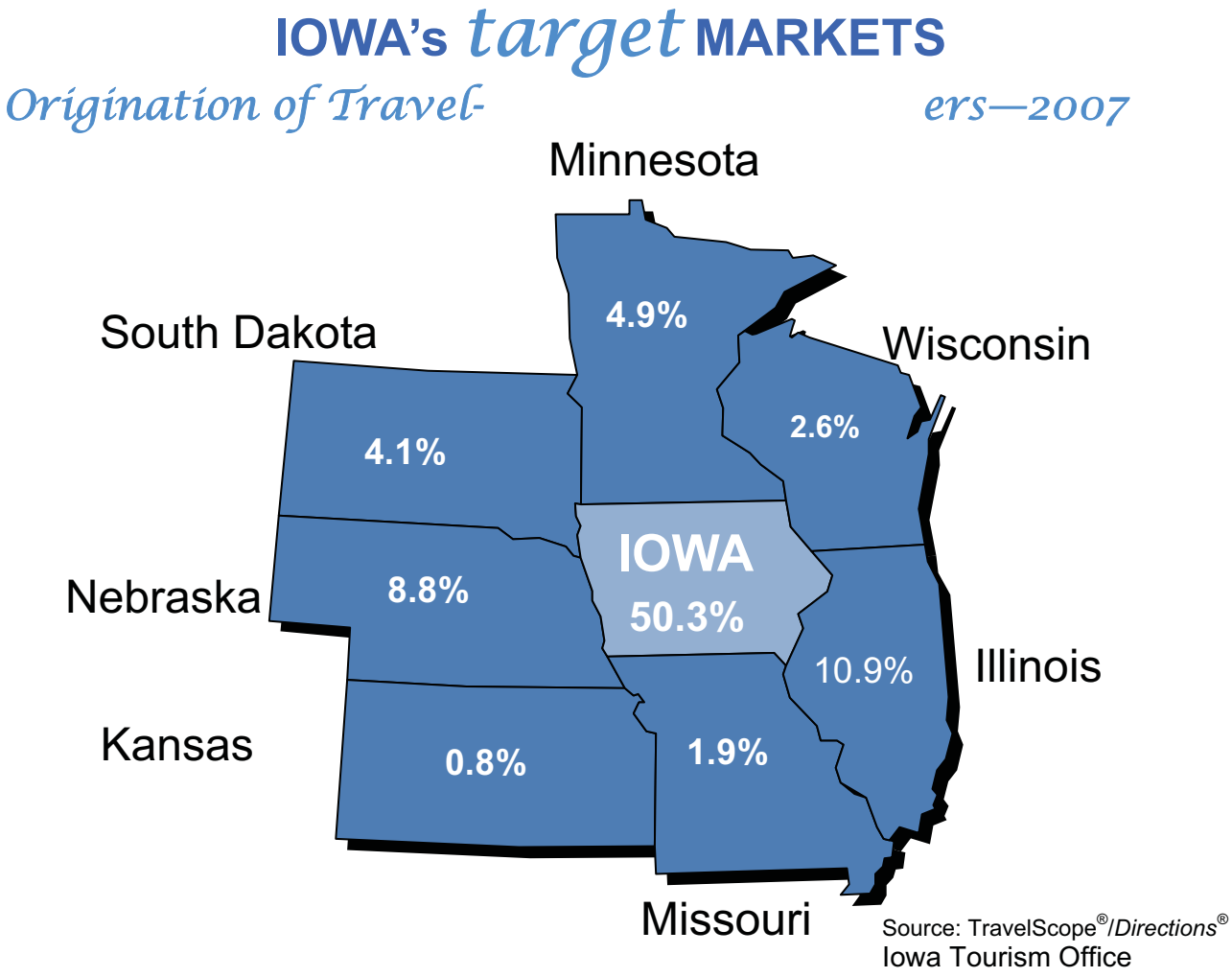
| County | Expenditures ($ Millions) 2000 | Expenditures ($ Millions) 2007 | Percentage of increase 2000-2007 |
|---|---|---|---|
| Fremont | 8.82 | 12.08 | 31% |
| Harrison | 15.45 | 23.01 | 32% |
| Mills | 4.73 | 6.30 | 25% |
| Monona | 12.93 | 17.48 | 26% |
| Plymouth | 13.21 | 19.09 | 31% |
| Pottawattamie | 186.57 | 259.79 | 27% |
| Woodbury | 194.72 | 217.45 | 10% |

## Situation Analysis Continued

According to the 2007 County-by-County Economic Impact Study prepared by the Travel Industry Association of America, tourism expenditures in the seven Loess Hills counties has grown an average of 26% since the Byway's national designation in the year 2000.
*See chart on previous page.

National Travel trends indicate that travel plans are made close to the time of travel, travelers are staying closer to home, depend more on automobile as their mode of transportation, look for savings and value, seek safe environments and plan extended weekends rather than the traditional two-week family vacation.

Iowa and the Loess Hills are positioned to take advantage of these travel trends and have targeted markets close to home. A chart from the Travel Federation of Iowa Fast Facts Booklet (2009) shows current origins of Iowa travelers. The Loess Hills Scenic Byway marketing committee will target the states of Iowa, Minnesota, South Dakota and Nebraska as primary markets. Missouri and Kansas will be secondary market states. Participation in cooperative advertising and promotion efforts with the State tourism office include all states listed below.

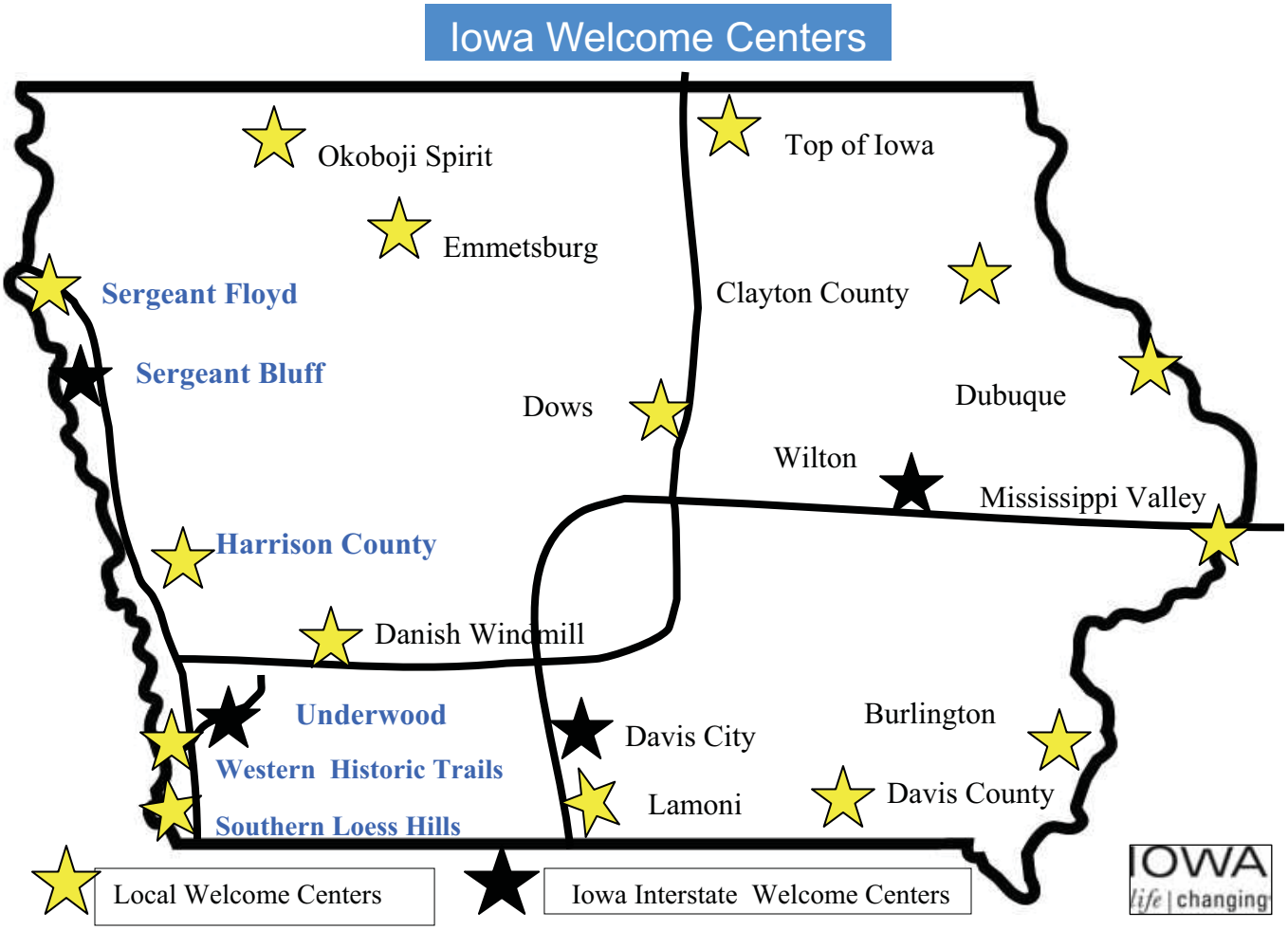


## Situation Analysis continued

We will study the validity of using state tourism office numbers for the states of Kansas and Missouri as they relate to the Byway and will work with the Council Bluffs Convention and Visitors Bureau to ascertain the feasibility of increasing our presence in both adjoining states.

The Loess Hills National Scenic Byway is fortunate to have six Iowa Welcome Centers located on or near the Byway. Two centers are owned by the Iowa Department of Transportation, with staffing managed by the Iowa Tourism office. Both the Underwood and Sergeant Bluff Welcome Centers are located on Interstates. The Western Historic Trails Center located in Council Bluffs is located on both Interstates 29 and 80. This center was built in partnership with the National Park Service and is owned and managed by the Iowa Department of Cultural Affairs. The additional three centers, Sergeant Floyd in Sioux City (I-29), Harrison County in Missouri Valley and the Southern Loess Hills near Sidney, are owned locally and designated by the Iowa Tourism Office as Iowa Welcome Centers. The Loess Hills Hospitality Association also operates a visitors center with a gift shop featuring Loess Hills products in Moorhead.

The purpose of identifying welcome centers in this marketing plan is two-fold, 1) Travel Counselors at our Iowa Welcome Centers are successful in extending the stay of 29% of the travelers visiting their centers. 2) The six centers located in the Loess Hills also participate in a survey program for the Iowa Tourism office providing us with valuable data.



## Situation Analysis Continued

The Iowa Welcome Centers located in the Loess Hills serve an average of 58,417 travel parties each year.

**Welcome Center Visitation Numbers 2001 - 2007**
**Travel Parties**

| | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | Total |
|---|---|---|---|---|---|---|---|---|
| **Harrison County, Missouri Valley** | 6,306 | 5,919 | 5,854 | 4,801 | 6,047 | 5,338 | 5,205 | 39,470 |
| **Sergeant Bluff, Interstate** | 17,230 | 16,263 | 17,813 | 12,838 | 16,431 | 16,684 | 13,176 | 110,435 |
| **Sgt. Floyd, Sioux City** | 8,726 | 8,531 | 10,850 | 9,425 | 11,358 | 7,815 | 9,206 | 65,911 |
| **Southern Loess Hills** | n/a | n/a | n/a | n/a | n/a | 212 | 5,488 | 5,700 |
| **Underwood, Interstate** | 13,492 | 12,758 | 12,760 | 13,265 | 9,486 | 11,383 | 11,988 | 85,132 |
| **Western Historic Trails, Council Bluffs** | 6,279 | 5,667 | 4,695 | 5,208 | 7,420 | 6,767 | 7,819 | 43,855 |
| **Totals** | 52,033 | 49,138 | 51,972 | 45,537 | 50,742 | 48,199 | 52,882 | **350,503** |

Each Iowa Welcome Center has trained staff members that are certified as Iowa Travel Counselors by the Iowa Tourism office, Iowa Department of Economic Development.

We believe that the Loess Hills Scenic Byway proximity to the two Interstate systems and our strategically placed Welcome Centers provide an excellent opportunity to entice those visitors with no prior knowledge of the Loess Hills, to drive on the Byway. Also with highly visible kiosks at interstate rest areas or welcome centers, we can capture the attention of travelers just passing through Iowa and encourage them to travel the Byway as well.

## Customer Demographics of the Iowa Welcome Centers

According to the current customer demographics obtained from the Iowa Welcome Center Survey of 2007, the average age of visitors for all of Iowa is 55.6 years of age. In the Loess Hills Welcome Centers, the information showed that 26% of the visitors were 35-55 years old and 45.5% were 55-74 years old.

Seventy-five percent of the visitors at the Loess Hills Welcome Centers are married; 58.6% employed and 28% are retirees. The average travel party size was 2.4 persons. Average household income is $66,430.00.

## Situation Analysis Continued

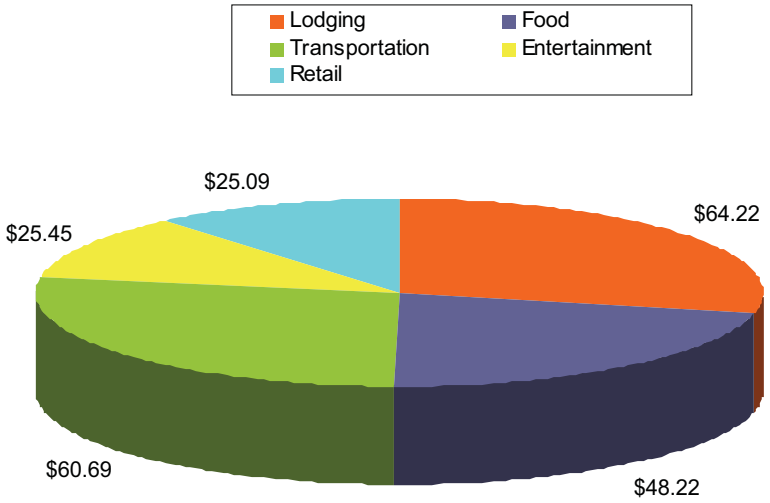
**Traveler Residence:** 48.46% of the travelers visiting the Loess Hills Welcome Centers reside outside of Iowa. The remaining are from other states, in-state and International visitors (1.03%).

| | | | |
|---|---|---|---|
| Missouri | 6.43% | Nebraska | 5.02% |
| California | 6.21% | Illinois | 3.78% |
| Colorado | 5.94% | Texas | 3.56% |
| Minnesota | 5.48% | Wisconsin | 3.49% |
| South Dakota | 5.46% | Kansas | 3.09% |

### Visitors stay an average of 3.5 days with the following listed as trip purposes:

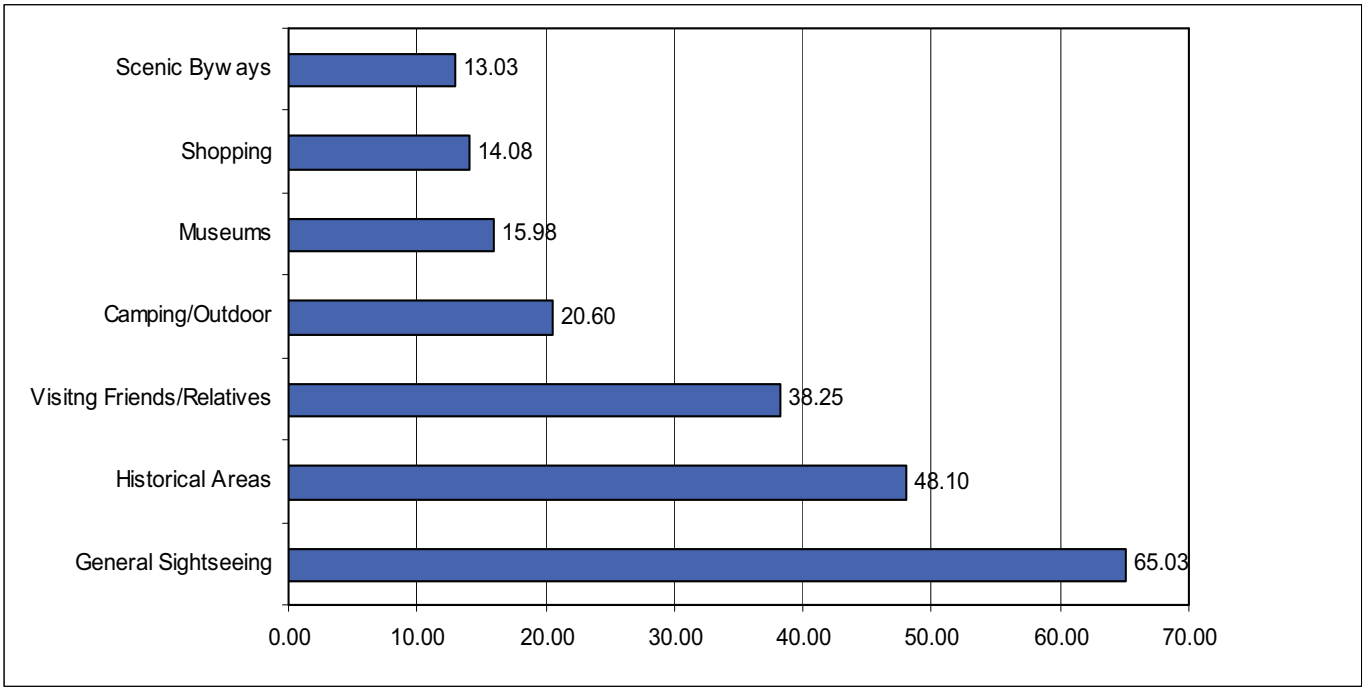
| | |
|---|---|
| 53% | Vacation or leisure |
| 28% | Visit family & friends |
| 7% | Business or convention |
| 4.35% | Personal Business |
| 7.65% | Other |

### Average Daily Spending $223.66




**Source Iowa Welcome Center Survey 2007**

## Main Areas of Interest to Visitors:




In addition to strategically placed Welcome Centers that service Byway customers and inform travelers about the Byway, cross-selling the Byway with other nationally significant "destination" attractions adds value to the Byway experience and increases traffic.

The Loess Hills National Scenic Byway runs parallel to the Missouri River and National Lewis and Clark Historic Trail which is managed by the National Park Service. The DeSoto National Wildlife Refuge is a highlight for travelers looking for outdoor recreation and environmental education. This 7,823 acre refuge and the historic Bertrand Steamboat excavation site with cargo artifacts is managed by the US Fish and Wildlife Service.

Visitors can access 80,298 acres of recreational resources in the seven counties that comprise the Loess Hills. County Conservation organizations and the Iowa DNR keep records about visitors to the parks that provide valuable information.

The metropolitan areas of Council Bluffs, Iowa and Omaha, Nebraska are located in the center of the Loess Hills and traversed by Interstates I-80 east/west and I-29 north/south. In addition, the metropolitan area of Sioux City offers travelers opportunities in the tri-state area of Iowa, Nebraska and South Dakota. Both metropolitan areas offer travelers a full array of amenities, attractions and activities.

A Recreation Study will be completed in 2010 and added to the Loess Hills National Scenic Byway Corridor Management Plan.

## Opportunities for Growth

As we examine our potential for visitor growth we must consider generational markets, the general aging of our population and their attitudes, values and lifestyles.

**Five generations make up the market place today:**

| | | |
|---|---|---|
| GI Generation | 1905-25 | 50,000,000 |
| Silent Generation | 1926-45 | 35,000,000 |
| Baby Boomers | 1946-64 | 78,000,000 |
| Generation X | 1965-82 | 65,000,000 |
| Millennials | 1983-02 | 80,000,000 |

Since the Baby Boomer consumer is a large segment of the population, with higher disposable income and interest in spending it on goods, services, travel and new experiences, it makes sense to market to them. The Boomers are predicted to grow to 113 million people by 2018. (Boomer Consumer, by Matt Thornhill & John Martin).

According to the 2006 Bureau of Labor Statistics Consumer Expenditure Study, Baby Boomers are at their peak earning years and spend more money annually on consumer goods and services on a per capita basis than any other generation. Plus there are more Boomers than other groups so when you do the math, today's Boomer Consumer spends some $2.3 trillion annually on goods and services – that's $400 billion more than any other generation.

With that being said, the "Generation X " market segment is independent thinking, addicted to change and place an emphasis on family. They want a quality of life not a world of work and their friends and relationships are very meaningful to them. They stand to inherit $76 billion from the Baby Boomers so we need to establish a relationship with them with communication techniques that are fast, electronic and interactive.

Since women are making 85% of the consumer purchases and 95% of vacation and travel plans in all generation categories, our advertising in the next 18-months will target women, families and the boomer generation in surrounding states.

We know that Baby Boomers at the age of 50, some of whom began turning age 60 in 2006, are not "old." They don't think of themselves as old and will ignore any sales or marketing message targeting "the old." The mindset of Baby Boomers is an extended "Middle Age" practically lasting a lifetime.

They are also willing to try new experiences, want to be healthier and will travel during these tight economic times. Not only are Baby Boomers hiking and biking, but they are riding motor-cycles, cruising in their classic cars, canoeing down rivers and participating in all kinds of sports. The Loess Hills offers many opportunities for the Boomers to enjoy active pursuits.

Our ability to "package" travel, appeal to niche markets, communicate with foreign travelers and create critical mass opportunities in the Loess Hills is crucial to our success. In addition, coordination of marketing efforts with our partner organizations will help us achieve the "frequency" needed to keep the Loess Hills "top of mind" with consumers.

## Examples of Niche Markets

### Archeological Enthusiasts

The Loess Hills Scenic Byway is rich with significant archeology and history. Existing archeological attractions will be of interest to the general public and should be marketed as a tour itinerary. Planned future developments includes an archeological interpretive center, offering a site to "dig" for artifacts and offering overnight stays at the re-constructed earth lodge to enhance the visitor experience. The naturalist at the Dorothy Pecaut Center in Sioux City might also include a presentation about the plants and animals found in the period being promoted.

### International Visitors

Western Iowa is home to populations of Hispanics and Japanese (Clarinda). Many may be enticed to travel the Loess Hills National Scenic Byway if they feel comfortable with their ability to communicate at our Welcome and Interpretive Centers. In addition, we know that China is an emerging market. Western Iowa events often host international visitors from Denmark, Japan and Germany. Our Universities host several international visitors each year, bringing them into the Loess Hills area to pursue their areas of study. In order to accommodate both visitors and internationals living in western Iowa, we will develop and provide electronic downloadable versions of our Loess Hills National Scenic Byway guidebook in Spanish, Japanese, French and German.

Studies show that 44% of the leisure overseas visitors use personal computers to plan their trips, allowing them to browse information in their own language. Once visiting the Loess Hills and stopping at a Welcome Center, travel counselors will be able to download and print the guidebook for them as well.

A pilot project offering training and translator devices to two Welcome Centers will be initiated in January of 2009. A translator that can cross translate 12 international languages and also offers 700 commonly used traveling topic sentences will be made available to both the visitor and travel counselor. Another aid offers 400,000 commonly used words and phrases. Following the trial period, an evaluation will be made. If the translator devices are helpful, they will be purchased for all welcome center facilities on the Scenic Byway.

## Group Travel

The group tour business is down in Iowa and consequently the Loess Hills. Developing new and creative tour itineraries and giving tour companies an opportunity to catch up to changes in their customers should revive this market. Group Tour companies are anticipating growth in the Hispanic and Asian markets, seeing more interest from groups originating from other foreign countries and struggling to offer the individuality and choices demanded from the Baby Boomer generation.

We recommend that the Loess Hills National Scenic Byway continue to promote to the Group Travel Market by offering themed tours, working the Iowa Bank Club Marketplace and by partnering with local Convention and Visitor's Bureaus and the Iowa Tourism Office that sell tour opportunities at the National Tour Association Marketplace, the American Bus Association and POW WOW International Marketplace.

## Packaged Travel Options

Since the cruise lines and "all inclusive" resort vacations have gained in popularity, the traveling public likes to leave the planning to the host destination. In order to respond to this growing trend, we suggest packaging two and three day suggested itineraries for Girlfriends, Families, Romance, "Man-cations", Just for Kids, and other creative themes to make trip planning for a vacation as easy as possible for working and active families. These planned trips can be offered in print materials or posted on a website.

## Grand Travel

Grandparents are looking for ways to draw their families together and deepen their relationships with their grandchildren. They are planning vacations that include their grandchildren and it's becoming so common that it has a name: **Grand Travel.** According to the Travel Industry Association of America, 30 percent of U.S. leisure travelers who are grandparents have taken at least one vacation with their grandchildren.

It's not just the adults who want more intergenerational travel experiences. 56 percent of kids (6 to 17) would "really like to" vacation with their grandparents according to Yesawich, Pepperdine, Brown & Russell (2003). "Boomer" magazines and Grand Travel websites are free and an excellent resource to reach this market segment.

**Vineyards and Wineries** blanket the hillsides throughout the Loess Hills. Due to the fertile soil it's as easy to raise grapes as it is to raise a glass to the wines they produce.

Self-guided and directed tour options range from viewing vineyards, to watching the pressing, crushing, bottling and labeling of the wines.

A renewed industry in the Loess Hills, most grape growers have 5 –10 years growing experience with 23% of vineyard owners intending to open a winery. This industry offers another interesting and romantic reason to visit the Loess Hills. Seven Loess Hills wineries are currently open for business and a Western Iowa Wine Trail Tour is available.

## Motorcyclists:

The MotorcycleRoads.US website currently features four Loess Hills Scenic Byway excursion loops. Motorcycle riders post comments following their cruises. One rider remarked, "If you've never heard of the Loess Hills, you owe it to yourself to ride the area."

The cyclists enjoy roads which aren't overburdened with traffic, provide them with scenic overlooks and good places to stop to rest and eat, the Loess Hills can exceed their expectations.

The 2009 Harley Davidson calendar will also include a picture of the Loess Hills on the month of March.

The Western Iowa Tourism Region, local Convention Bureaus, Chambers of Commerce and Welcome Centers are experiencing an increase in requests for motorcycle cruise itineraries in the Loess Hills.

Some local communities and attractions currently organize a few rides for motorcyclists and rallies each year however this remains a large untapped market. By working with community organizers and submitting suggested routes to websites for riders, purchasing an ad in a motorcycle magazine or even establishing a database of emails for riders, this market could boom.

## Classic Car Cruisers:

Classic car buffs are looking for lightly traveled hard surface roads to cruise. With some organization and more annual events, car cruises could be promoted to encourage more travel through the hills. Almost every small town has a "Car Show" – they should be encouraged to add cruises as an additional event and to promote them on websites.

Motor Ioway (Classic Car ride across Iowa) has held their annual event in the Loess Hills a few times and should be encouraged to re-visit the area. This annual venture gains good publicity and certainly creates an awareness of their route.

## RVing and Camping

**Camping** is the number one outdoor vacation activity in America. One third of U.S. adults say they have gone on a camping vacation in the past five years and only 6% of people who have gone camping said it was not for them. Camping vacationers tend to be married with children at home. The average age of travelers who go camping is 37 and their median household income is $43,000. People who go camping also tend to enjoy hiking, biking and canoeing. Fifty-nine percent of campers said they traveled with their spouses on their most recent outdoor vacation and nearly half traveled with their children. (Source: Adventure Travel Report, TIA)

U.S. ownership of recreation vehicles (RVs) has reached record levels in the past couple of years. One in every 12 vehicle owning households in the U.S. owns an RV, representing 8 million households, a growth of a stunning 58% since 1980 and according to the statistics from the National Association of RV Parks and Campgrounds, total campground and RV bookings were up 23% from January to May 2008.

Typical RVers travel 4,500 miles annually on excursions that total 28-35 days; Americans in the age group of 35-54 years are keener on owning an RV of their own; the typical RV owner is age 49, married, owns a home and has an annual household income of $68,000. In addition, RV rental has become a $350 million per year business, experiencing a 63% growth rate between 1987 and 2002, according to the U.S. Census Bureau & the RV Rental Association.

Thirty county owned parks and campgrounds, six state parks and several privately owned campgrounds in the Loess Hills offer primitive, modern, RV and camping cabins.

## Watchable Wildlife

Wildlife viewing is a pastime that can be enjoyed in any season, in any corner of the state, by any age group. Unlike some activities, special equipment is not required. Wildlife watchers need to come equipped only with a sense of appreciation for the state's living resources and the knowledge of where to look for them.

Watchable wildlife includes a wide array of animals, some as common as a familiar bird at a backyard feeder, some briefly passing through on seasonal migrations, some rarely-seen species that provide the dedicated viewer with a reward for hours of patient waiting.

Every September through December, bird of prey enthusiasts gather at the Hitchcock Nature Center in the Loess Hills to observe and count thousands of hawks, eagles, and vultures that migrate south. The broad expanse of the adjacent Missouri River Valley and the updrafts created by the prevailing westerly winds that strike the Loess Hills create a "hawk-highway" that attracts migrating raptors. Hitchcock Nature area is 1 of 4 sites in the world with over 500 bald eagles migrating annually.

Wildlife festivals and events are increasing and the scenic byway continues to stimulate interest. We need to continue marketing the byway as a premium national and international wildlife-viewing destination which will increase tourism and boost economic development.

The northern section of the Loess Hills currently offers a birding guide. We recommend that the southern Loess Hills area develop a guide and promote the excellent wildlife viewing decks, towers and hikes already available both in the existing guide and on the website.

## Multi–Use Trails

Recreational trails are extremely important in today's society as they:

- Connect people to the environment which is an essential part of peoples lives.
- Improve the quality of life in the region.
- Create economic diversity.

Trails provide a safe place for people of all ages to walk, bike and cross-country ski. As the typical American lifestyle becomes more sedentary, trails offer a transportation alternative that's healthier for our bodies and environment.

Iowa has about 800 miles of multi-use trails and ranks fourth in the nation for its number of converted rail trails.

Trails located in the Loess Hills may take people through natural areas along waterways, old railroad corridors, by rural farmsteads or through greenbelts in our towns and cities.

75 million people, or roughly a third of the U.S. population, hike. The estimated economic impact of these hikers is $18 billion according to the American Hiking Society.

## Multi-Use Trails Continued

Trails like the Wabash Trace give riders access to 63 miles of rolling hills, prairies, farm land, rural communities, wildlife and birds. Many county and city parks offer hiking and biking trials.

The trails in the Loess Hills include:

- Wabash Trace Trail— 63 miles (Page, Fremont, Mills & Pottawattamie Counties)
- Sioux City River Trails – 12.25 miles (Woodbury)
- Rock Island Old Stone Arch – 4 miles (Shelby & Pottawattamie Counties)
- Council Bluffs - 30 miles of continuous paved trails

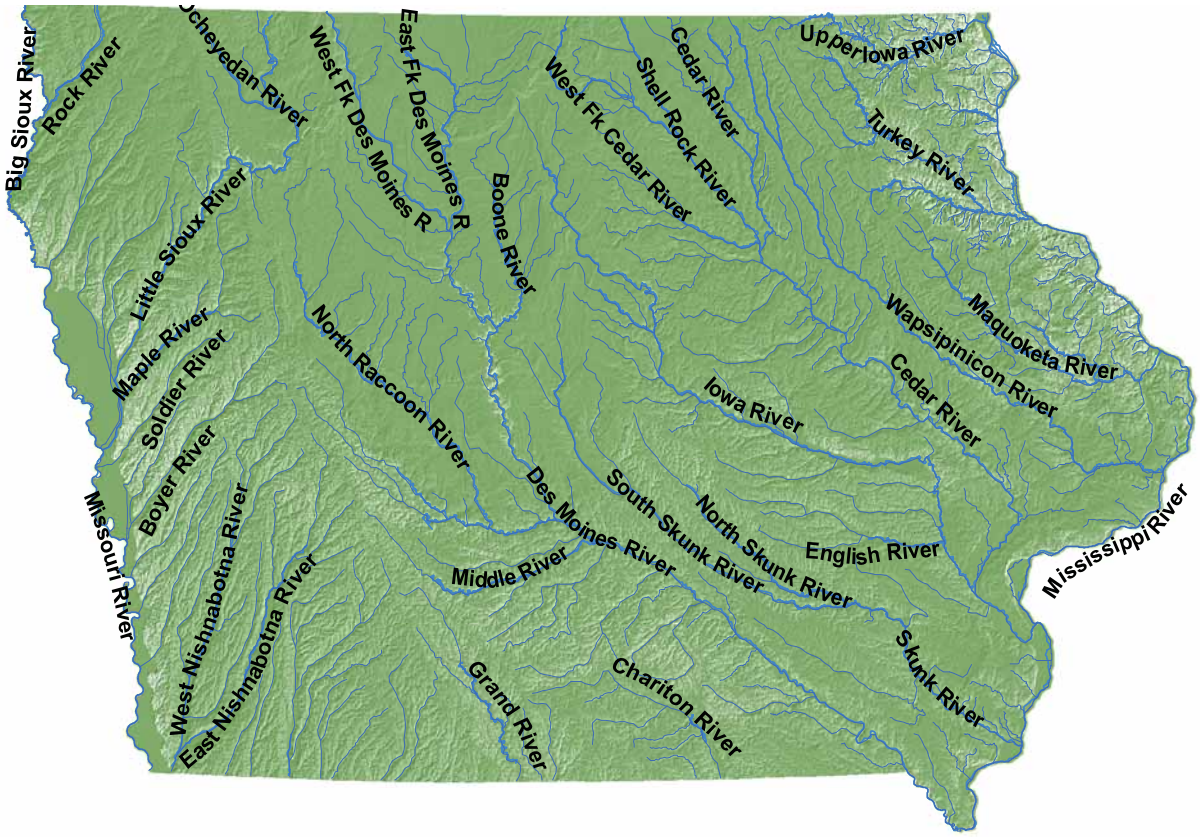
Many county and city parks located in the Loess Hills also offer hiking and biking trails.

The trails are highlighted on the Iowa Department of Transportation, Iowa Natural Heritage Foundation and Iowa Department of Natural Resources websites and will be included on the Loess Hills website as well.

## Water Trail Enthusiasts:

Water Trails are a linear experience on a body of water or as *Paddler* magazine refers to them "Liquid Highways of Adventure." The map shows that there are opportunities to develop water trails in the Loess Hills – the Little Sioux River, West Nishnabotna and East Nishnabotna Rivers, however smaller tributaries may provide better access and scenery for example: Broken Kettle, Hone, Silver, Mosquito, Pigeon, Keg and Walnut Creeks.

### Water Trail Map

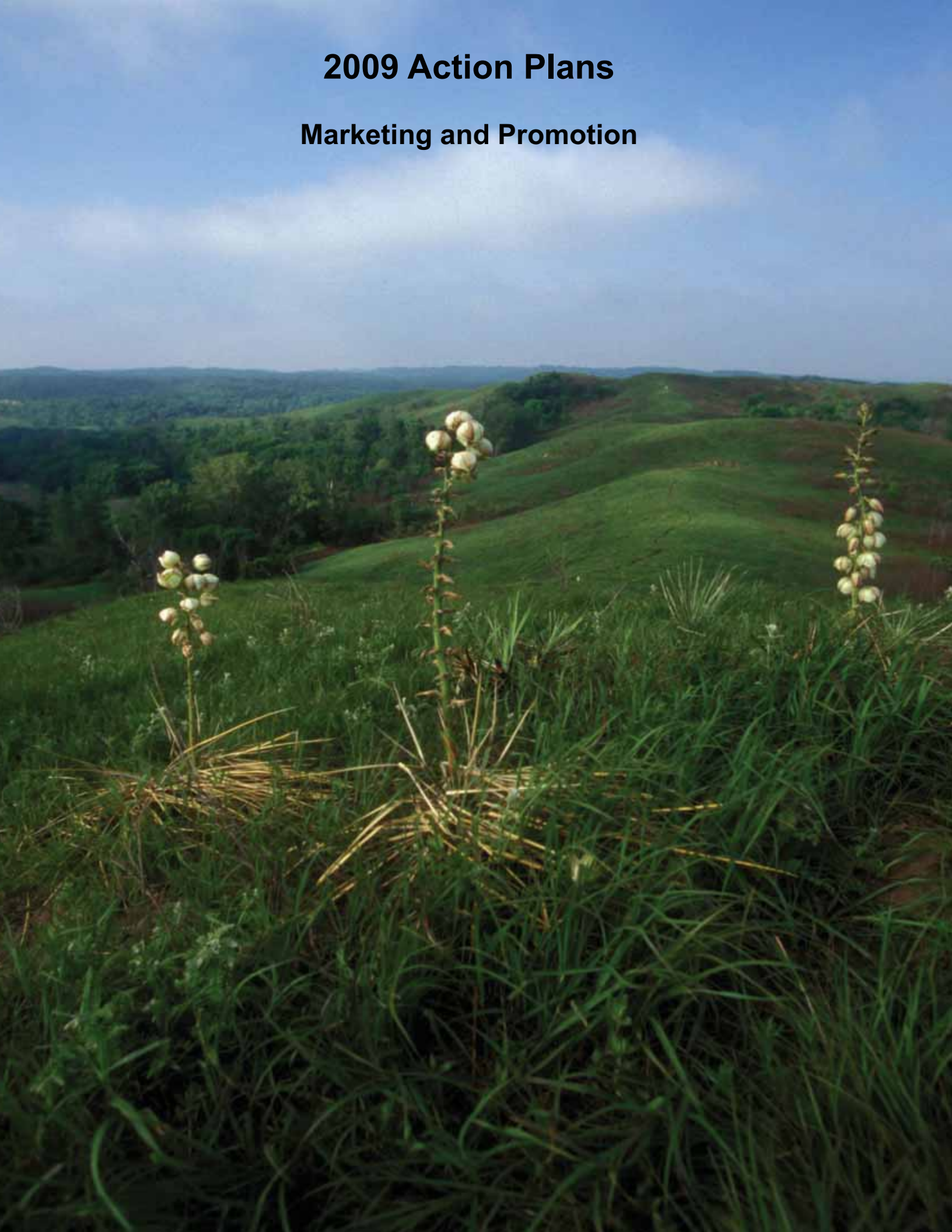


## General Marketing Goals:

- Build a brand for the Loess Hills National Scenic Byway.
- Increase awareness about the significance of the national scenic byway designation among attractions, events and service businesses on the byway route and in byway communities.
- Increase awareness of the National Scenic Byway route to residents in our market area.
- Increase the number of visitors and dollars spent  throughout the Byway.
- Work with other Byways in Iowa and regionally to promote the scenic byway program.
- Create economic development opportunities.
- Be the catalyst for cooperative advertising and promotion of attractions and events located on the Byway.
- Encourage “packaging” and cross sales of events and attractions throughout the Loess Hills Region through publications, advertising and attendance at travel and trade shows.
- Educate business leaders and residents about the economic importance of bringing visitors to their communities.
- Utilize public/private partnerships to enhance the Loess Hills National Scenic Byway and the visitor experience as they travel the Byway.

# 2009 Action Plans

## Marketing and Promotion



## Action Plans 2009

# Marketing on the Internet

**Goal:** The Loess Hills Scenic Byway will create a new user-friendly and interactive website to create interest, provide travel options and service the traveling public wanting to visit or to learn more about the Scenic Byway.

**Objectives:** A web design company will be hired to create a website that is presented in a user friendly format allowing visitors to create their own travel itinerary, provide maps and routes, offer bi-lingual options for all information contained on the site by incorporating Babel Fish, provide a downloadable version of the Scenic Byway guidebook, list cities, attractions, calendar of events, allow a category search, provide itineraries based on the mode of travel, include feature stories when appropriate, and provide links to all travel services determined appropriate by the Scenic Byway Council. The Byway site will offer the opportunity for visitors to Blog about their trips to the Loess Hills.

**Responsibility**: The web design company, Byway Leader, Marketing committee, in consultation with the Iowa Byway program Director whose interest is to create a consistent format for all Iowa Byways .

**Completion Date**: Priority status will be given to this project with plans to have the basic components complete by May of 2009 and with the understanding that the information and design of any successful website is in a continual update process.

**Cost:** First phase $25,000.00. Total Cost: $60,000.00

**Evaluation:** Google Analytics and a tracking system recommended by the web design company will be utilized to evaluate most visited pages, time spent, search engine preference. Google Analytics will also be used to evaluate our position in comparison to our competition's websites.

The web design company will include a section to order the Byway guidebook to enable us to collect user contact information and users will be asked to complete a short (3 question) survey about the efficiency of the site.

**Goal:** The Loess Hills National Scenic Byway will advertise and promote the website.

**Objectives:** All advertising and promotional products will feature the Byway's website address. Specific advertising and promotion projects are described in this plan under their respective categories.

**Responsibility:** Byway Leader, staff and Marketing committee.

**Completion Date:** October 2009.

**Cost:** The promotion of the website address will be absorbed in the cost of the print and electronic media purchased to promote the Byway.

**Evaluation:** The systems we use to track website activity will indicate search engine or direct visit information.

**Goal:** The Loess Hills Scenic Byway will add value to the website with related links as a courtesy to our visitors and to improve exposure for Byway communities, attractions, events and businesses.

**Objective:** Develop a link directory to Byway communities, attractions and businesses relevant to the traveling public and request reciprocal links from each of them. In addition, the Byway will link, or request links with other related websites: the America's Byways, the Iowa Byways, Iowa Tourism, Cultural Affairs/State Historical, Iowa Natural Heritage, the Iowa Nature Conservancy, and the Iowa Department of Natural Resources. A reciprocal link to Wikipedia's Loess Hills information would be valuable and should be pursued. The Byway Council will develop a list of businesses and organizations that are appropriate links. Council members will be asked to take a "fair-share" list of contacts to request links either in-person, by email or by letter.

> **Responsibility:** Scenic Byway council members, Byway Leader and staff, marketing committee.
>
> **Completion Date:** March 30, 2009.
>
> **Cost:** $500.00 for postage, link verifications and a percent of maintenance cost.
>
> **Evaluation:** Monthly analysis of website usages to determine which links the customers are using, verification of links to check for changes and a brief, annual survey for the linked website owners to ascertain how many of their users are linking from the Byway page.

**Goal:** Create a virtual connection between the customer and the Byway through the use of videos, photographs, short stories and offering an opportunity for feedback on the Byway website.

**Objective:** Expanding the customer reach through the use of "You Tube", "Facebook" and "Podcasts" will improve communication with the younger generation, create an up-to-date environment and provide the customer with a better understanding of the beauty of the Loess Hills.

> **Responsibility:** Scenic Byway Council members, Byway leader and staff, Marketing Committee.
>
> **Completion Date:** December 2009.
>
> **Cost:** $2,000.00. We believe that we can initiate the project with existing video, stories and photographs, but to capture the interest and attention of users monthly updates will be necessary. Projected costs for one year is for set-up, purchase of some photography and stories.
>
> **Evaluation:** "Friend " counts on "Facebook", hits on "You Tube" and download counts for Podcasts will be reviewed by the Scenic Byway Council.

**Goal:** Optimization of Search Engine rankings for the Loess Hills Scenic Byway website.

**Objective:** Inclusion of video, related links, minimal PDF files and free submission of the Byway website to the major search engines will increase the ranking of the Byway website.

Search Engine Optimization continued:

**Completion Date:** December 2009**.**

**Cost:** Included in website design and development costs.

**Evaluation:** Self-evaluation by the Byway staff simply using search engines to locate the Scenic Byway website.

# Advertising:

**Goal:** Deliver a compelling and action oriented advertising message, to be delivered to the Byway's target markets at a frequency and media mix that maximizes results.

**Objective:** Hire a design company to develop two ads promoting the Loess Hills and Scenic Byway. Reach the prioritized target market segments and market areas by purchasing advertising in print and electronic media as follows:

**Midwest Living:** Provides region-specific information on travel attractions and events, food, dining, home decorating, landscaping and gardening etc. Circulation 950,000. Reader profile: Median age: 52, Median household income: $61,383.

**Responsibility:** Marketing contact and Byway leader.

**Publication Date & Cost:** 1/6 page ad (2 1/4 x 4" vertical) - May/June issue $3,995.00

**Evaluation:** Reader service listing, website listing and electronic leads.

Purchase the **Meredith Publishing Family Package** which includes Better Homes and Gardens, Ladies' Home Journal and Family Circle to reach on-the-go families with young children and mature families with grandchildren.

**Better Homes and Gardens:** Most of BH&G readers travel by car, so editorial emphasizes destinations within specific geographic regions that can be reached in one day of driving. Circulation: 1,135,000. Reader profile: Median age 49, Median household income: $60,826.

**Ladies' Home Journal:** Family-focused editorial, innovative travel ideas, advice and money-savings tips. Circulation: 569,000. Median age 54, Median household income: $54,815.

**Family Circle:** A family forum featuring articles on wellness, relationships, kids, home and travel. Circulation: $496,000. Median Age: 51, Median household income: $52,382.

**Responsibility:** Marketing contact and Byway leader.

**Publication Date & Cost:** 1/6 page ad (2 1/4 x4"vertical. April issue. $4,550.

**Evaluation:** Reader service listing, website listing and electronic leads.

Advertising Plan continued:

**Iowa Outdoors:** Published by the Iowa Department of Natural Resources, the magazine reaches outdoor enthusiasts in Iowa and includes travel articles in every issue. Circulation: 32,500. High sports and environmental interest. 44% live in towns 1,000 to 29,999 populations, 44% live in towns with populations over 30,000.

**Responsibility:** Marketing contact and Byway Leader.

**Publication Date/ Cost:** 1/6 page (2 1/4 x 4" vertical) - May/June issue. $225.00

**Evaluation:** Leads and website user sessions.

**Western Iowa Region Advertising Insert:** This publication is a regional cooperative advertising project that is designed as an insert for newspapers to be delivered in Minnesota, South Dakota, Nebraska, Kansas, Missouri and selected cities in central and eastern Iowa. The insert promotes "things to do" in western Iowa. Circulation: 550,000.

**Responsibility:** Marketing contact and Byway Leader.

**Publication Date/Cost:** Two (10 1/2 x 11") pages, placement: inside cover. Release in April, 2009. Byway Cost: $4,400.00. Partner cost: $8,800.00. Total cost of Western Iowa Tourism Region insert project: $68,000.

**Evaluation:** Fulfillment requests and hits.

# Events

**Goal:** Attract visitors to the Loess Hills National Scenic Byway by promoting events that are sponsored by organizations and communities in the Loess Hills.

**Objective:** Establish a working committee to develop plans for the 10th Anniversary celebration of the Loess Hills National Scenic Byway. Develop and promote a Calendar of Events on the Byway website and work with individual communities to request that they include the Loess Hills National Scenic Byway website in their respective event promotions. The committee will be encouraged to consider selecting a "signature event" in each county to solicit sponsorships and to study the feasibility of producing a commemorative item(s) to mark this anniversary milestone.

**Responsibility**: Byway Leader, staff, marketing contact and committee.

**Completion Date:** The committee will work throughout 2009 to establish plans for the anniversary celebration in 2010.

**Cost and Evaluation:** To be determined.

# Promotion

**Goal:** We will capitalize on low cost/no cost opportunities to promote the byway.

**Objective:**

⇒ Promote the Loess Hills by e-mailing newsletters or media releases about events.
⇒ Request that Hy-Vee Grocery stores imprint the Byway map and website on the bags used daily to sack groceries for their customers.
⇒ Partner with Mid American Energy to print free posters highlighting the Byway and events.
⇒ Partner with vendor companies when they supply food and drink for the events.
⇒ Promote an annual photo contest for favorite photos of the Loess Hills.
⇒ Give away cloth bags with the Loess Hills Byway message and website to promote "Green".

**Responsibility:** Byway Council

**Completion Date**: On-going

**Cost:** Cloth or (green) bags $1.39 each minimum order of 2,500. Seek Google or Iowa West sponsorship.

**Evaluation:** The Byway Council to review and evaluate annually.

# Public Relations:

**Goal:** Increase the visibility of the Loess Hills National Scenic Byway with sponsorships and support of local, regional and state events.

**Objective:** As a non-profit organization costly sponsorships of events are not an option, however co-sponsorship of educational programs that are relevant to the conservation or preservation of the Loess Hills or that teach Byway promoters more effective ways to advertise, raise funds, budget and manage events help to increase the visibility of the Scenic Byway and to strengthen partnerships already established.

**Responsibility:** Byway Council

**Completion Date:** On-going.

**Cost:** Recommend budgeting $3,000 in 2010.

**Evaluation:** The Byway Council will review and evaluate annually.

## Involving and Communicating With the Public

Local residents possess extensive knowledge about the special resources, or intrinsic qualities, of a scenic byway corridor. Similarly, they are frequently the first to recognize actual and perceived threats to these resources. Residents are keenly aware of the community and economic development benefits that travel on scenic byways can generate. The creation of a scenic byway is a means that residents can pursue to preserve a corridor's intrinsic qualities. A scenic byway also provides residents an opportunity to capitalize on the attractiveness of a region to tourists.

Public involvement is essential to building support, developing a vision and preparing and implementing a management plan for a scenic byway. It is important to the success a scenic byway that all stakeholders have the opportunity to express their opinions about, and participate in, the byway's establishment, development and management.

### *The Public's Role in the Loess Hills Scenic Byway*

The Loess Hills Scenic Byway is a product of the efforts of the residents in the counties and communities through which it travels. Local residents have been actively involved in the selection of Scenic Byway routes; design, fabrication and installation of signs; preparation and distribution of marketing materials; and the planning, development, and improvement of amenities in the Corridor. In addition, extensive input has been solicited from visitors to the Loess Hills that has helped guide the establishment and operation of the Scenic Byway.

**Public meeting during *Corridor Management Plan* development** **Golden Hills**

Public involvement will continue to be an important part of the success of the Loess Hills Scenic Byway. Scenic Byway stakeholder organizations should invest the time, effort and resources to encourage the participation of residents and visitors in the Scenic Byway. Committees that have contributed to the Scenic Byway's establishment can provide the structure to help ensure continued public participation. Public involvement activities, preference testing procedures and survey techniques applied during the Scenic Byway's development provide the means of gathering additional input from residents and visitors in the Corridor.

## *Public Involvement Actions*

### Public Involvement Action #1

The *Corridor Management Plan* of the Loess Hills Scenic Byway Council is a guiding document and as such should be adopted by stakeholder organizations in the Loess Hills. The primary responsibility of the Byway Council will be the implementation and periodic review and revision of the *Corridor Management Plan*.

**Public Involvement Action #2**
Surveys of visitor and resident travelers in the Loess Hills Scenic Byway Corridor would be conducted bi-annually. These surveys would help determine the adequacy of Scenic Byway amenities, signs, interpretive activities and marketing efforts. The surveys would also provide a measure of the economic impact of travel in the Corridor. Results of surveys conducted by other entities, including the Iowa DED's Division of Tourism and Iowa DNR should also be used to better address the needs and estimate the impact, of travelers in the Scenic Byway Corridor.

**Public Involvement Action #3**
Byway stakeholder organizations should organize, sponsor and conduct events to celebrate the 10th anniversary of national designation by the Federal Highway Administration. The events for the Loess Hills Scenic Byway would be an opportunity for entities and individuals interested in all aspects of the Loess Hills to exchange information about their respective activities, accomplishments and plans for the future. Specifically, the events will provide feedback on the current status and needs of the Loess Hills Scenic Byway.

## Implementation

Much work on the Loess Hills Scenic Byway has already begun as a result of the *Corridor Management Plan*. A number of other activities are ongoing and have been incorporated into the *Plan*. In order to realize the full resource protection and economic development potential of the Loess Hills Scenic Byway, Stakeholders must continue to work together to implement the actions identified in the *Corridor Management Plan*.

One of the first and most important steps in implementing the *Corridor Management Plan* will be for Primary Stakeholders identified on page 1-14 to adopt the *Plan* as a management and development guide for the Loess Hills Scenic Byway Corridor. Each of the Supporting and Constituent Stakeholders should also adopt the *Plan* as a guide to their involvement in managing and developing the Scenic Byway Corridor.

A matrix of *Corridor Management Plan* Actions follows. Each Action is a summary of the more detailed Actions presented in the "Corridor Development Actions" section. The matrix identifies Stakeholders primarily responsible for completing each Action. In most cases, the assignment of responsibilities is the result of the many meetings and discussions that have taken place between Stakeholders during preparation of the *Plan*. In some cases, responsibilities are assigned based on the close relationship between Actions and the activities normally carried out by Stakeholders. Stakeholders identified in the matrix are expected to take the lead in completing assigned Actions. It is anticipated that the remaining Stakeholders will actively support and participate in implementing Actions. Each Action has also been assigned a priority ranking of first, second, or third that suggests the relative and logical progression of their implementation.

The Loess Hills Scenic Byway Council should conduct a regular review of the *Corridor Management Plan* to celebrate completed Actions, determine the status of uncompleted Actions, and add new Actions that address future needs. Regular reviews will provide the Council and Stakeholders an opportunity to share their accomplishments, encourage the participation of others, and exchange ideas regarding implementation of the Loess Hills Scenic Byway *Corridor Management Plan*.

### *Implementation Actions*

**Implementation Action #1**
Stakeholder entities should formally adopt the Loess Hills Scenic Byway *Corridor Management Plan*.

| Action | Responsible Stakeholders | Priority | Reference Page |
|---|---|---|---|
| **Implementation Action #1**<br>Adopting the Loess Hills Scenic Byway *Corridor Management Plan.* | • Counties<br>• Cities | FIRST | 4-86 |
| **Amenity Action #1**<br>Address recommendations for existing amenities. | • Counties<br>• Cities<br>• Iowa DNR | FIRST | 4-7 |
| **Site Amenity Action #2**<br>Address recommendations for amenity additions. | • Counties<br>• Cities<br>• Iowa DNR | SECOND | 4-14 |
| **Site Amenity Action #3**<br>Participate in the Iowa's Byways Program for State Scenic Byways | • Iowa DOT<br>• Loess Hills Scenic Byway Council<br>• Golden Hills RC&D | SECOND | |
| **Sign Action #1**<br>Develop a revised sign plan that will ensure continued appropriate use of Loess Hills Scenic Byway sign. | • IDOT<br>• Western Iowa Tourism Region<br>• Golden Hills RC&D | FIRST | 4-24 |
| **Sign Action #2**<br>Install and maintain Scenic Byway route signs as directed by revised sign plan. | • Counties<br>• Cities<br>• Iowa DOT | FIRST | 4-26 |
| **Sign Action #3**<br>Install and maintain signs for amenities in the Scenic Byway Corridor. | • Counties<br>• Cities<br>• Iowa DNR<br>• Iowa DOT | SECOND | 4-37 |

| Action | Responsible Stakeholders | Priority | Reference Page |
|---|---|---|---|
| **Sign Action #4**<br>Pursue the placement of Interstate signs for qualifying amenities. | • Counties<br>• Cities<br>• Iowa DNR<br>• Iowa DOT | SECOND | 4-41 |
| **Sign Action #5**<br>Create and license a companion logo for apparel and additional promotional products. | • Private businesses and attractions<br>• Iowa DOT<br>• Loess Hills Scenic Byway Council | SECOND | 4-42 |
| **Sign Action #6**<br>Design, fabricate, install and maintain the recommended interpretive signs. | • Counties<br>• Cities<br>• Iowa DNR<br>• Iowa DOT<br>• Loess Hills Scenic Byway Council | SECOND | 4-43 |
| **Sign Action #7**<br>Install and maintain community and attraction recognition signs as part of the Loess Hills Hospitality Program. | • Western Iowa Tourism Region<br>• Counties<br>• Cities<br>• Iowa DOT<br>• Golden Hills RC&D | SECOND | 4-46 |
| **Sign Action #8**<br>Provide bicycle route directional signs in accordance with the Sign Plan for the Loess Hills Scenic Byway Corridor . | • Counties<br>• Cities<br>• Iowa DOT<br>• Golden Hills RC&D | THIRD | 4-48 |

| Action | Responsible Stakeholders | Priority | Reference Page |
|---|---|---|---|
| **Bicycle Route Action #1**<br>Produce and distribute maps of the bicycle routes. | • Loess Hills Scenic Byway Council<br>• Iowa DOT | SECOND | 4-56 |
| **Bicycle Route Action #2**<br>Monitor bicycling activities to ensure number and types of signs are adequate. | • Golden Hills RC&D<br>• Counties<br>• Iowa DOT | SECOND | 4-56 |
| **Bicycle Route Action #3**<br>Maintain communication with bicycle clubs to keep up-to-date on their needs and promote Scenic Byway events and activities. | • Western Iowa Tourism Region<br>• Golden Hills RC&D<br>• Loess Hills Scenic Byway Council | THIRD | 4-56 |
| **Bicycle Route Action #4**<br>Identify and develop new or modify existing bicycle routes. | • Counties<br>• Cities<br>• Iowa DOT<br>• Golden Hills RC&D | THIRD | 4-56 |
| **Bicycle Route Action #5**<br>Use regional events to promote bicycling opportunities in the Loess Hills. | • Western Iowa Tourism Region<br>• Golden Hills RC&D | SECOND | 4-56 |
| **Interpretive Program Action #1**<br>Establish a Steering Committee of Scenic Byway Council members to guide website development. | • Loess Hills Scenic Byway Council<br>• Western Iowa Tourism Region<br>• Golden Hills RC&D | FIRST | 4-60 |
| **Interpretive Program Action #2**<br>Assist in developing interpretive centers and additional exhibits based on the archaeology of the Glenwood and Mill Creek cultures. | • Office of the State Archaeologist<br>• Loess Hills Scenic Byway Council<br>• Golden Hills RC&D | FIRST | 2-21 |

| Action | Responsible Stakeholders | Priority | Reference Page |
|---|---|---|---|
| **Interpretive Program Action #3**<br>Develop and implement a master interpretive program for the Loess Hills Scenic Byway Corridor. | • Counties<br>• Cities<br>• Loess Hills Scenic Byway Council | SECOND | 4-60 |
| **Land Use Action #1**<br>Adopt the *Corridor Management Plan* as a comprehensive plan, or amendment to an existing comprehensive plan, for the Loess Hills Scenic Byway Corridor | • Counties<br>• Cities | FIRST | 4-66 |
| **Land Use Action #2**<br>Evaluate the need for, make necessary modifications to and adopt applicable model ordinances, including the Low Impact Development ordinances. | • Counties<br>• Cities | FIRST | 4-66 |
| **Land Use Action #3**<br>Encourage the enforcement of land use regulations in the Loess Hills Scenic Byway Corridor. | • Counties<br>• Cities | THIRD | 4-66 |
| **Land Use Action #4**<br>Encourage and facilitate the use and development of voluntary tools and programs that protect resources in the Loess Hills Scenic Byway Corridor. | • Counties<br>• Cities<br>• Iowa DNR<br>• Golden Hills RC&D | SECOND | 4-66 |

| Action | Responsible Stakeholders | Priority | Reference Page |
|---|---|---|---|
| **Land Use Action #5**<br>Plan and conduct educational workshops on the development and use of regulatory and voluntary land use tools that can protect resources in the Loess Hills. | • Counties<br>• Cities<br>• Golden Hills RC & D, Inc.<br>• Iowa Department of Agriculture and Land Stewardship (IDALS) | SECOND | 4-66 |
| **Assessing Future Impacts Action #1**<br>Apply the corridor resource assessment tool to evaluate the impact from activities in the Loess Hills Scenic Byway Corridor. | • Counties<br>• Cities<br>• Iowa DNR<br>• Iowa DOT<br>• Golden Hills RC&D | FIRST | 4-71 |
| **Roadside Management Action #1**<br>More fully develop the IRVM program in the Loess Hills Scenic Byway Corridor. | • Counties<br>• Cities<br>• Iowa DOT<br>• Golden Hills RC&D | THIRD | 4-74 |
| **For Marketing Actions See the Marketing Section of this Plan** | • | | 4-77 |
| **Public Involvement Action #1**<br>Conduct a Economic Impact Study of the Loess Hills Corridor. | • Loess Hills Scenic Byway Council<br>• Western Iowa Tourism Region<br>• Golden Hills RC&D | FIRST | 4-83 |
| **Public Involvement Action #2**<br>Conduct bi-annual surveys of visitor and resident travelers in the Loess Hills Scenic Byway Corridor. | • Counties<br>• Cities<br>• Golden Hills RC&D | SECOND | 4-84 |

| Action | Responsible Stakeholders | Priority | Reference Page |
|---|---|---|---|
| **Public Involvement Action #3**<br>Organize and sponsor Loess Hills Scenic Byway 10th Anniversary events in 2010. | • Counties<br>• Cities<br>• Loess Hills Scenic Byway Council | THIRD | 4-84 |

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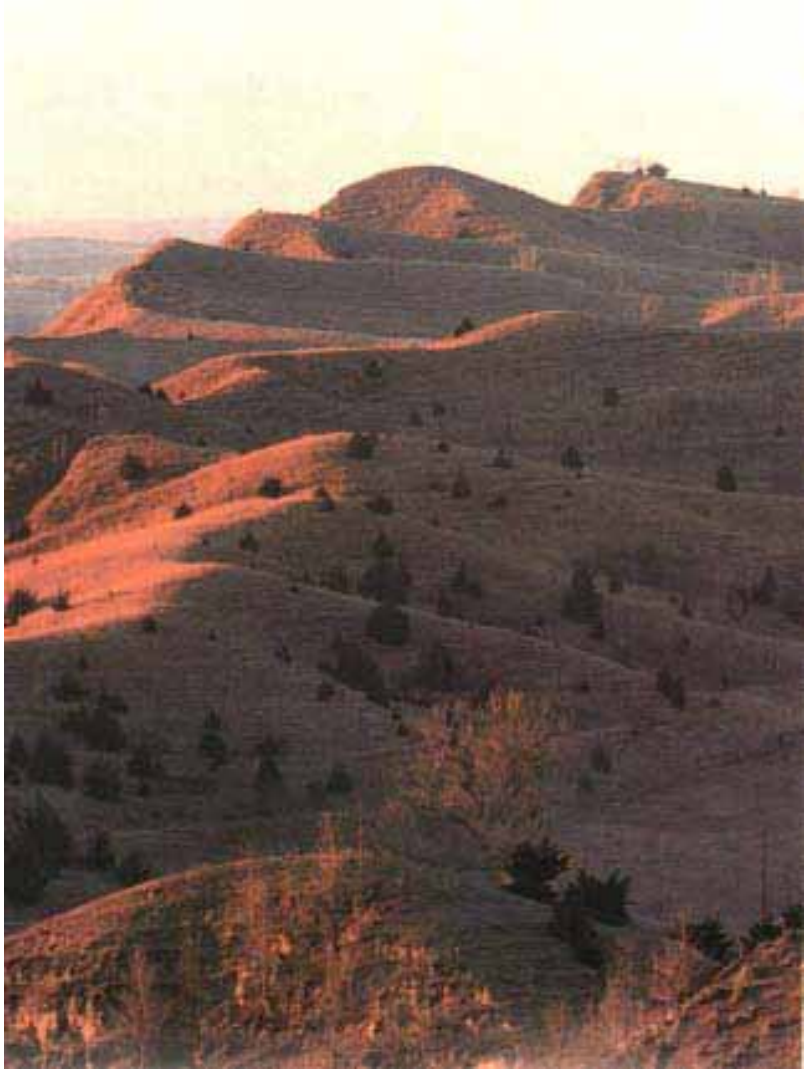
# Supplemental Information for *All-American Road* Nomination: Archaeological Resources and National Significance of the Loess Hills National Scenic Byway

Prepared by
University of Iowa Office of the State Archaeologist

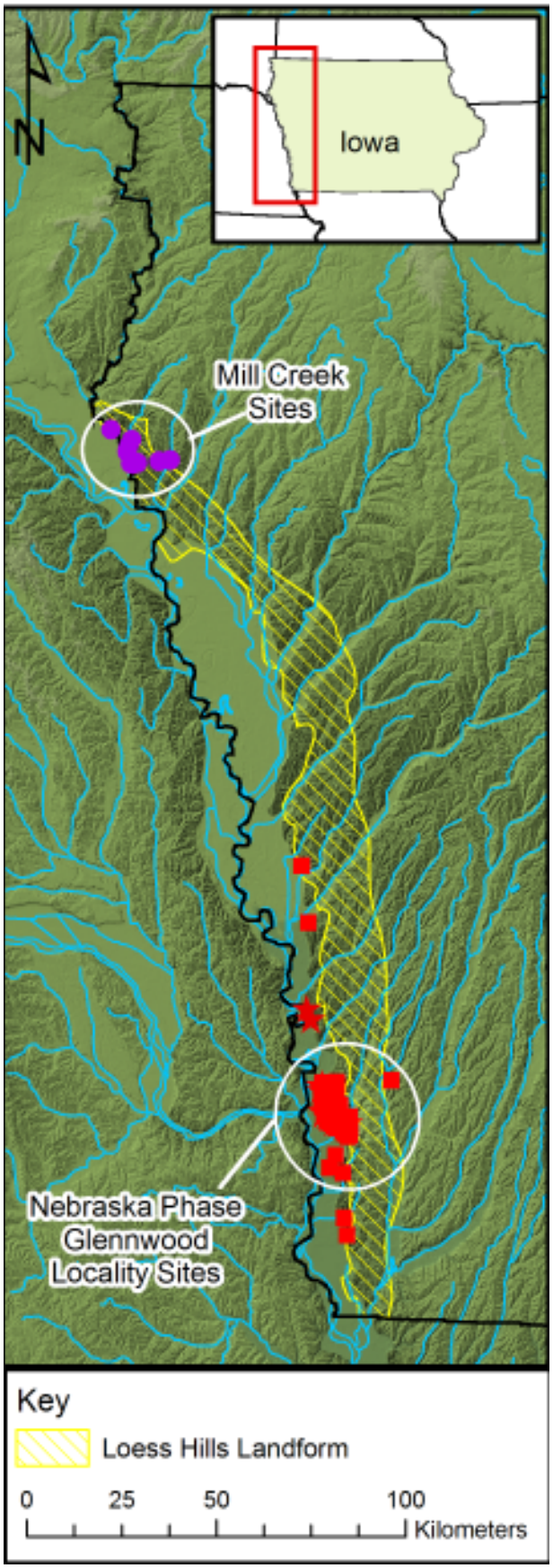
## Introduction

The Loess Hills, known to scholars and laypeople alike as one of North America's natural treasures, is also one of North America's archaeological treasures. This unique landscape harbors hundreds of well-preserved earthlodge dwellings and palisaded villages built by the ancestral Plains Indians. The archaeological legacy of the Loess Hills lies in the rich archaeological record that boasts of over 1,000 Late Prehistoric Glenwood earthlodges in the south and pairs of palisaded Mill Creek villages and ancient cornfields in the north. These two very differently expressed ancestral Plains Indian cultures occupied the Loess Hills at the same time and provide an unparalleled opportunity to

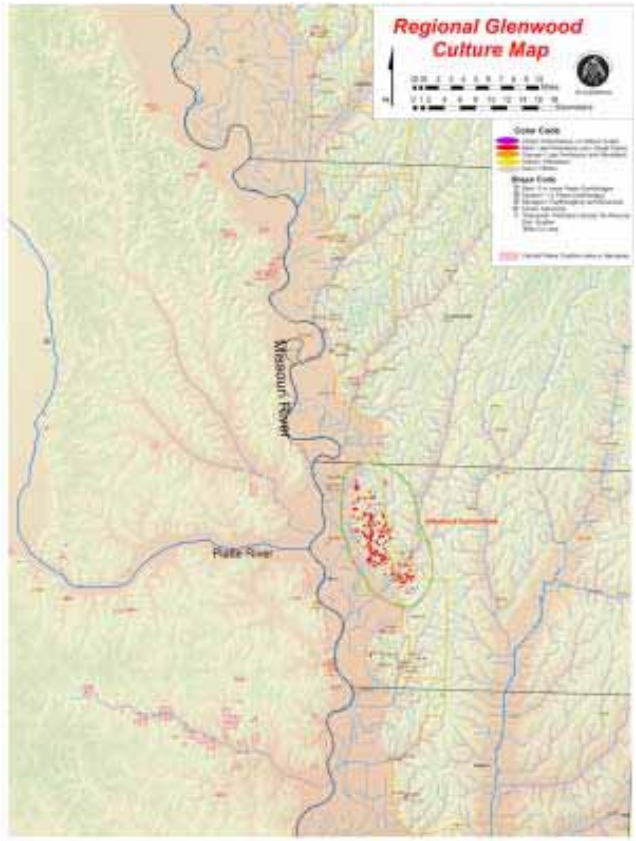


*Photograph of Loess Hills, western Iowa.*

explore 300 years of cultural diversity in this unique landscape. Transcending time, the archaeological legacy of the region is also tied to the struggle for Native Indian rights and events that would be instrumental in leading the nation toward protection and reburial of Native Indian remains. These characteristics are intrinsic to the archaeology of the Loess Hills and they are of unequivocal national significance.




*Map of Late Prehistoric sites in the Mill Creek and Glenwood localities.*

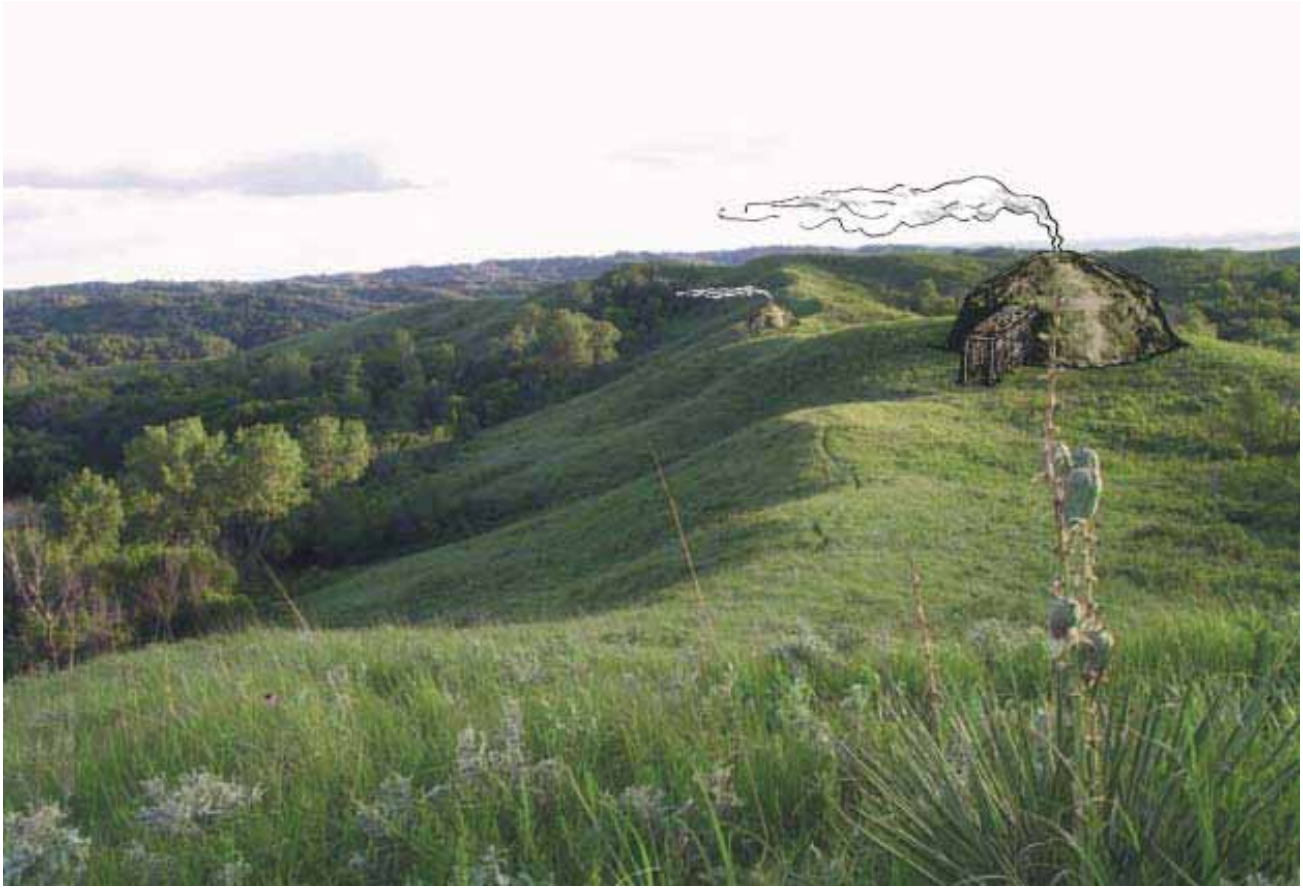



*Map of the concentration of Late Prehistoric archaeological sites in the Glenwood region.*

*Mid-nineteenth century painting of a Mandan village by George Catlin.*

Between A.D. 1100 and 1300 people living on the eastern margin of the Great Plains chose the Loess Hills as their home. Of the more than **1,500 archaeological sites** currently inventoried across the seven Loess Hills counties over **1,000 are earthlodge dwellings**, prehistoric residential sites antecedent to the nineteenth century Plains earthlodges variously described and illustrated some 700 years later by Lewis and Clark, George Catlin, Karl Bodmer and other early travelers who explored the Missouri and Platte river valleys.

What the cliff dwellings of the ancestral Pueblo peoples are to Southwestern archaeology, the earthlodges of the ancestral Plains Villagers are to Midwest and Plains archaeology—remains of the formative time when the ***first farming-based sedentary societies emerged*** across North America. Today, archaeologists estimate that as many as 1,000 earthlodge dwellings once covered the hills and valleys in the southern Glenwood locality, all within a ten-mile radius of the confluence of the Platte and Missouri rivers.

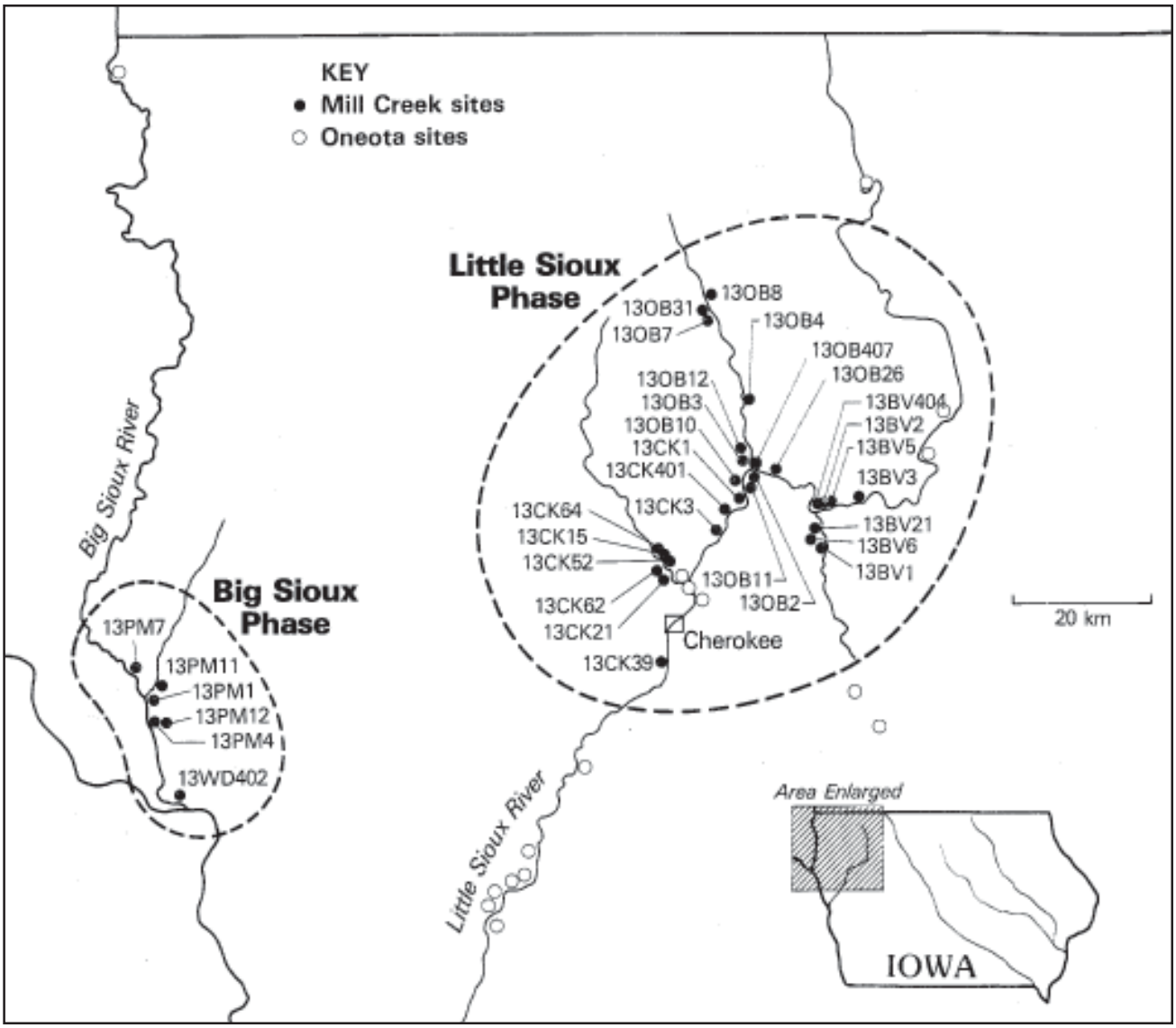


*Artistic reconstruction of Late Prehistoric earthlodges in the Loess Hills landscape.*

*Late 19th century photographs of Omaha earthlodges.*

At the northern terminus of the hills where the Big Sioux and Missouri rivers meet is another focal point for late prehistoric settlement called Mill Creek. While the numbers of known sites in this Big Sioux locality are overshadowed by the ***astonishing number of earthlodge dwelling sites (as many as 1,000)*** in the south, the compact Mill Creek villages form virtual ***'mini-tells'*** similar to ancient Mesopotamian mounds. And like their Near Eastern counterparts, Mill Creek villages developed as palimpsests of occupational debris and mud-walled houses that over time created elevated deposits two to three meters above the prevailing flat landscape of the Missouri River valley floodplain.

While both Mill Creek and Glenwood people lived in semipermanent villages, grew corn, developed a rich material culture repertoire—including decorated pottery vessels—were contemporaneous, and left the Loess Hills at about the same time, they can be considered distinct societies based on other fundamentally different characteristics. One of the most important differences between these societies originates in the layout of their communities and patterns of settlement—Mill Creek villages were nucleated and fortified whereas Glenwood settlements were dispersed and unfortified. Both Mill Creek and Glenwood inhabitants of the Loess Hills region maintained contacts with people living beyond it, including those of the Plains to the west and the Mississippi River drainage to the south and east. Both groups appear to have left the region by A.D. 1300. Why these first farming peoples chose to make this ***unique region*** their home, how they interacted, what circumstances ultimately shaped their different experi-




*Regional map showing the distribution of Mill Creek sites along the Big Sioux drainage.*

*An aerial photograph and an artist's depiction of the Wittrock Mill Creek village.*

ences, and why they both ultimately abandoned the region are just a few of the important questions that guide current archaeological inquiries into the everyday life of these late prehistoric peoples.

Glenwood and Mill Creek societies vary only slightly in the material objects traditionally considered by archaeologists as distinctive features of a society. However consideration of the organization of their communities and social relations suggests that there are essential differences. The numbers of well preserved villages and earthen lodge dwellings in the Loess Hills region is unprecedented; the well preserved extant archaeological deposits a rich laboratory. The research questions posed transcend individual sites and regions as they confront issues of political and economic organization, power relations, and general processes of culture change. The first farming societies in the Loess Hills region, in all their material richness and diversity, are nationally significant because of the unparalleled opportunity they pose to explore the varied lifeways of the ancestral Plains Indians on the eve of Euroamerican contact.

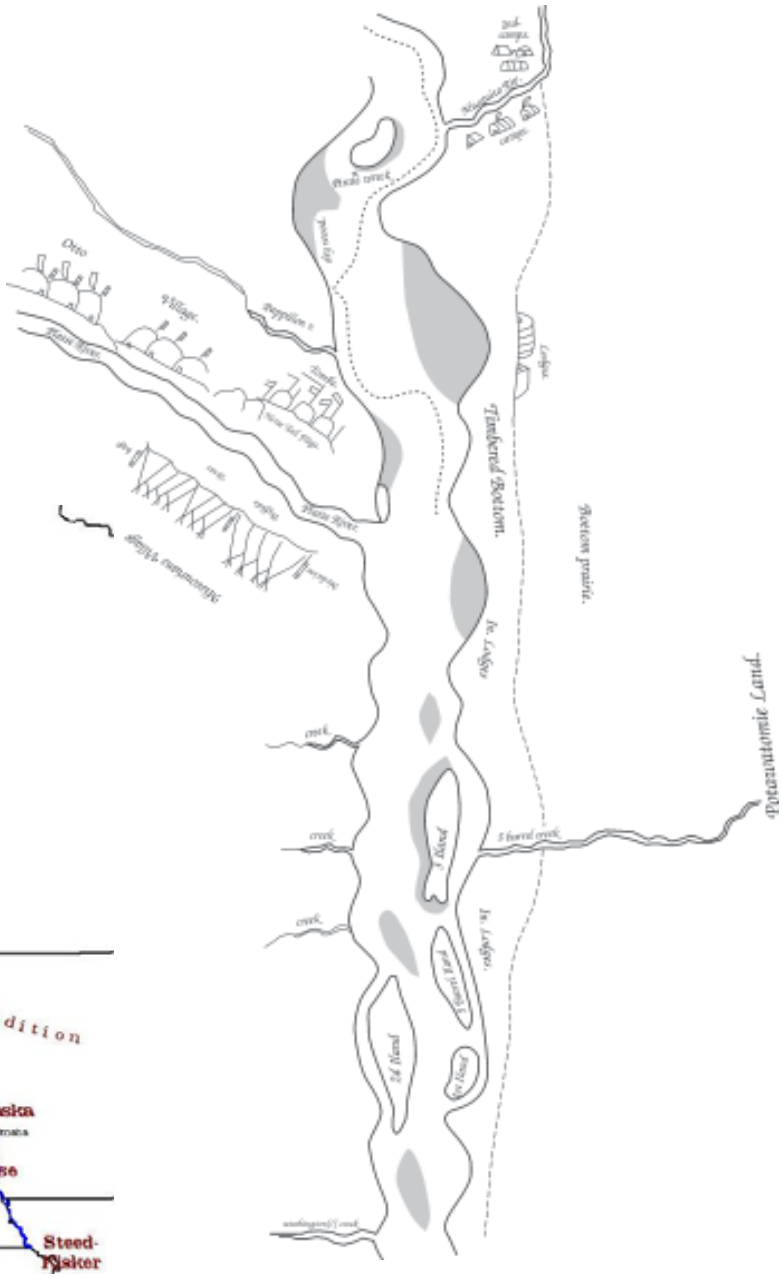
As a gateway west in the historic period, and as a gateway to the Plains and Missouri River valley in the late prehistoric period when North America's first farming societies, pioneers in their own time, were exploring new frontiers, lifeways, and identities, the Loess Hills represent a jewel in America's historic crown. In the sections following are brief historic and late prehistoric theme overviews that speak to the rich and diverse cultural heritage and legacy of the Loess Hills region.

*Left: a modern reconstruction of an earthlodge. Right: the base of an excavated Glenwood earthlodge.*

## Loess Hills Historic Legacies: Gateway to the West

A boundary region between the western plains and eastern prairie biotic communities and positioned along a major interior river corridor, the Loess Hills is a place of deep history and rich archaeology. The National Scenic Byway follows the Missouri River valley traversing some 220 miles of the Loess Hills from Plymouth County in the north to Fremont County in the south. The City of Council Bluffs commemorates both the cultural and natural landscape of the region, taking its name from the locality nearby where Lewis and Clark held their first councils with Native American peoples in 1804. The Loess Hills National Scenic Byway through western Iowa follows the Missouri River north along the western edge of Iowa paralleling the Lewis and Clark Trail and offering some of the same sights and scenes witnessed by the famous party. Sgt. Charles Floyd, the only fatality of the Lewis and Clark Expedition, is buried on a bluff in the Loess Hills in what is now Sioux City, Iowa and in 1960 a monument erected near his burial place became the first declared U.S. National Historic Landmark. A few decades after the Corps of Discovery expedition, westward expansion ushered in waves of missionaries, traders, artists, and settlers, some of whom left behind maps and drawings of a number of Euroamerican and Native Indian settlements; these resources are important tools for archaeologists seeking to document these locations.

*Map showing the path of the Lewis and Clark trail up the Missouri River and through the Loess Hills landform in Iowa.*




*Modern map tracing the original drawing by Pierre-Jean De Smet in 1839 illustrating Indian villages in the Council Bluffs region.*

In 1853 the Mormon migrations also passed through the area and their camps are part of the historical and archaeological inventory of the Loess Hills. Attracted to the rich agricultural potential of the valley, a group of Mormon's split from the main wagon train and camped in an area known as Preparation Canyon, now a state park in Monona County. Some continued their trek west, but others chose to settle in the Loess Hills. In 1859 Abraham Lincoln ascended the hills at Council Bluffs to scout locations for the First Transcontinental Railroad. In 1865 the Steamboat Bertrand sank just twenty miles north of Omaha, Nebraska enroute from St. Louis carrying supplies to the goldfields of Montana and a treasure trove of information on 19th century life for archaeologists a century later. Today the Steamboat Bertrand Collection housed at the DeSoto National Wildlife Refuge represents the only publicly-accessible collection from a sunken steamboat; the U.S. Fish and Wildlife Service maintains this Loess Hills-related collection under the *Preserve America* mandate that focuses attention on nationally significant archaeological resources.

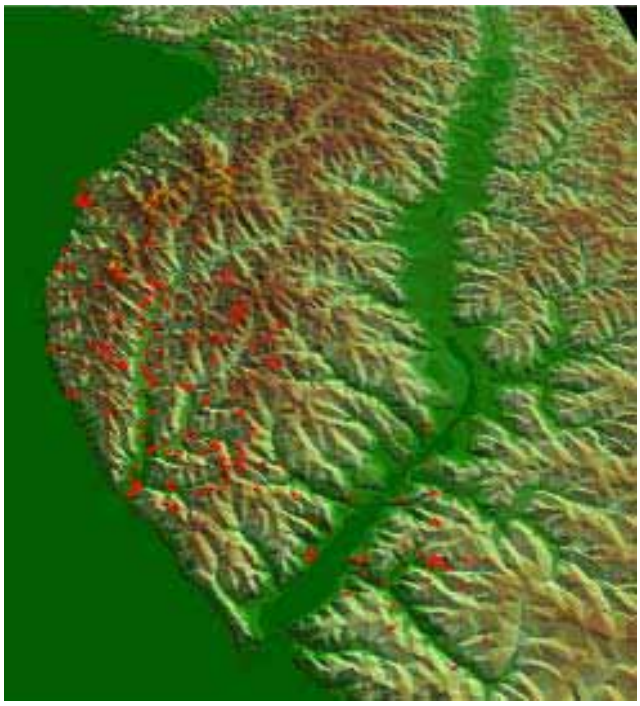
Transportation corridors over land and along waterways, breathtaking vistas, diverse biological communities, narrow but steep canyons, springs and caves (used for shelter or as hideaways for such notable outlaws as Jesse James), and rich agricultural soil are some of the reasons why people have been coming to the Loess Hills region for as long as the North American continent has been inhabited. The prehistoric archaeological inventory of the region includes over 1,500 sites across seven counties and spans more than 10,000 years including the earliest Paleo-Indian big game hunters, the oldest known Native American cemetery in Iowa, multitudes of late prehistoric agricultural communities, and settlements of displaced early historic Indians. However, it is the late prehistoric period that stands out in the Loess Hills and offers the visitor to the region a spectacular and contrastive view into the lives of ancestral Plains Indians.

The late prehistoric Indians who occupied the Loess Hills and other areas along the Missouri and Platte rivers were ancestral to the native Indian groups encountered by travelers and explorers in the 18th and 19th centuries—the Mandan, Arikara, Hidatsa, and others. Prior to Euroamerican displacement, Indian populations were not static. In many parts of North America demographic cycles in the late prehistoric period speak to changing alliances and territories as landscapes became increasingly domesticated by early agricultural societies. Loess Hill's archaeological sites hold the potential to provide data to help unravel the complexities of these shifting political and geographic alignments.

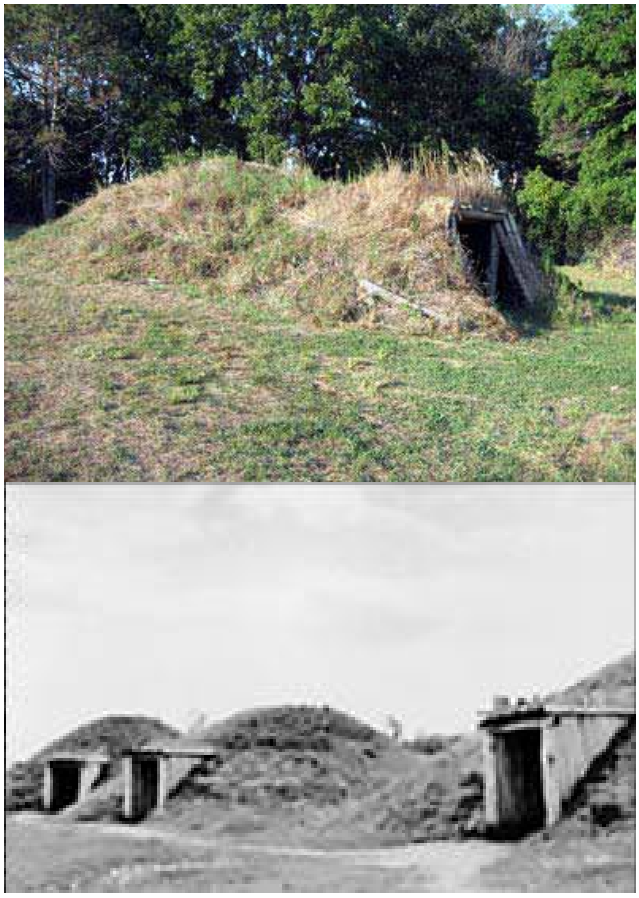
*Archaeological excavation of the Bertrand shipwreck.*

## Loess Hills Archaeological Intrinsic Quality: Gateway to the Plains and Beyond

**What the cliff dwellings of the ancestral Pueblo peoples are to southwestern archaeology, the earthlodge dwellings of the ancestral Plains Villagers are to Midwest and Plains archaeology**—the formative period of time when the first farming-based, sedentary societies emerged across North America. In the Loess Hills the focal centers of settlement are at the confluence of the Platte and Missouri rivers (Mills County) in the south and along the Big Sioux River (Plymouth and Woodbury counties) in the north. Both areas are home to a number of very important late prehistoric sites, including mounds, cemeteries, and special use sites (chert quarries, gardens, fish weirs), as well an array of farmsteads and villages. As a result of the conspicuous late prehistoric presence in the Loess Hills region—particularly as evidenced by the ***astonishing numbers of earthlodge dwellings*** in the Glenwood locality—the Loess Hills became a prime target of 19th century antiquarians followed by 20th cen-



*Map showing the dense concentration of Late Prehistoric earthlodges in the Glenwood locality.*



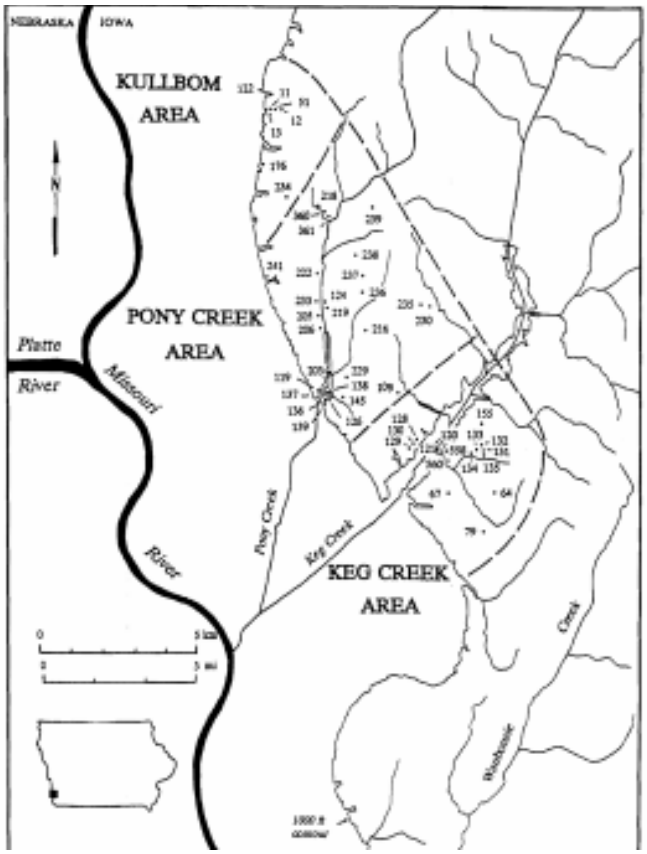
*Upper left: a modern reconstruction of a Glenwood earthlodge. Lower left: late 19th century photograph of Plains Indian earthlodges. Right: an extrapolation of an excavated earthlodge below the ground surface and a reconstructed drawing of an earthlodge as it may have looked above the ground surface.*

tury local avocational and eventually professional archaeologists who have recorded hundreds of earthlodges in the Glenwood area and several large villages in the Big Sioux River area. This process of discovery is ongoing, with several new earthlodge sites documented in the past year.

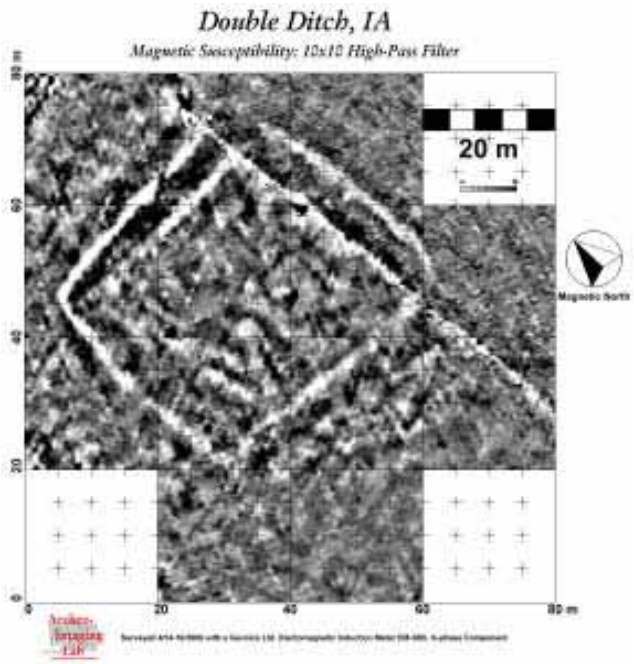
The Loess Hills landscape itself can be viewed through filters of art and archaeology by contrasting early artistic renderings of the lands and residences of native Indians by 19th century Euroamerican antiquarians and explorers with painstakingly recorded images of excavated historic and prehistoric Indian sites and residences by 20th century archaeologists. Application of archaeological analysis techniques which serve to capture data on the expansion, contraction, and displacement of native and Euroamerican populations over nearly a millennium between A.D. 1100 and A.D. 1846 contributes to our understanding and valuing of the past. The story tellers are people who call the Loess Hills home and archaeologists who have come here to work, some at the invitation of community members and others in front of bulldozers. The complex geology of the region encompassing the deep loamy floodplains of the Missouri River and fine loess-capped hills led to important pioneering work in the field of geoarchaeology. Before professional archaeologists came to the area Paul Rowe and other interested citizens were stewards and pioneers of archaeology in the Loess Hills during the first half of the 20th century. As the early culture histories of the Plains were being written in the first half of the 20th century, Glenwood and Mill Creek sites became important "culture type" sites for the region.

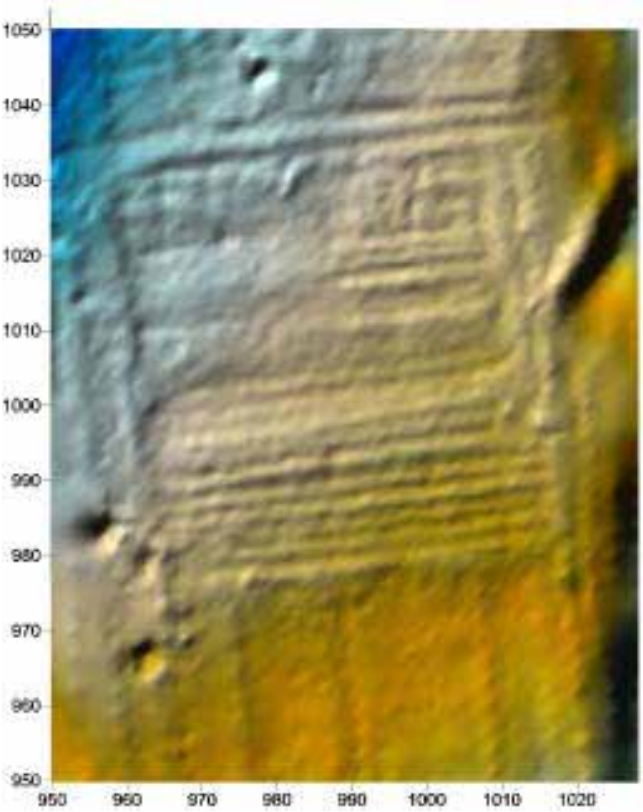
**Perhaps nowhere in the Midwest and Plains regions are there more dense concentrations of late prehistoric dwelling sites than in the Loess Hills at the confluence of the Platte and Missouri rivers near the modern town of Glenwood**. Located on the hilltops and valleys of Pony and Keg creeks, these late prehistoric locations are known to archaeologists as some of the finest examples of Central Plains Tradition Nebraska phase sites, typically comprised of semisubterranean, rounded, earthlodge residential structures with extended entryways. While many currently inventoried sites evidence only one or two lodges, there are a few known cases, notably the Kullbom site (13ML10), where as many as 15 lodge structures occur relatively close to one another.

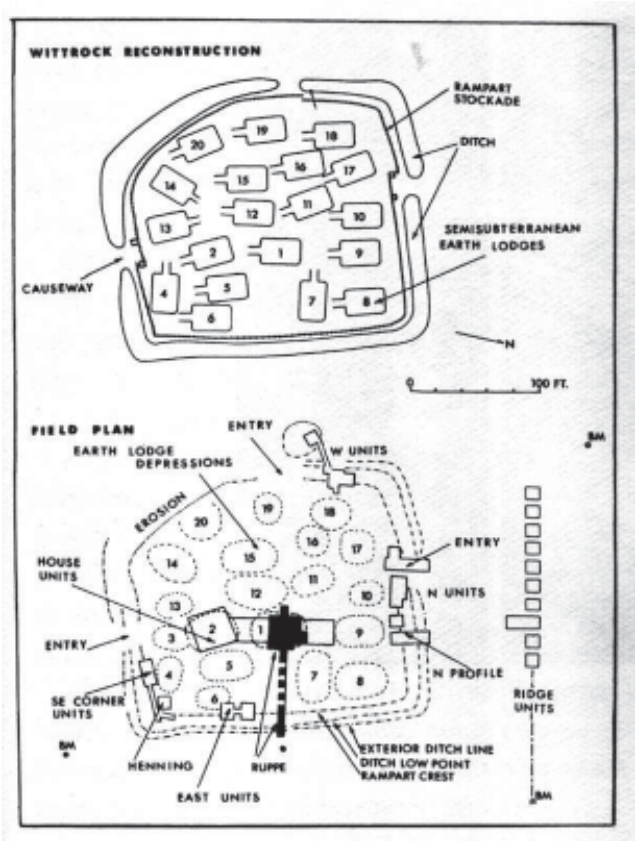
*Photograph of Paul Rowe, a pioneer in the archaeology of Loess Hills.*




*Map of the locations of Late Prehistoric dwelling sites in the Kullbom area and along Pony and Keg creeks.*




*Upper left: an electromagnetic map of Double Ditch , a Mill Creek village site in Iowa.*
*Lower left: a surface survey map of the Litka site, a Mill Creek agricultural field showing crop rows.*
*Right: Wittrock Mill Creek village site map.*

In northwest Iowa, the Big Sioux drainage was home to another late prehistoric group, designated by archaeologists as the Mill Creek culture. While Glenwood sites in the south appear to be dispersed across the landscape, Mill Creek settlements were much more structured both in their location on the landscape and in terms of community layout. Mill Creek sites appear to be evenly spaced along river and creek terraces. Settlements covered up to 10 acres and are recognizable today rising some two to three meters above the surrounding landscape. These rises are comprised of an accumulation of occupational debris formed by continuous or repeated residence in the same place over several generations. Villages were typically surrounded by fortifications and within the village walls were built rows of up to 20 closely-spaced rectangular wattle–and-daub structures. Surrounding the village were single or double ditches containing wooden post palisades. That the walls surrounding villages were for defense fortifications is suggested by an apparent human trophy skull recovered from the Broken Kettle site. Not only are the ruins of Mill Creek villages visible on the landscape today, but their ancient corn fields are also recognizable. Mill Creek peoples practiced ridged-field farming, a testament to the important role agriculture played in their economy. Both Glenwood and Mill Creek settlements were abandoned by A.D. 1300. Why the region was abandoned at this time and what became of these

*Upper: carbonized corn remains recovered from a Glenwood site. Left: an artist's interpretation of a late prehistoric woman using a bison scapula hoe to tend her garden.*

early residents who farmed the Loess Hills hillslopes and valleys for 200 to 300 years are important questions that archaeologists from around the country are interested in answering.

## Archaeological Thematic Frameworks

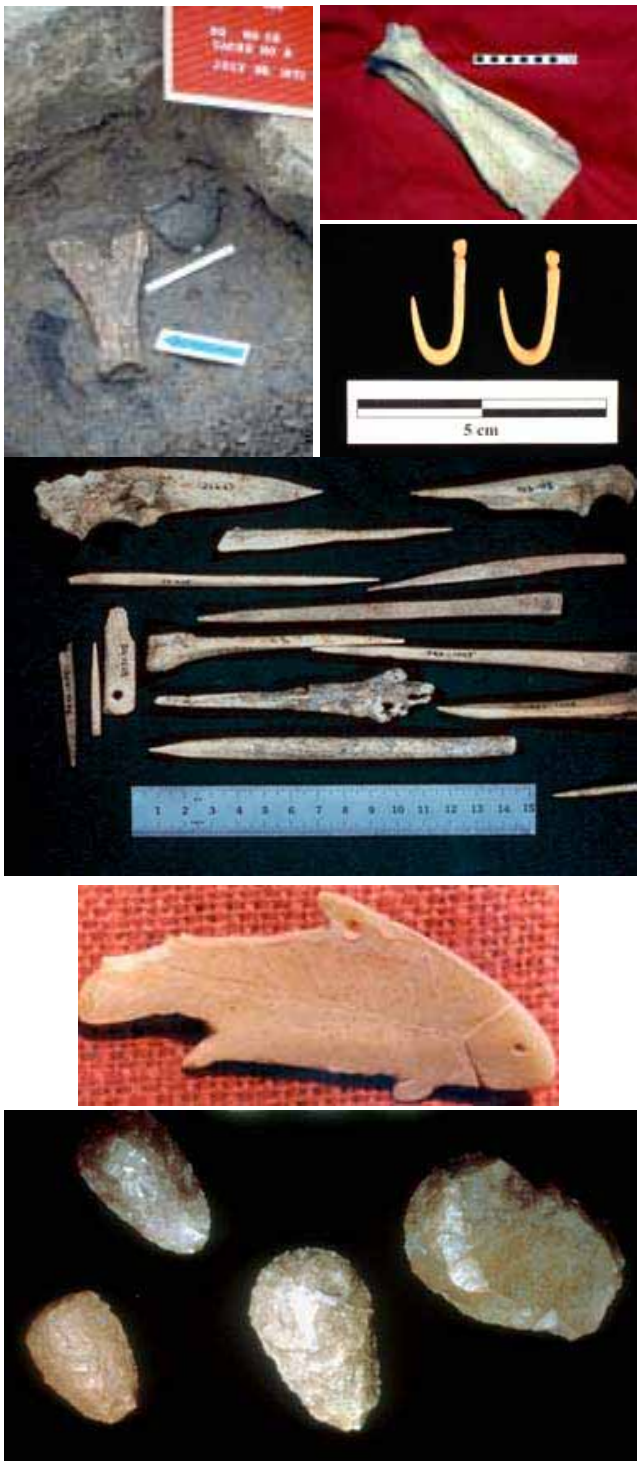
The late prehistoric archaeology of the Loess Hills, boasting intact villages and households, a rich array of utilitarian and esoteric material goods, a well-preserved zooarchaeological and botanical record, and data on settlement patterns and chronology offers a regionally unequalled record with which to address important universal themes that engage professionals and the public alike in questions about population displacement and migration, agriculture-economy-environmental relations, and landscapes (cultural, political and natural). The archaeology in the Loess Hills touches on themes of ***population movement and change*** during the Late Prehistoric period just prior to Euroamerican contact and the well-preserved dwelling sites offer unparalleled opportunities to explore family formation and concepts of gender, family and the division of labor. Just as our own agricultural economy today is diversified, ranging from small-scale family and community-based farms to large-scale, conglomerate, agri-industries, Native American farmers also were diversified. The Glenwood and Mill Creek ruins offer opportunities to explore the ***economic history of early agriculture on the plains and prairies by Native Americans***. Loess Hills archaeology also presents an unparalleled opportunity to study and interpret to the public not only the varied ways past farming peoples made a living, but also how choices people made about their settlement locations and livelihoods may have ***transformed the environment***. By telling accurate stories of the lifeways of these early Loess Hills residents we can engage the interested public in relevant economic and environmental issues experienced by Native Americans and compare them to environmental issues we face in today's world.

The physical remains of late prehistoric Glenwood and Mill Creek settlements are not only unprecedented in their numbers but in the well-preserved layouts of their dwellings, villages and agricultural fields that offer clues to how people lived, worked and interacted. The opportunity to study and interpret aspects of daily life between two differently organized cultures alone underscores the significance of the Late Prehistoric archaeological cultures of the Loess Hills. The richly preserved material record boasts not only of the mundane everyday items needed to make a living, but the esoteric items that speak to connections with the secular world and beliefs of other peoples and places. Buffalo, deer, and raptors provided materials for clothing, tools for tilling the land, and items used to trade with neighbors near and far. It is here that we see the earliest use of deer scapula hoes, commonly used among the historic Plains Indians to till the land. We find intricately carved fishing lures from shell and

*Left: a 19th century painting of a buffalo by George Catlin. Right: a photograph of an eagle soaring over the Loess Hills.*

archaeologists working in the Loess Hills are beginning to unravel the varied uses and forms of decorated and undecorated vessels used to prepare, cook, store, and serve food. Feathers and talons from eagles and hawks, so prevalent in Plains Indian culture, have perhaps their earliest expression in the archaeological record of the Late Prehistoric period in the Loess Hills. Stone scrapers and bone awls speak to the importance of hide products among both the Glenwood and Mill Creek peoples and their importance as items of trade, perhaps to acquire elaborately carved shell masks, ear spools, and finely crafted ceramic vessels attested to at Mill Creek and Glenwood sites—objects that moved widely among people who resided in the towns and villages that dotted the major interior rivers of the Midwest and Southeast between A.D. 1,000 and 1,300.

Through the rich material culture repertoire of Mill Creek and Glenwood peoples it is possible to explore ***regional variations in interactions among indigenous peoples and their interactions with the late prehistoric world*** as it was known at the time. Elaborate ceramic trade vessels, exotic materials, and masks speak to the social use of material items in spheres that may have pertained to play and warfare, personal adornment, shared cosmologies, and perceived uses of ceramic vessels and particular design motifs. There is ample evidence in the archaeological record that late prehistoric agricultural societies in the major interior rivers were interacting—exchanging ideas and material goods. The contexts in which these interactions took place, however, remain elusive and the subject of much archaeological discussion and debate. Mill Creek peoples lived in fortified, nucleated villages (but Glenwood peoples did not), engaged in intensified field agriculture (compared to perhaps subsistence gardening characteristic of Glenwood peoples), and may have produced a variety of items for personal use as well as trade, including bison robes, feathered capes and headdresses, and hawk and eagle-skin medicine bags. These practices raise questions about changes in the internal organization of

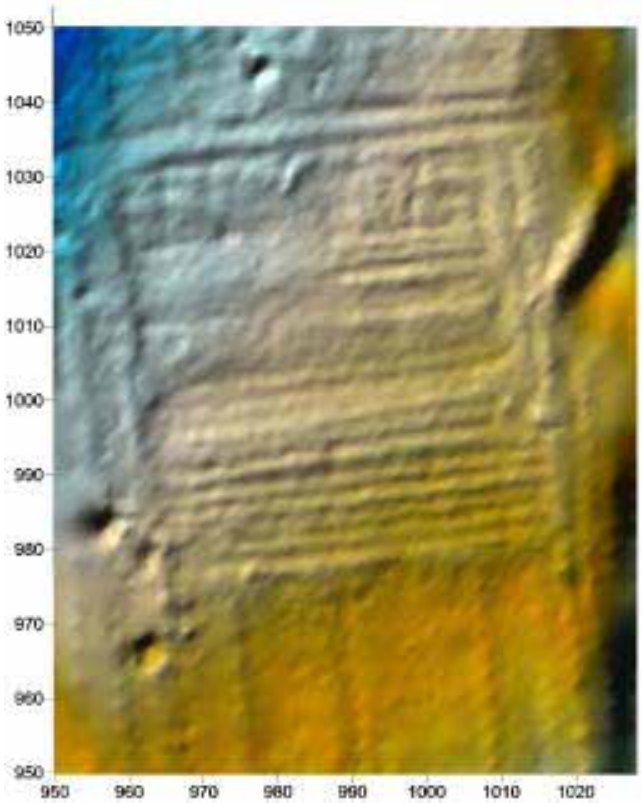



*Upper: Bone and shell tools for farming, fishing, and animal processing; bison scapula used as a hoe, bone fishing hooks, bone awls, a fish effigy made of shell, and stone scraping tools.*

production and labor, external relations, and the uses of material cultural to form identities, alliances or to bestow prestige and power. These are questions that are universal to the archaeological study of the varied

*Upper: plain and decorated Mill Creek ceramic vessels . Lower left: ceramic ear spool from Broken Kettle site. Lower middle: a fragment from a Long-nosed god mask made of marine whelk shell. Lower right: a thin, engraved vessel from the Siouxland Sand and Gravel Site, Woodbury County.*

*Glenwood culture artifacts from Mills County. Upper row: ceramic pipe, engraved shell pendant, ceramic jar and water bottle. Lower left and center: ceramic animal effigy fragments. Lower right: effigy pipe.*



*Surface contour map of Litka site, a Mill Creek garden.*

*Upper: fish bones. Lower: shell pendant, beads, and gorget, and bone fish hooks.*

late prehistoric chiefdom and tribal societies that emerged in the major interior rivers of the Midcontinent and Southwest, whose influences were wide-ranging and of unprecedented scale.

Both the Glenwood and Mill Creek cultural manifestations offer a rich laboratory for the study and interpretation of economic and cultural diversity as it relates to how people made a living and interacted with each other, their neighbors, the land, and people from more distant places. As a result of the regional variation expressed by Glenwood and Mill Creek cultures, the archaeology of the Loess Hills offers an unprecedented opportunity to explore ***differences in the way people use culture to express beliefs about themselves and the world they inhabit***. Both groups grew a similar suite of domesticated and wild native plants (sunflower, elderberry, bulrush, tobacco, and little barley) and tropical cultigens (corn, beans, and squash) and depended on a variety of wild animal resources, but practiced different types of agriculture and emphasized different kinds of wild resources. Mill Creek peoples appear to have practiced intensive field agriculture, investing labor in the preparation of ridged fields, perhaps to increase crop yield or buffer climatic effects. Glenwood peoples appear to have practiced an extensive form of swidden (slash and burn) horticulture where fields are cleared of timber and brush and burned before planting and then allowed to lay fallow for long periods of time before reuse.

These different types of farming practices have different labor and technological needs and lead to different kinds of ***people-land-technology relations***. Both groups used similar tools and natural resources—earth, mud, wood, stone axes—to construct their homes and villages, but did so in different ways and on different parts of the landscape. Both hunted and fished, but while the Mill Creek people focused on bison and perhaps raptors for manufacturing hide and feathered items, Glenwood peoples seem to have placed emphasis on smaller mammals and fish. Effort was spent on technologies related to fishing and the importance of fish to their lifeways is further reinforced by discovery of exquisite clamshells carved in the likeness of fish. Deer and elk along with smaller mammals, even rodent-sized ones, occur in varying quantities at both Mill Creek and Glenwood sites and may reflect diversity in diet, but also periods of dietary stress resulting either from

*Stone arrow points.*

*Stone axe.*

*Bear teeth.*

environmental (drought or soil depletion) or social (raiding and warfare) factors. Both cultures shared the use of the bow-and-arrow and utilized a variety of stone and feathers to manufacture arrows, used undoubtedly for both hunting and defense. Both groups interacted with their neighbors but did so at different scales and perhaps for different reasons. By around A.D. 1300 the settlement pattern data suggest a demographic decline. Researchers have postulated that the apparent decline in local Glenwood and Mill Creek populations may indicate that they were displaced by intrusive populations, or that environmental factors such as drought or soil depletion led to people moving out of the area. As archaeologists refine the occupational histories of the many residential sites in the late prehistoric inventory it will be possible to construct demographic cycles (upturns and downturns) that take into consideration both social and environmental causes, including droughts and their potential affects on resource depletion (tree harvesting, construction, soil fertility).

Finally, the archaeology of the Loess Hills also offers an unparalleled opportunity to illustrate the centrality of people, place and time to ***shaping political landscapes*** in the past and present. In the section below we illustrate how in the Loess Hills, tribal, local, state and federal political and governmental institutions came together to shape policy and to lay the ground work for the formation of national policy and institutions for the protection of Native American graves and scared places.

## First in the Nation in Native Indian Policy: A Case in Point

Not only is the **astonishing concentration of preserved earthlodge dwellings and palisaded villages in the Loess Hills of national significance**, but Loess Hills archaeology has played a central role in the very history of archaeology as a discipline and in leading the nation toward the protection and reburial of Native American Indian remains in the establishment of the **Native American Graves Protection and Repatriation Act (NAGPRA)**. In the late 1960s into the 1970s, American Indian groups nationwide were increasingly speaking out for equal rights and self-determination. Objections were raised about the common practice of displaying American Indian human remains in museums. Concerns were expressed about the protection of the physical remains and spirits of their ancestors. Within this rising national activism, the American Indian Movement (AIM) was founded in 1968. Inadvertent discoveries of human remains in three locations in the Loess Hills in the early 1970s propelled Iowa into being the ***first state in the nation*** to pass laws that provide legal protection for all human remains regardless of age or origin found on public or private land, and for the reburial of native Indian remains. These three sites became focal points instrumental to the enacting of changes in the Iowa legal code and creating of precedent that led to similar legal changes in other states, ultimately presaging the 1990 passage of the ***federal Native American Graves Protection and Repatriation Act*** (NAGPRA). In the early 1970s, extensive archaeological investigations were undertaken as part of ***U.S. 34 highway work in the Glenwood area***, crossing east-west through the Loess Hills. Several graves were encountered at one site; the graves of Euroamerican settlers were disinterred and immediately reinterred in a nearby cemetery, but the grave of an American Indian was boxed up and shipped to Iowa City for study, along with artifacts from the project. Outrage over this incident spurred Maria Pearson (Running Moccasins), Yankton Sioux, to become an active vocal advocate for Indian rights and burial protection for the next three decades, not just within Iowa, but also nationally and internationally. Support from the Iowa Governor and

*Photograph of Maria Pearson (Running Moccasins) of the Yankton Sioux.*

overwhelming public support led to a precedent that both Indians and archaeologists would eventually agree upon, that the remains of Native Americans should be treated in the same fashion as non-Indians. This concept would eventually become the heart of Iowa's burial laws.

At the ***Siouxland Sand and Gravel Site*** (13WD402), north of Sioux City, human remains were unearthed in 1972 during quarry operations. Members of the AIM, local museum officials, law enforcement, and archaeologists converged on the site. Unfortunately, armed confrontation and dissenting viewpoints of how the situation should be handled resulted in nothing being resolved and much cultural information lost. In the end a substantial portion of this significant prehistoric burial complex was destroyed. It is estimated that as many as 200 individuals were interred at this location. Items interred with the dead included a wolf mask, long-nosed god mask, and shell beads perhaps speaking to the identities or status of certain individuals as well as exquisitely engraved vessels similar to those found at late prehistoric Caddoan sites in eastern Texas. These associated items indicate wide-ranging trade networks and date the cemetery site to the late prehistoric period, suggestive of strong ties to the Mill Creek culture. Evidence from this site expands the known cultural contacts of Middle Missouri tradition societies. Recently, the remaining portions of the Siouxland Sand and Gravel cemetery and surrounding area were purchased by the *Iowa Natural Heritage Foundation* and the property will become part of ***Stone State Park***.

In 1975, excavations at a borrow area for nearby school construction uncovered human remains ***just outside of Council Bluffs*** and in the central part of the Loess Hills. Once again law enforcement, Indian activists, and archaeologists were involved. The then-new State Archaeologist, Duane Anderson, contacted Maria Pearson for advice and assistance. She became a liaison with the other Indian leaders. Removal and reburial of the remains by a local undertaker was preferred initially by the Indian groups. However, when it was learned that the undertaker's method of removal was to use a bulldozer and backhoe, archaeologists using trowels and shovels seemed a better and preferable method for disinterment. Agreement was reached to allow a physical anthropologist to examine the remains locally, followed by reburial. This was a turning point in Indian-Archaeologist relations. The methods used in the identification, analysis, and reporting on the findings of human remains served as the model for what would become the legal process for the handling of human remains in discovery situations in Iowa.

Human remains inform on population demographics, diseases, stresses from diet and warfare, social alliances, and trade networks. They also speak to sacred places and cultural values, both in the past and present. The requirement to examine and report on all remains prior to reburial provides a net increase in the amount of information developed on ancient Iowans, compared to the near-absence of such examinations prior to passage of the reburial law. For example, human remains uncovered at the Turin site in the 1950s are the earliest dated burials known in Iowa. In spite of this significance and the nationwide coverage of the find at the time, the remains were not analyzed and results published until the 1980s following the reporting provisions of Iowa's law prior to reburial. These results provided an important contribution to the poorly known Middle Archaic populations in the eastern Plains and central North America. Analysis of burials eroding from a Middle Woodland site in Harrison County in the 1980s provided information on a small, stressed population and among the earliest evidence of scalping in North America.

What happened in Iowa was a statement to the country that American Indians and archaeologists can work together in a respectful relationship to achieve common goals. Maria Pearson was instrumental in advocating for Indian rights and burial protection at the

*Photograph of the location of the Turin burials. This site is the oldest human cemetery discovered in Iowa, dating to 3000 BC.*

state, national, and international levels. Maria actively worked with a number of national American Indian organizations pressing for a federal law about repatriation. She was involved with the development of the World Archaeological Congress (WAC) 1989 Vermillion Accord, a document promoting mutual respect between archaeologists and indigenous people, and the 1990 WAC First Code of Ethics. Often referred to as the **"Founding Mother of the modern Indian repatriation movement,"** and "the Rosa Parks of NAGPRA," her efforts embodied the concept that "while we cannot remake the past, we can all endeavor to learn about the past as understood from different perspectives, and resolve to work for a better future that will be more inclusive of diversity and sensitive to group and individual identities."

Maria Pearson helped archaeologists nationally and internationally realize that they are not the only stewards of the past. Indian people, too, are concerned about ancient sites. These sites are not just sources of information about the past but are the places where ancestors lived, worshiped, and were laid to rest. These places still resonate with living people. Maria also emphasized that human remains needed special attention and that the principles of respect and fair treatment must apply to Indian burials and bones. Confrontation, followed by compromise and joint action among Indians and archaeologists, led to passage of Iowa's burial protection and reburial law, broadened awareness and led to similar actions in other states, and ultimately to the national NAGPRA scene.

The public benefits by hearing and reading about the successful working relationship that was achieved among people from different cultures and with various attitudes toward a sensitive topic. A wide range of cooperative projects on Iowa's Indian heritage has resulted from the development of trust, understanding, and mutual respect. Through collaborative efforts with a public that values the past, landowners with a stewardship ethic, supportive descendant groups, and cooperative agencies and organizations, Iowa has maintained its national leadership in burial protection on both private and public land. By being proactive, Iowa anticipated and ethically solved many problems far in advance of the federal NAGPRA law. **The archaeology of the Loess Hills has thus played an integral role in the development of modern laws** and best practice methods involving human remains and has also led to important contributions to knowledge about past human adaptations in the region.

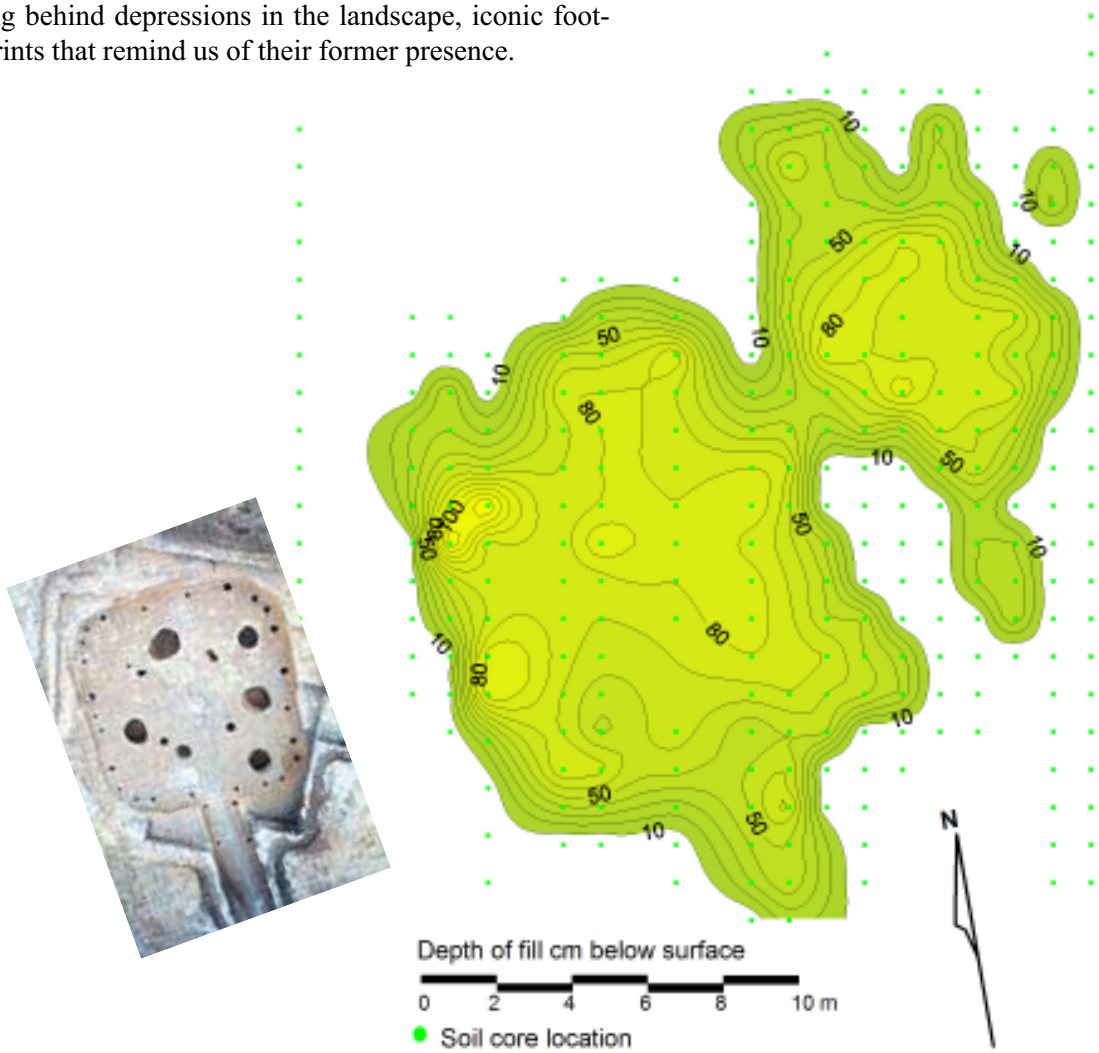
## People, Place, Time and Preservation

The Loess Hills, sandwiched between the western plains and eastern prairies and accessed by the Missouri, Platte, and Big Sioux rivers, was a crossroads of environments, cultures, native peoples, immigrants, and innovations. It is a place of rare natural beauty and deep history, a North American gem valued for its natural, cultural, and ancient landscapes. **Two intrinsic qualities of the archaeological record of the Loess Hills—the unprecedented concentration of well-preserved earthlodge dwellings and villages that speak to contrasting ways of life among the ancestral Plains Indians; and, events instrumental in establishing NAGPRA—are of unequivocal national significance.**

Today there are over 1,500 inventoried prehistoric archaeological sites in the seven Loess Hills counties and an untold number of sites yet to be discovered. While the entire spectrum of prehistoric sites can be found in the Loess Hills, it is the vast numbers of earthlodge dwellings and palisaded villages of the ancestral Plains Indians that captured the attention of the earliest explorers, antiquarians, and archaeologists to visit the region. Based on excavation and analysis of extant sites archaeologists have learned a great deal about the livelihoods and material culture of these first farmers in the Loess Hills. The earthlodge dwellings in the south are all within a day's travel of the confluence of the Platte and Missouri rivers and those in the north are equal distance to the Big Sioux and Missouri junction. Ongoing and future research is poised to trace the pathways of the earliest settlements from the Missouri floodplain up into the hills following tributary streams named Pony, Keg and Broken Kettle creeks.

Cultural descendants of these ancestral Loess Hills residents include the Three Affiliated Tribes – the Mandan, Hidatsa and Arikara Nations in North Dakota, and the Pawnee Nation of Oklahoma. Scenes of their earthlodge way of life were captured by some of the first Euroamerican travelers up the Missouri and Platte rivers in the late nineteenth and early twentieth centuries. The ancestral earthlodge dwellings in the Glenwood locality shaped from earth not unlike the hills themselves, have much to tell us about traditional architecture, community layout, cultural values, and demographics. The interiors with their deep subfloor pits once filled with corn, bison scapula hoes, fishing lures, and decorated pottery have much to say about economy, agriculture, trade, and alliances. Nearby, cemeteries continue to teach us about cultural values and national diplomacy. In the span of only a few generations, the first Loess Hills farmers abandoned their homes leaving behind depressions in the landscape, iconic footprints that remind us of their former presence.

The archaeological intrinsic qualities of the Loess Hills region speak to human population movements and change that set into motion a period of deep history starting with the domestication of the landscape by the first farmers, the emergence of the Plains village tribes, their eventual displacement, and later, significant influence on national policy and interactions between nations, tribal governments, and native peoples. ***All American Road*** status for the Loess Hills National Scenic Byway will go a long way to ensure that the existing and yet to be discovered archaeological sites in the Loess Hills that contribute to these stories will be preserved for the benefit of future generations. Future archaeological and ethnographic research focused on prehistoric and historic occupations in the Loess Hills will result in enriched regional histories of the Missouri River valley and Plains and will promote caretaking of the rich cultural heritage of the Loess Hills.




*Footprint of a recently discovered Glenwood earthlodge site (13ML102) prior to excavation. Inset photograph on left shows an excavated Glenwood earthlodge.*