THE UNEXPECTED IN UNLIKELY SPACES:
AN EXPERIENCE ALONG THE ROCK ISLAND CORRIDOR

by

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A REPORT

submitted in partial fulfillment of the requirements for the degree

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Approved by:

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ABSTRACT

Metropolitan Kansas City is a growing area, and the communities are considering new transportation options including a fixed guideway system. The addition of a fixed guideway system is often seen as controversial to people of the communities it affects, and many will not be in favor of it. Rail lines are great option for transportation because they are designed for the efficiency of getting people from place to place. However, they typically do not offer much of a visual experience to commuters. Making the transportation corridor more than just a transportation corridor through interactive, art installations will open people up to the idea of a fixed guideway system, provide trail users with destinations, and provide commuters with something interesting to look at creating a vibrant, visual experience. The RIC will become a place of destinations, recreation, vibrancy, sustainable features, and visual stimulants through the connection of the rail line, MetroGreen trails, installations, and the RIC communities.

Locating literature related to the commuter rail, visual design, experience, aesthetics, and sustainability helped to determine how these elements fit into this project. Conducting precedent studies helped set guidelines for the design of installations. A process of using certain specifications in ArcGIS determined general suitability for installations resulting in twenty-eight identified sites. The development of a basic design framework through a set of matrices involving installation attributes and site conditions helped to determine site suitability for specific types of installations, which allowed me to develop a design specific to the site conditions taking the number of suitable sites down to twenty-one. Each site has a set of parameters specific to each installation. Some sites are fully designed and developed, while others are to be commissioned out to artists for design and development. This set of proposals presents a vision of the RIC as a place of destinations, recreation, vibrancy, sustainable features, and visual stimulants through the connection of the rail line, MetroGreen trails, installations, and the RIC communities. The transformation of the corridor through art installations enhances people’s experience of the corridor, promotes both the rail line and the MetroGreen trails, connects people to the corridor, and encourages sustainability.

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An Experience Along the Rock Island Corridor

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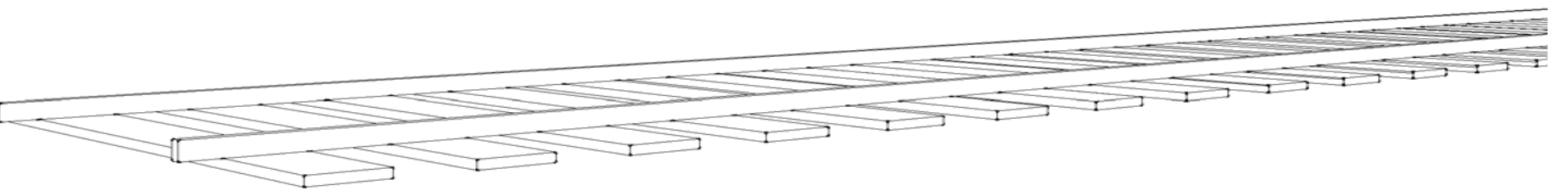
The Unexpected in Unlikely Spaces

An Experience Along the Rock Island Corridor



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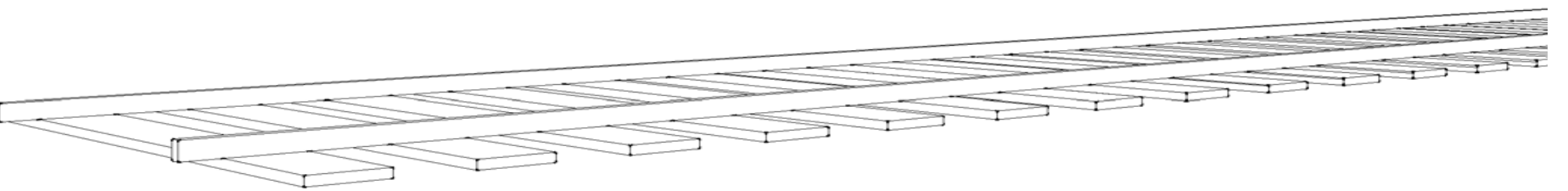
Anne Beamish, PhD

Abstract

Creating an Experience

Metropolitan Kansas City is a growing area, and the communities are considering new transportation options including a fixed guideway system. The addition of a fixed guideway system is often seen as controversial to people of the communities it affects, and many will not be in favor of it. Rail lines are great option for transportation because they are designed for the efficiency of getting people from place to place. However, they typically do not offer much of a visual experience to commuters. Making the transportation corridor more than just a transportation corridor through interactive, art installations will open people up to the idea of a fixed guideway system, provide trail users with destinations, and provide commuters with something interesting to look at creating a vibrant, visual experience. The RIC will become a place of destinations, recreation, vibrancy, sustainable features, and visual stimulants through the connection of the rail line, MetroGreen trails, installations, and the RIC communities.

Locating literature related to the commuter rail, visual design, experience, aesthetics, and sustainability helped to determine how these elements fit into this project. Conducting precedent studies helped set guidelines for the design of installations. A process of using certain specifications in ArcGIS determined general suitability for installations resulting in twenty-eight identified sites. The development of a basic design framework through a set of matrices involving installation attributes and site conditions helped to determine site suitability for specific types of installations, which allowed me to develop a design specific to the site conditions taking the number of suitable sites down to twenty-one. Each site has a set of parameters specific to each installation. Some sites are fully designed and developed, while others are to be commissioned out to artists for design and development. This set of proposals presents a vision of the RIC as a place of destinations, recreation, vibrancy, sustainable features, and visual stimulants through the connection of the rail line, MetroGreen trails, installations, and the RIC communities. The transformation of the corridor through art installations enhances people's experience of the corridor, promotes both the rail line and the MetroGreen trails, connects people to the corridor, and encourages sustainability.



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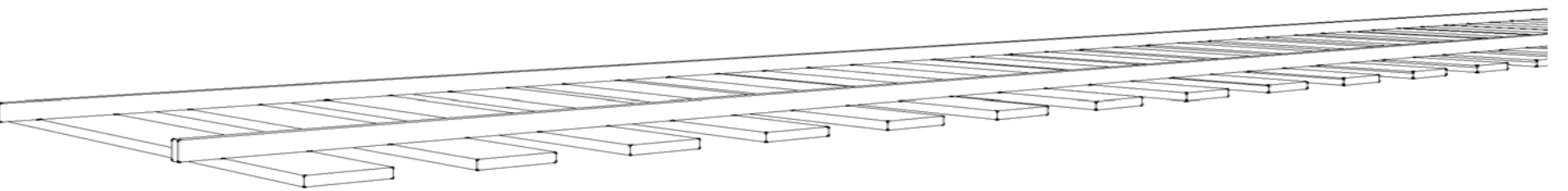
To Dad, The Goddess, and The Bombshell for your constant love and support as well as for always being there for a good laugh. To Jake for your support, innovative ideas, and gigantic knowledge base. To my classmates for keeping me sane in studio. To my committee members for their support and criticism, but specifically to Blake Belanger for helping me succeed with this project.



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"Burlington Northern Santa Fe Rail Bed". 2008. Photograph by Gene Bisbee. Courtesy of Biking Bis. Accessed April 22, 2012. Reproduced with permission from Biking Bis, http://www.bikingbis.com/2008/04/.

Bibliography

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"Burlington Northern Santa Fe Rail Bed". 2008. Photograph by Gene Bisbee. Courtesy of Biking Bis. Accessed April 22, 2012. Reproduced with permission from Biking Bis, http://www.bikingbis.com/2008/04/.

Appendix A: Project Progression

Fig A.0 Splash Page.

"Burlington Northern Santa Fe Rail Bed". 2008. Photograph by Gene Bisbee. Courtesy of Biking Bis. Accessed April 22, 2012. Reproduced with permission from Biking Bis, http://www.bikingbis.com/2008/04/.

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Demos, Laura. 2011. Sites 25-26 profiles. Source Data: Mid-America Regional Council GIS Department. 2011. "Ned3m_Jackson," "railroads," "rockisland_buffer," "rockisland_landuse."

Fig. C.14 Sites 25-26 Profile Graphs.

Demos, Laura. 2011. Sites 25-26 profile graphs. Source Data: Mid-America Regional Council GIS Department. 2011. "Ned3m_Jackson," "railroads," "rockisland_buffer," "rockisland_landuse."

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Demos, Laura. 2011. Sites 27-28 profiles. Source Data: Mid-America Regional Council GIS Department. 2011. "Ned3m_Jackson," "railroads," "rockisland_buffer," "rockisland_landuse."

Fig. C.16 Sites 27-28 Profile Graphs.

Demos, Laura. 2011. Sites 27-28 profile graphs. Source Data: Mid-America Regional Council GIS Department. 2011. "Ned3m_Jackson," "railroads," "rockisland_buffer," "rockisland_landuse."

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Demos, Laura. 2011. Ground plane not visible. Source Data: Mid-America Regional Council GIS Department. 2011. "Ned3m_Jackson," "railroads," "rockisland_buffer," "rockisland_landuse."

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Demos, Laura. 2011. Visible ground plane. Source Data: Mid-America Regional Council GIS Department. 2011. "Ned3m_Jackson," "railroads," "rockisland_buffer," "rockisland_landuse."

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Demos, Laura. 2011. Sites 1-6 sight lines. Source Data: Mid-America Regional Council GIS Department. 2011. "Ned3m_Jackson," "railroads," "rockisland_buffer," "rockisland_landuse."

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Demos, Laura. 2011. Sites 7-11 sight lines. Source Data: Mid-America Regional Council GIS Department. 2011. "Ned3m_Jackson," "railroads," "rockisland_buffer," "rockisland_landuse."

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Demos, Laura. 2011. Sites 12-19 sight lines. Source Data: Mid-America Regional Council GIS Department. 2011. "Ned3m_Jackson," "railroads," "rockisland_buffer," "rockisland_landuse."

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Demos, Laura. 2011. Sites 20-21 sight lines. Source Data: Mid-America Regional Council GIS Department. 2011. "Ned3m_Jackson," "railroads," "rockisland_buffer," "rockisland_landuse."

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Demos, Laura. 2011. Sites 22-24 sight lines. Source Data: Mid-America Regional Council GIS Department. 2011. "Ned3m_Jackson," "railroads," "rockisland_buffer," "rockisland_landuse."

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Demos, Laura. 2011. Sites 25-26 sight lines. Source Data: Mid-America Regional Council GIS Department. 2011. "Ned3m_Jackson," "railroads," "rockisland_buffer," "rockisland_landuse."

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Demos, Laura. 2011. Sites 27-28 sight lines. Source Data: Mid-America Regional Council GIS Department. 2011. "Ned3m_Jackson," "railroads," "rockisland_buffer," "rockisland_landuse."

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Demos, Laura. 2011. Adjacent sites. Source Data: Mid-America Regional Council GIS Department. 2011. "railroads," "rockisland_buffer," "rockisland_landuse."

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Demos, Laura. 2012. Station locations.. Source Data: Mid-America Regional Council GIS Department. 2011. "railroads," "rockisland_buffer," "rockisland_landuse."

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Demos, Laura. 2012. Sites 1-2 topography. Source Data: Mid-America Regional Council GIS Department. 2011. "Ned3m_Jackson," "railroads," "rockisland_buffer," "rockisland_landuse."

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Demos, Laura. 2012. Sites 7-8 topography. Source Data: Mid-America Regional Council GIS Department. 2011. "Ned3m_Jackson," "railroads," "rockisland_buffer," "rockisland_landuse."

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Demos, Laura. 2012. Sites 16-17 topography. Source Data: Mid-America Regional Council GIS Department. 2011. "Ned3m_Jackson," "railroads," "rockisland_buffer," "rockisland_landuse."

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Demos, Laura. 2011. Corridor hillshade. Source Data: Mid-America Regional Council GIS Department. 2011. "Ned3m_Jackson," "railroads," "rockisland_buffer," "rockisland_landuse."

Appendix D: Precedent Studies

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"Burlington Northern Santa Fe Rail Bed". 2008. Photograph by Gene Bisbee. Courtesy of Biking Bis. Accessed April 22, 2012. Reproduced with permission from Biking Bis, http://www.bikingbis.com/2008/04/.

Fig. D.1 Bloom Strategy.

"Bloom." 2009. Rendering by Ball-Nogues Studio. Courtesy of Ball-Nogues Studio. Accessed November 3, 2011. Reproduced with permission from Ball-Nogues Studio, http://www.ball-nogues.com/#project-11.

Fig. D.2 Color Pop.

"Bloom." 2009. Rendering by Ball-Nogues Studio. Courtesy of Ball-Nogues Studio. Accessed November 3, 2011. Reproduced with permission from Ball-Nogues Studio, http://www.ball-nogues.com/#project-11.

Fig. D.3 Color Change.

"Bloom." 2009. Rendering by Ball-Nogues Studio. Courtesy of Ball-Nogues Studio. Accessed November 3, 2011. Reproduced with permission from Ball-Nogues Studio, http://www.ball-nogues.com/#project-11.

Fig. D.4 Bloom Plan.

"Bloom." 2009. Rendering by Ball-Nogues Studio. Courtesy of Ball-Nogues Studio. Accessed November 3, 2011. Reproduced with permission from Ball-Nogues Studio, http://www.ball-nogues.com/#project-11.

Fig. D.5 Bloom Section.

Demos, Laura. 2011. Bloom section. Digital diagram.

Fig. D.6 Views of the "Elastic Plastic Sponge".

"Elastic Plastic Sponge." 2009. Photographs by Ball-Nogues Studio. Courtesy of Ball-Nogues Studio. Accessed November 3, 2011. Reproduced with permission from Ball-Nogues Studio, http://www.ball-nogues.com/#project102.

Fig. D.7 Daily Change.

Demos, Laura. 2011. Daily change. Digital diagram.

Fig. D.8 Enchanted Highway Installations.

"Enchanted Highway in Regent, North Dakota." 2008. Photograph by Gary Greff. Courtesy of EnchantedHighway.net. Accessed November 3, 2011. Reproduced with permission from EnchantedHighway.net, http://www.enchantedhighway.net/.

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Demos, Laura. 2011. Installation placement. Digital diagram. Source Data: "Enchanted Highway in Regent, North Dakota." 2008. Photographs by Gary Greff. Courtesy of EnchantedHighway.net. Accessed November 3, 2011. Reproduced with permission from EnchantedHighway.net, http://www.enchantedhighway.net/.

Fig. D.10 Running Fruit Ladders Strategy.

Demos, Laura. 2011. Running fruit ladders. Source Data: "Large Art Celebrating Small Farms." 2006. Rendering by John Maher. Courtesy of Running Fruit Ladders. Accessed October 12, 2011. Reproduced with permission from Running Fruit Ladders, http://www.maherart.com/RunningFruitLaddersProjectDescription.htm.

Fig. D.11 Contrast.

"The Sky is the Limit." 2011. Photograph by Friends of the High Line. Courtesy of Friends of the High Line. Accessed November 3, 2011. Reproduced with permission from Friends of the High Line, http://thehighline.org/about/public-art/kim-beck-skywriting.

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"The Sky is the Limit." 2011. Photograph by Friends of the High Line. Courtesy of Friends of the High Line. Accessed November 3, 2011. Reproduced with permission from Friends of the High Line, http://thehighline.org/about/public-art/kim-beck-skywriting.

Fig. D.13 Messages.

Demos, Laura. 2011. Messages. Digital diagram.

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"Maya Lin's Storm King Wavefield." 2011. Photograph by Jerry L. Thompson. Courtesy of © Storm King Art Center. Reproduced with permission from © Storm King Art Center.

Fig. D.15 Motion Parallax.

Demos, Laura. 2011. Motion Parallax. Digital diagram.

Fig. D.16 Natural Effects.

1: "Maya Lin's Storm King Wavefield." 2011. Photograph by Jerry L. Thompson. Courtesy of © Storm King Art Center. Reproduced with permission from © Storm King Art Center.

2: "Maya Lin's Storm King Wavefield." 2011. Photograph by Jerry L. Thompson. Courtesy of © Storm King Art Center. Reproduced with permission from © Storm King Art Center.

3: "Maya Lin's Storm King Wavefield." 2011. Photograph by Jerry L. Thompson. Courtesy of © Storm King Art Center. Reproduced with permission from © Storm King Art Center.

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Appendix B

Literature Map

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List of Abbreviations

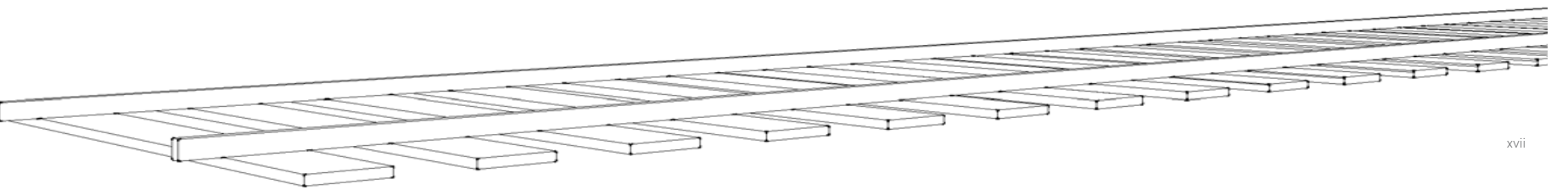
CSP: Creating Sustainable Places: "A regional plan for sustainable development in greater Kansas City" (MARC 2011).

KCMO: Kansas City, Missouri

MARC: Mid-America Regional Council: "A nonprofit association of city and county governments and the official metropolitan planning organization for the Greater Kansas City region. MARC promotes regional cooperation and innovative solutions for issues that reach across the boundaries of individual communities. MARC is governed by a board of local elected officials, with guidance from a broad array of committees whose work focuses on planning for efficient transportation systems, a healthy environment, enhanced emergency response capabilities, effective government and caring communities." (MARC, 2011)

RFP: Request for Proposal

RIC: Rock Island Corridor: "The old railroad corridor that runs from Pleasant Hill, MO to the Truman Sports Complex in Kansas City, KS" (MARC 2011).



Glossary

Aesthetics: "The perception of something through not only the visual sense, but also a number if not all of the senses" (Meyer, 2008).

Appearance: The perception of something strictly through vision.

Aquaponics: "Aquaponics is the combination of aquaculture (fish farming) and hydroponics (soilless plant culture). In aquaponics, the nutrient-rich water that results from raising fish provides a source of natural fertilizer for the growing plants. As the plants consume the nutrients, they help to purify the water that the fish live in. A natural microbial process keeps both the fish and plants healthy. This creates a sustainable ecosystem where both plants and fish can thrive" (Nelson 2011).

Attention: "A kind of spotlight, highlighting a 'coherence field" of perception from among neuron groups competing to represent sensory information to the brain. Attention casts the deciding vote in what we perceive of the world and so is the beast to harness in a world of cognitive overload" (Jackson 1960, 137).

Commuter Rail: "A fixed guideway that provides longer distance trips with higher capacity cars and more of them, focusing on commuter trips" (MARC 2011).

Distraction: Consumed by information outside the immediate surroundings through the virtual reality of a mobile device.

Experience: Visual interaction of rider and the landscape encompassment of the rail line along the RIC. Adapted from (Bourassa 1991, 42)

Fixed Guideway: "Any transit service that uses exclusive or controlled rights-of-way or rails, entirely or in part. The term includes heavy rail, commuter rail, light rail, monorail, trolleybus, aerial tramway, inclined plane, cable car, automated guideway transit, ferryboats, that portion of motor bus service operated on exclusive or controlled rights-of-way, and high-occupancy-vehicle (HOV) lanes" (U.S. Dept. 2011).

Installation: Public art implemented along the RIC.

MetroGreen: "An interconnected system of public and private natural areas, greenways and trails linking communities throughout the Kansas City metropolitan area" (MARC 2011).

Mobile device: Any sort of handheld electronic including, but not limited to, mobile phones, laptops, tablets, music players, and gaming systems.

Motion Parallax: "Relative displacement of objects caused by change in observer position" (Cutting 1986, 185).

Physical Program: An installation on a site that intersects with MetroGreen and is physically usable by MetroGreen users.

Radiant Color Film: "Reflective color film that changes dependent on the viewing angle" (3M 2012).

Sustainability: The use of natural elements to better the environment and reduce the community's carbon footprint.

Technophilia: "Affection for and dependence upon technology" (Thayer 1994, 4).

Terrain Vague: "A terrain of occupation by moving commuters – empty in terms of resonance, value or mental image but presenting potential for design with motion that could reclaim its obsolete character and reveal its hidden or poetic side" (Kamvasinou 2006, 4).

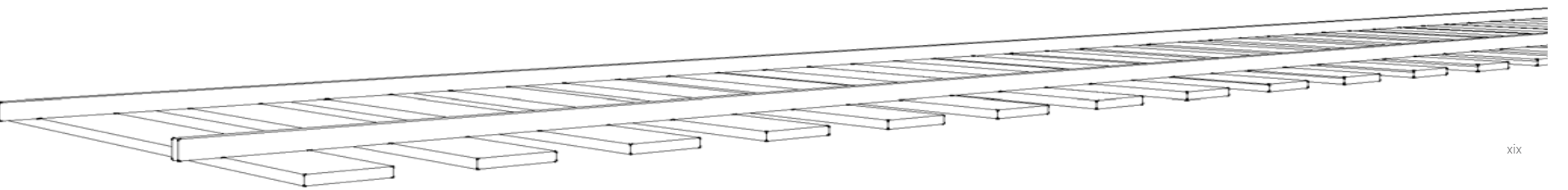
Thermochromism: "The phenomenon of reversible change of color of a substance with change of temperature" (Merriam-Webster 2012).

Topophilia: "Affective bond between people and place" (Thayer 1994, 4).

Transitional Landscapes: "spaces/interfaces between city and countryside commonly experienced on the move; although highly present in the commuting life of metropolitan areas, they are perceived as obsolete by the people who mostly use them - the everyday passengers" (Kamvasinou 2006, 1).

Visual Stimulation: Physically attractive elements that draw attention through the sense of sight.

Xylochime: An interactive musical instrument that combines the attributes of a xylophone and a windchime through a set of vertical, free standing tubes and a set of vertical, hanging tubes that when hit against each other produce pleasing sounds.



"The inclusion of art and the consideration of aesthetic elements in transportation planning and design provide opportunities to significantly improve the urban landscape."

-Hubbard 2011, 169

Introduction

Introduction

MARC's Creating Sustainable Places Initiative

"Over the next thirty years, the population of the Greater Kansas City region is expected to expand from today's 2 million to an estimated 2.7 million" (MARC 2011). The Mid-America Regional Council has developed the Creating Sustainable Places initiative to aid in the planning process for the growth and development of KCMO. The vision for this initiative is to create Vibrant, Connected, and Green communities in relation to the economy, society, and the environment (MARC 2011). As a part of the CSP, there are a number of transportation options for the region. One of these includes a fixed guideway system for the Rock Island Corridor, which is the basis for this project.

The use of art installations along the rail line corridor to create an experience for commuters establishes a sense of social sustainability. For a place or community to become sustainable, people must first care about the place. Having a connection to a place is known as topophilia. The proposals in this project create a visual experience to help passengers achieve a sense of topophilia, which then enables them to care about their communities and become more socially sustainable as a community.

The experience creates emotional connections to the corridor as well as physical connections to MetroGreen, a set of trails through KCMO, and from community to community. Each installation creates a vibrancy that enhances the environment, and some of the installations use sustainable strategies through native plants and natural resources. These installations make for a green corridor that affect the environment and community in a positive way.

Dilemma

The Kansas City Metropolitan Area continues to grow and new structures are added continuously to accommodate the population. Integrating these structures with a possible commuter rail in the RIC may not provide a pleasing visual experience for commuter rail passengers nor one that they care to look at. The structures will be built adjacent to the rail line, but their facades will face the main roads, leaving their backs and sides to the rail line (See Fig. 1.1 for an example). The aesthetic value of a transportation corridor is important to quality of life, but is often lost as transportation corridors are designed for efficiency in getting people from place to place.

Fig. 1.1 Exposed Facades: Buildings around rail lines back up against the rail sometimes separated by a wall providing no visually pleasing experience.

Currently, the RIC is largely rural, open land much of it used for agriculture. Other areas are forests or home to other plant growth, but residential areas become more common closer to downtown.

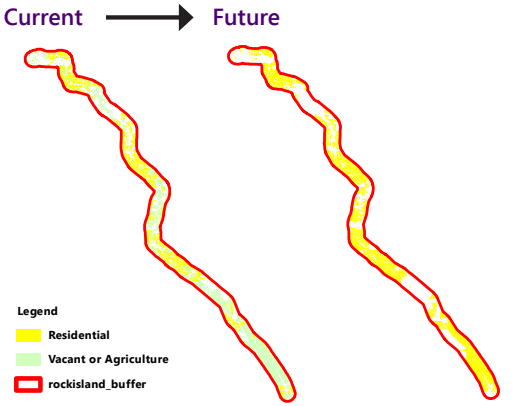
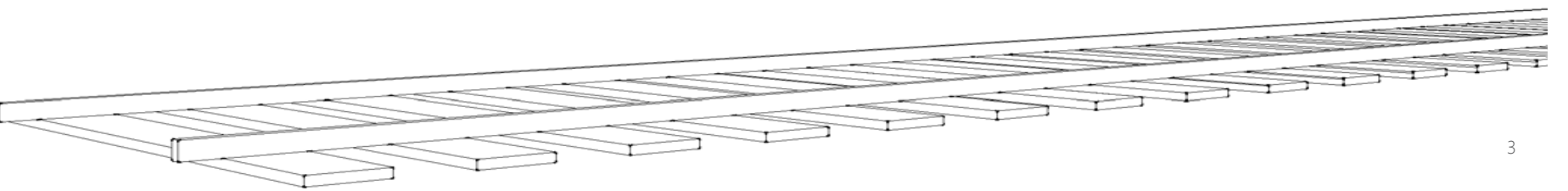


Fig. 1.2 RIC Conditions: The current RIC is home to a large amount of agricultural land as well as residential, Whlie they mesh together, there is more residential in the northern half and more agricultural land is the southern half. MARC's future land use plan infills the RIC will residential areas and removes all agricultural land.



A typical commuter route moves from suburb to suburb, into the city, and back again, which leaves passengers seeing only residential areas, clusters of buildings, parking lots, and pieces of leftover land. However, a rail service leaves passengers to choose what to watch or do as seen in Fig. 1.3. Although watching the rail line surroundings is rarely interesting enough to attract passengers given the general tedium and monotony along transportation corridors (See Fig. 1.4). Transportation corridors do not typically offer entertaining, visual experiences, which makes topophilia, "the affective bond between people and place," unlikely (Thayer 1994, 4). The rail line provides no connection for commuters. It is their mode of transportation and nothing more. Because passengers do not have to focus on driving, a rail line corridor is ideal for visual stimulation to create a sense of topophilia. Riders have the freedom to take in their surroundings.

Fig. 1.3 Sleeping Commuter: Rail line passengers find ways to pass the time.

Fig. 1.4 Monotonous Commutes: Typical rail corridors are often monotonous, where passengers see the same type of environment along the entire corridor.

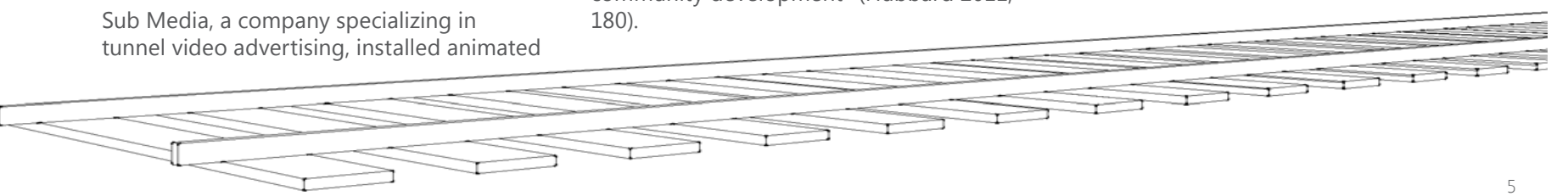
Thesis

The addition of a fixed guideway system is often seen as controversial to people of the communities it affects, and many will not be in favor of it. However, making the transportation corridor more than just a transportation corridor through visual, artful installations will open people up to the idea of a fixed guideway system. The RIC will become a place of destinations, recreation, vibrancy, sustainable features, and visual stimulants through the connection of the rail line, MetroGreen trails, installations, and the RIC communities.

Those who choose to use the rail line often find ways to pass the time and enjoy their commute. However, implementing visual, artful installations along the RIC in parks, open space, and public/semi-public spaces will give rail line commuters a vibrant, visual and ever changing view to enhance their commute and provide opportunities to experience topophilia. Community members can benefit from interactive elements of the installations where these designed spaces intersect the MetroGreen trails. Thus, creating this corridor of installations not only engages commuters, but promotes both rail ridership and the MetroGreen trails.

Sub Media, a company specializing in tunnel video advertising, installed animated ads in the form of a flip book in subway tunnels in Atlanta and New York City. "Bored commuters seemed to like the films. Burke Inc., a Cincinnati-based marketing research firm, found that out of 600 people surveyed, more than 90 percent liked the Sub Media ad for Coca-Cola's Dasani bottled water, and four out of five people liked it a lot. About 90 percent said they looked forward to future motion-picture advertisements" (Federgreen, 2002).

Advertisers use art to attract attention and promote products. Art installations, however, could use the same idea without the promotion. This kind of installation along a rail corridor would not only give commuters an enjoyable visual experience, but encourage them to visit the spaces they see along the rail line particularly the intersections with the MetroGreen trails. The visual perspective of the commuter and the physically interactive perspective of the MetroGreen user would make creating visually pleasing spaces affect different types of users and offer contrasting experiences. "Art and aesthetic design are tools to help mitigate the negative impacts of auto travel, encourage the use of alternative modes, and promote community development" (Hubbard 2011, 180).



Project Goals

Project goals were established through the combination of research, literature reviews, precedent studies, discussions with MARC, and the CSP goals.

Promote implementation of a fixed guideway system

Provide a visual experience

Enhance the commute

Promote ridership and MetroGreen use

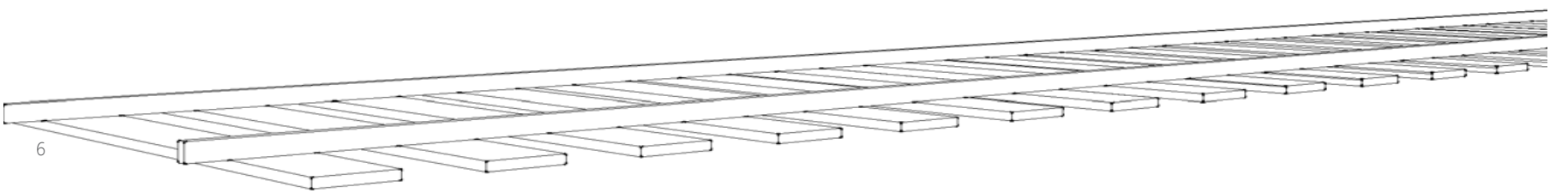
Create vibrant destinations

Connect riders to the corridor

Create a green corridor

Encourage sustainability

Transform the RIC into something more than a transportation corridor



RIC Background

"The Rock Island corridor begins in the heart of Kansas City, Mo., sharing a common corridor segment with the I-70 corridor approximately to the eastern edge of Kansas City, Mo., and then follows the old Rock Island rail corridor through Raytown, Kansas City, Lee's Summit, and Greenwood in Jackson County and further south to Pleasant Hill in Cass County" (MARC 2011). Fig 1.5 shows the location of the corridor and the communities it runs through.

Currently, the RIC is largely rural, open land much of it used for agriculture. Other areas are forests or home to other plant growth, but residential areas become more common closer to downtown.

As KCMO grows over the next couple decades the RIC plans to change immensely. The outlook for change involves large amounts of undeveloped space disappearing and transforming into communities rich with residential neighborhoods, commercial centers, industrial areas, and useable green space. These plans for the future will most likely change and vary as time passes and KCMO evolves as the population grows.

Fig. 1.5 RIC Location: The Rock Island Corridor runs south from downtown Kansas City to Pleasant Hill, Missouri.

MetroGreen Locations

MetroGreen is "an interconnected system of public and private natural areas, greenways and trails linking communities throughout the Kansas City metropolitan area" (MARC 2011). MetroGreen serves as an important two way element of this project. The rails helped to determine installation use and development and in turn the installations enhance and promote the trail system. Several of the sites that intersect the MetroGreen trails have interactive art installations.

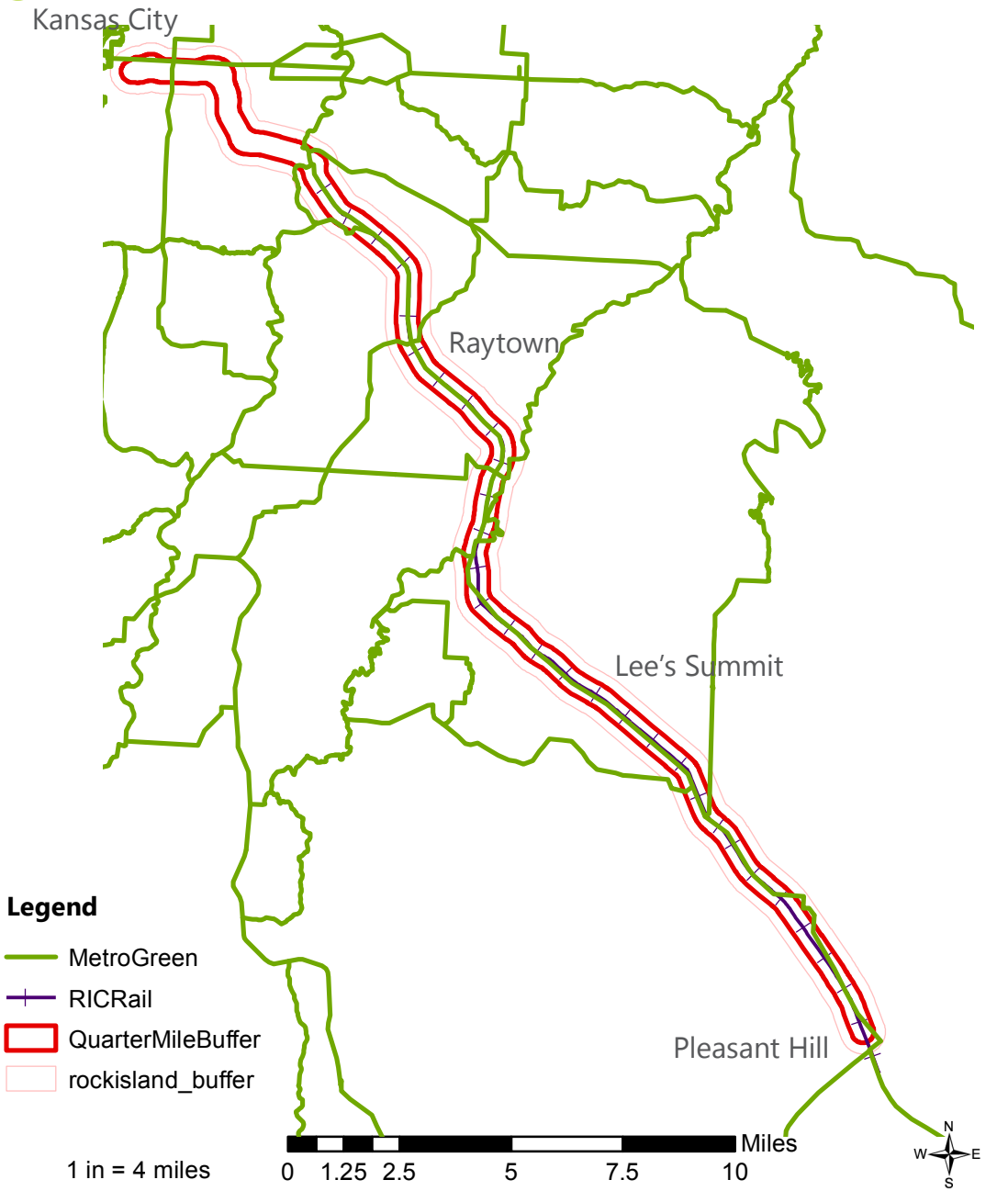
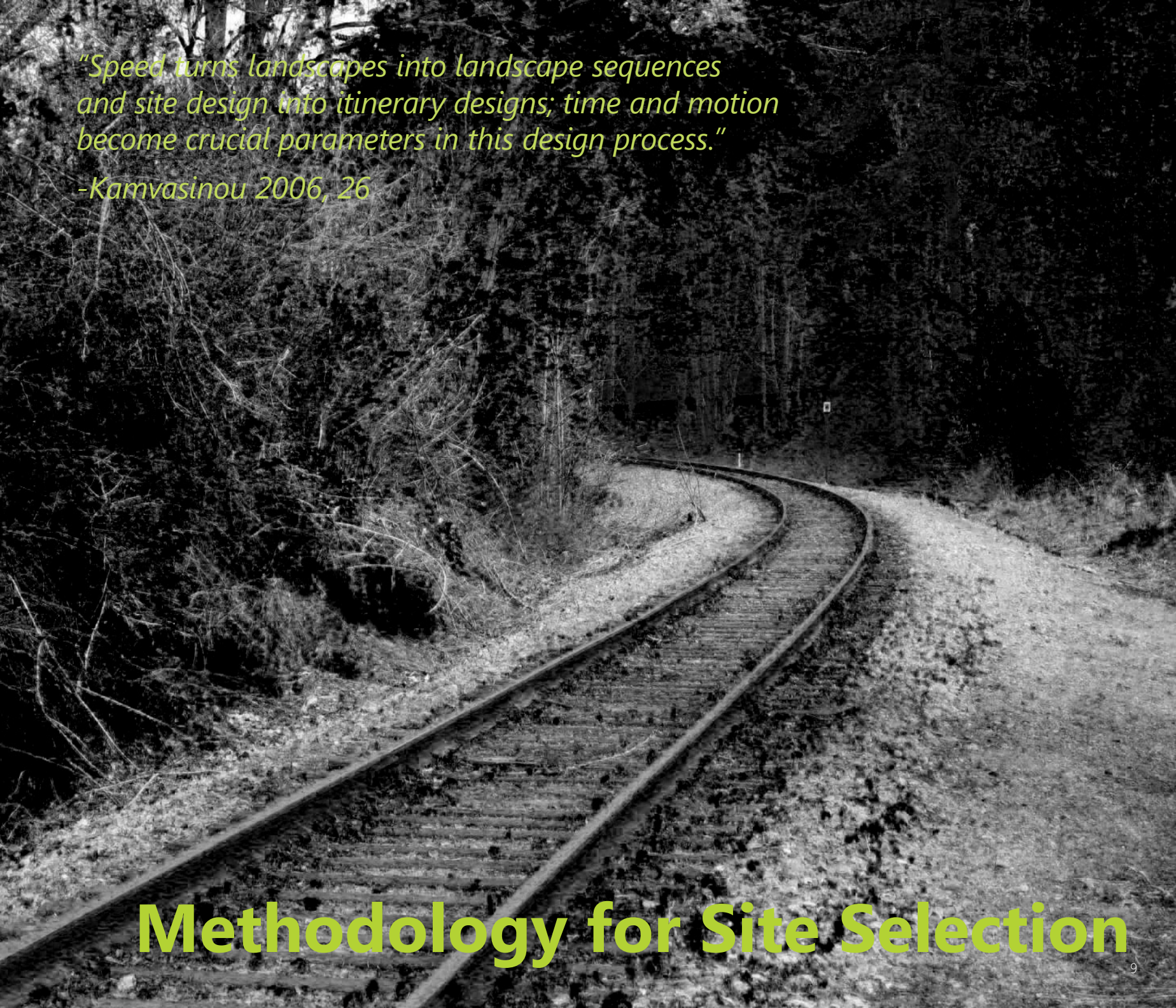


Fig. 1.6 MetroGreen Locations. The MetroGreen trails run throughout the Kansas City region and intersect the RIC.



"Speed turns landscapes into landscape sequences and site design into itinerary designs; time and motion become crucial parameters in this design process."

-Kamvasinou 2006, 26

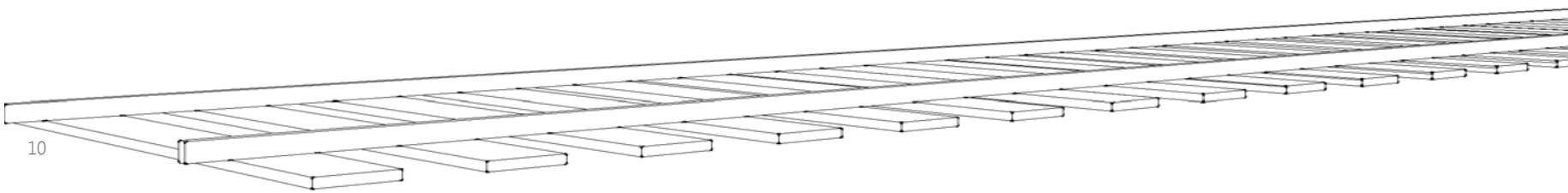
Methodology for Site Selection

Site Selection

Initial Suitability

Inventory and analysis determined spaces suitable for visual installations. To accomplish this, MARC's future land use plan needed to be considered because the current RIC has a large number of potential sites along most of the route. Sites categorized as parks, open space, and public/semi-public were deemed initially suitable. A 1/4 mile buffer around the rail line ensures the best visual access and helped in narrowing site selections. Examining these sites and comparing them to current development allowed more to be eliminated. Sites that are too small or on the same property as a building were also eliminated because larger sites offer more design opportunities, and sites without buildings connect the installation only to the land instead of any buildings. Visual access from the rail line was the last step in determining general suitability. I conducted a general site inventory and analysis for the entire corridor to identify any conditions that may affect program and design elements.

*See Appendix C for all maps relevant to site inventory and analysis.



Future Land Use

The future land use plan (as determined by MARC) for the Rock Island Corridor plans for a large increase in population. This is evident in the infill of single family homes. However, the amount of open space will be greatly diminished. All agricultural land will be populated with new structures to accomodate the growing communities. This reduces the amount of space available for installations.

The future land use plan was the first factor in determining suitable sites for installations because the current RIC has a large number of potential sites along most of the route. The future land use plan allowed for a much smaller amount of sites to be identified.

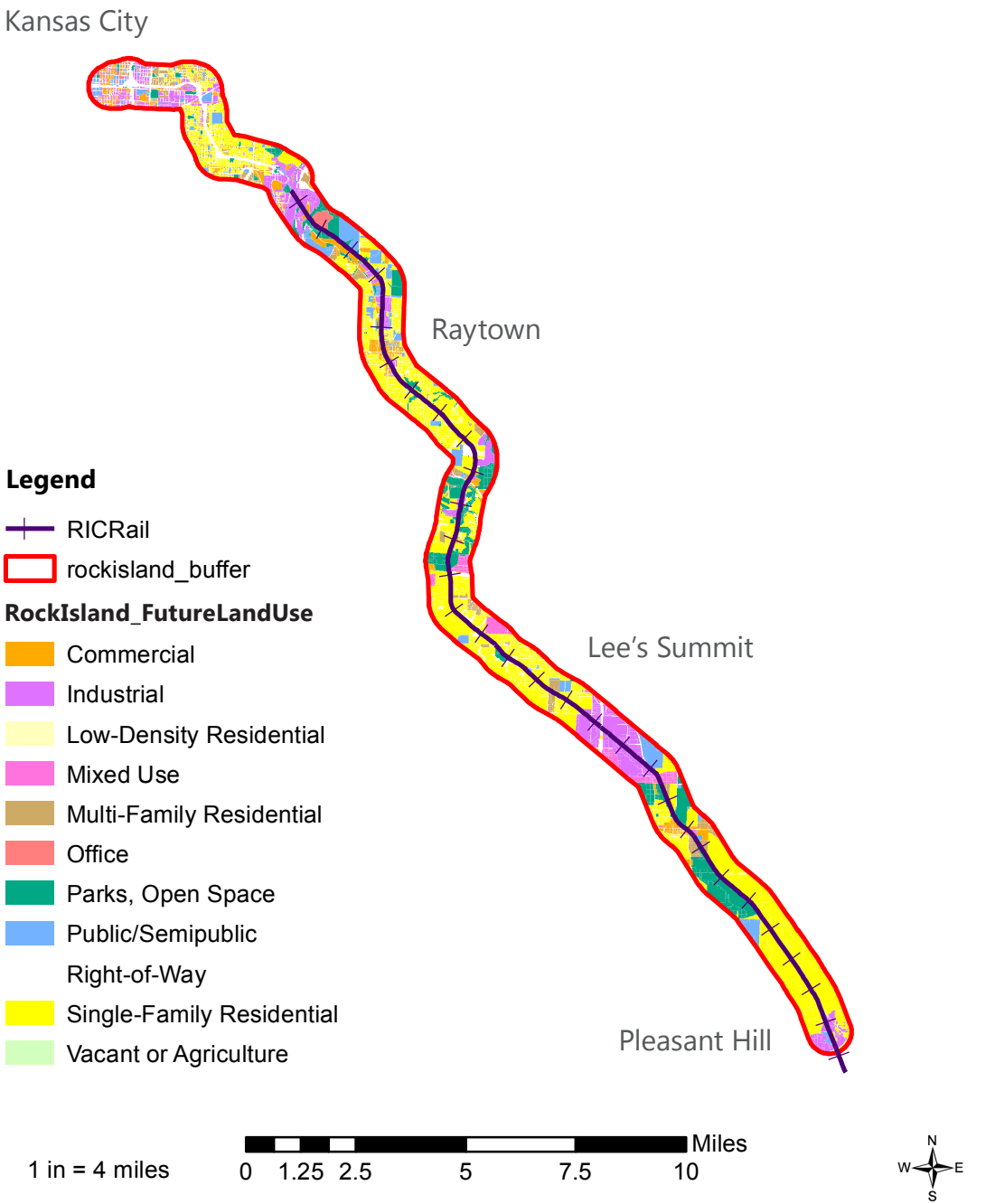
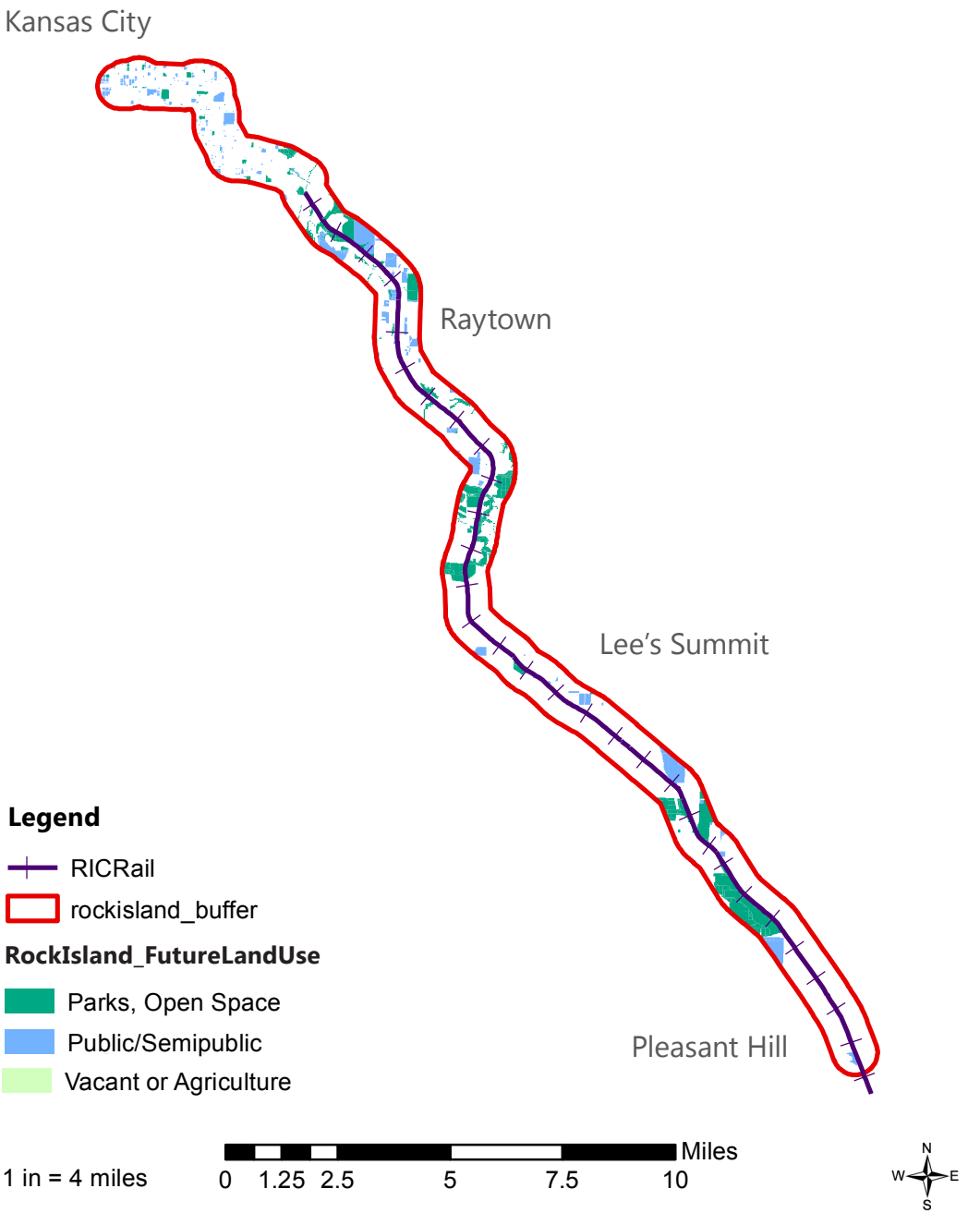


Fig. 2.1 Future Land Use: The future land use plan for the corridor plans for a large amount of single-family residential.

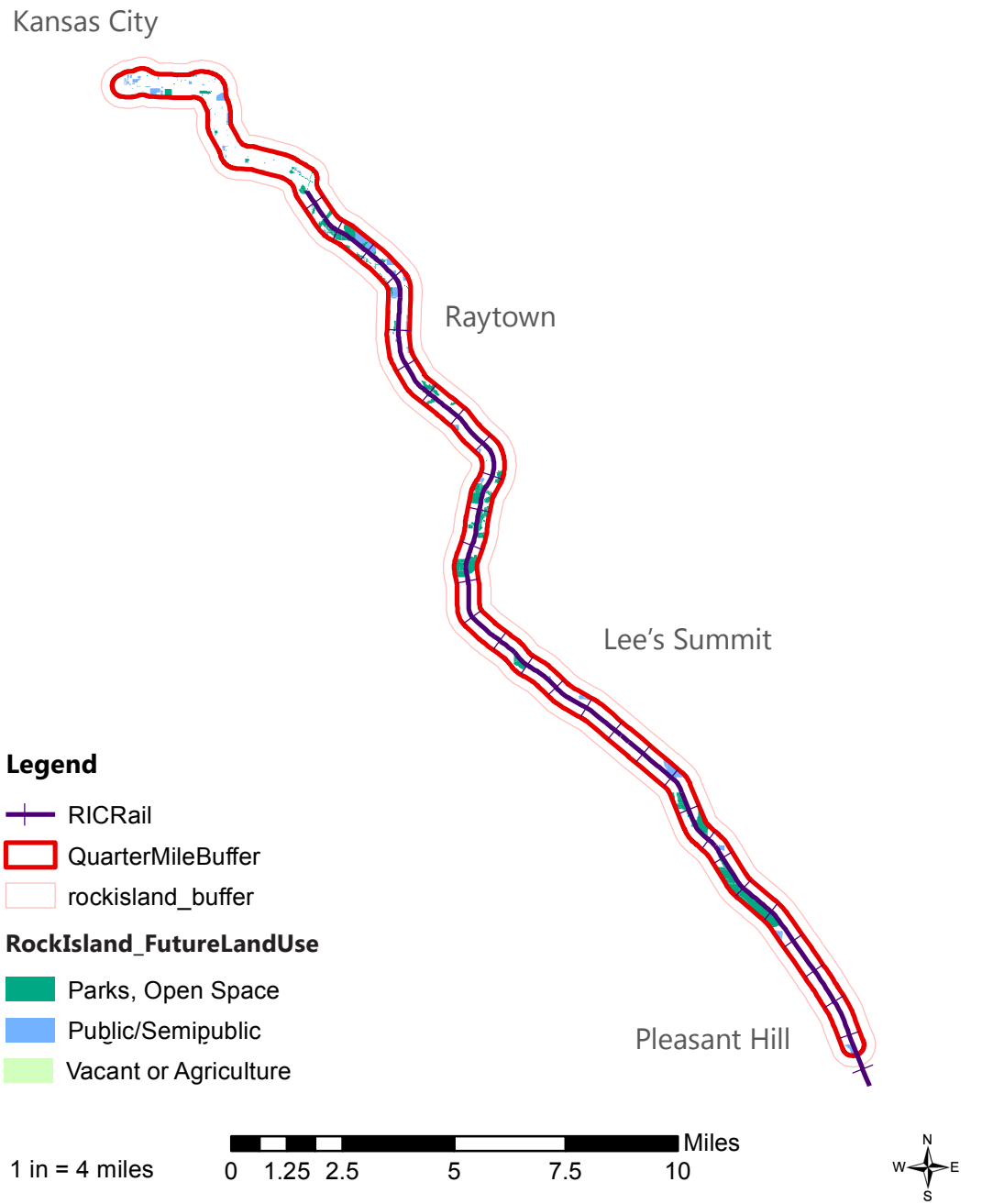
Available Sites



The future land use plan (as defined by MARC) was used to determine available sites based on the categories of parks, open space, and public/semipublic spaces as these are the most suitable based on having a large amount of open space for installations.

Fig. 2.2 Available Sites: There is a wide variety of parks, open space, and public/semipublic spaces available for installations.

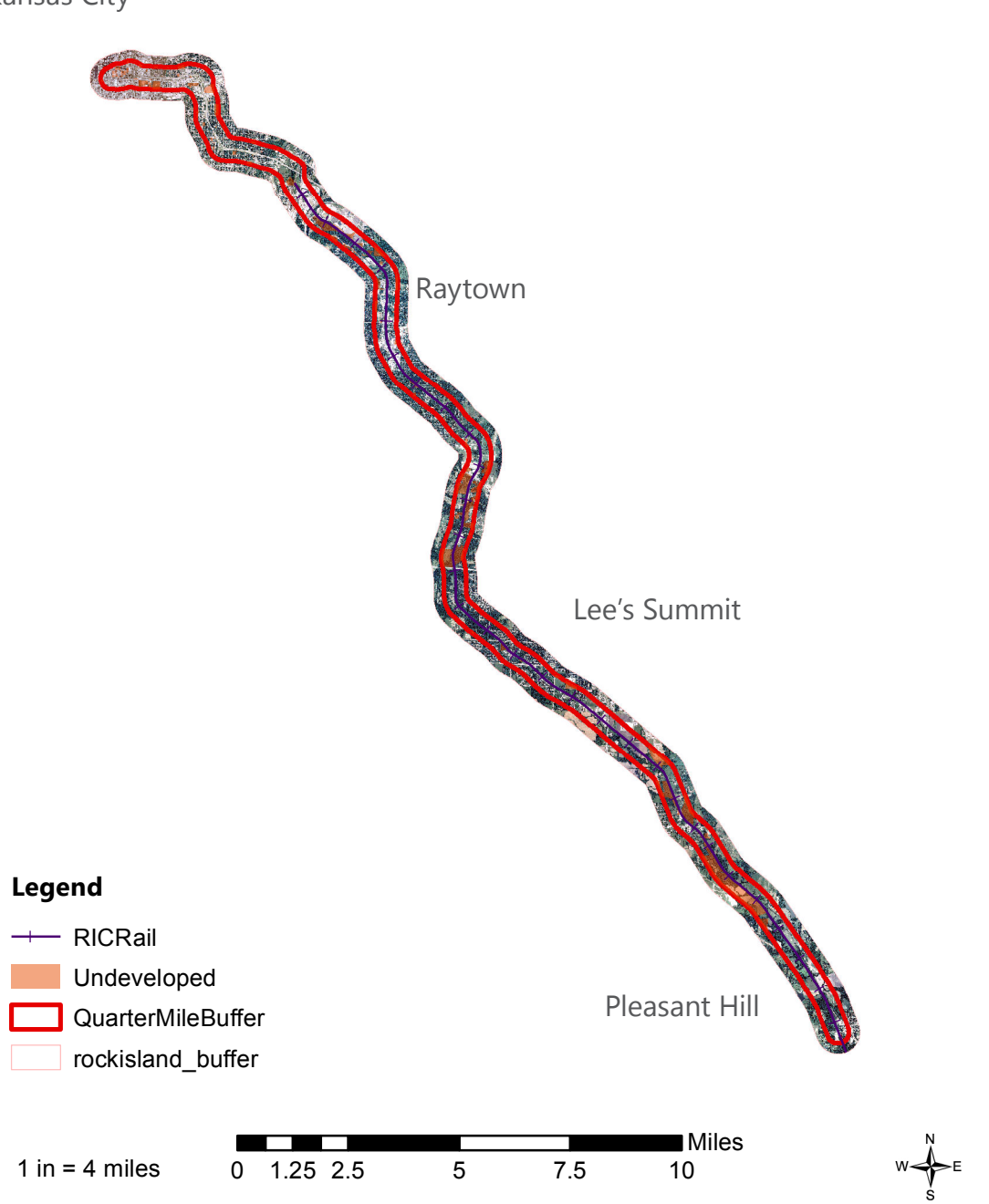
1/4 Mile Buffer



The current buffer along the Rock Island Corridor is 1/2 mile out to both sides of the rail line. A 1/4 mile buffer is more beneficial as installations are more visible from the rail with fewer obstructions. This allowed for the available sites to be narrowed down to closer proximity sites.

Fig. 2.3 1/4 Mile Buffer" A 1/4 mi buffer around the rail line ensures better visibility of installations.

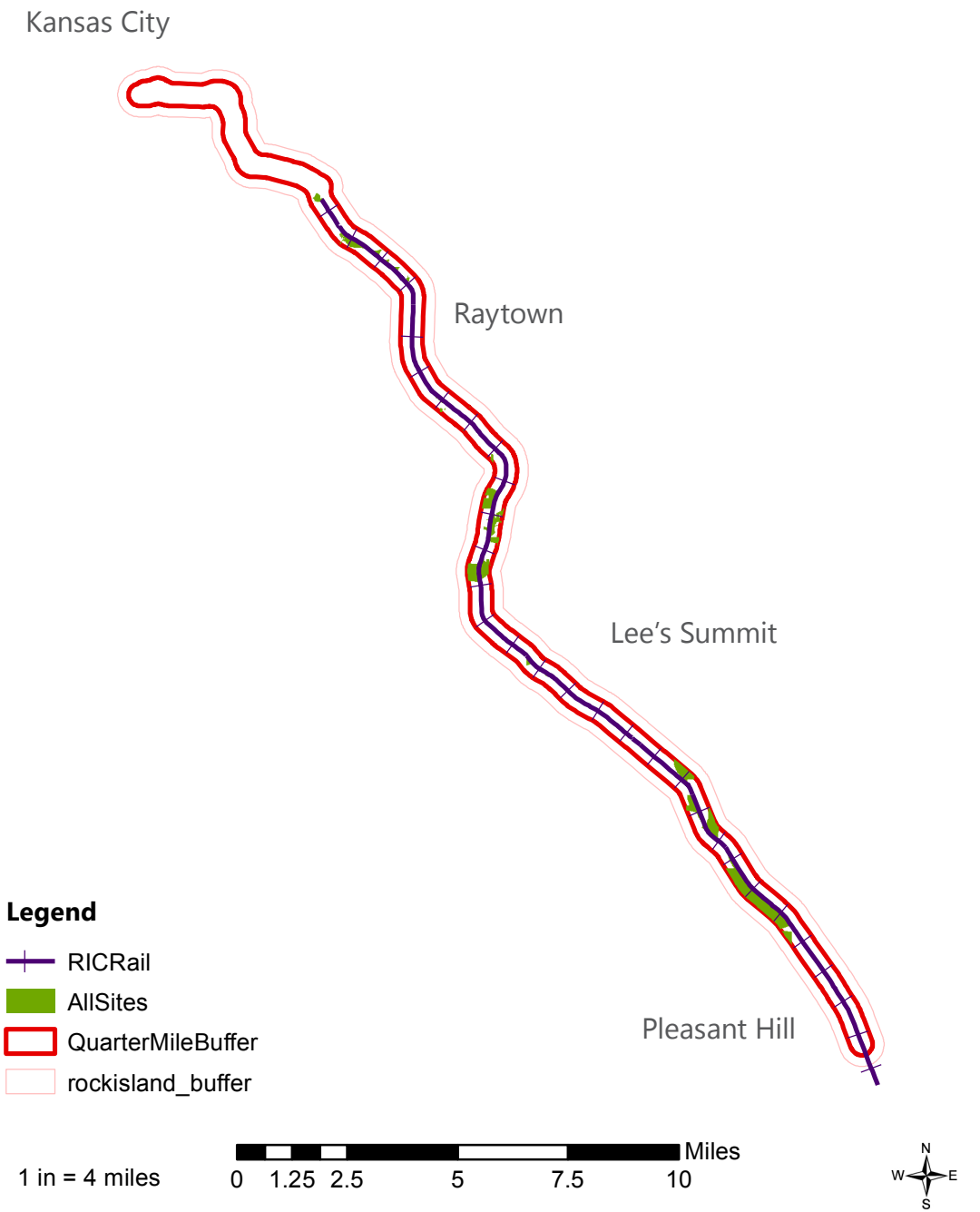
Undeveloped



By overlaying the suitable sites on an aerial image, sites were narrowed down further by comparing the suitable sites to the current conditions. Current sites deemed developed (contains built infrastructure and/or is used for an activity i.e. ball parks) were eliminated from the running of suitable sites. Also, sites that are too small or on the same property as a building were also eliminated.

Fig. 2.4 Undeveloped: Elimination of developed sites ensures less conflicts and more open space.

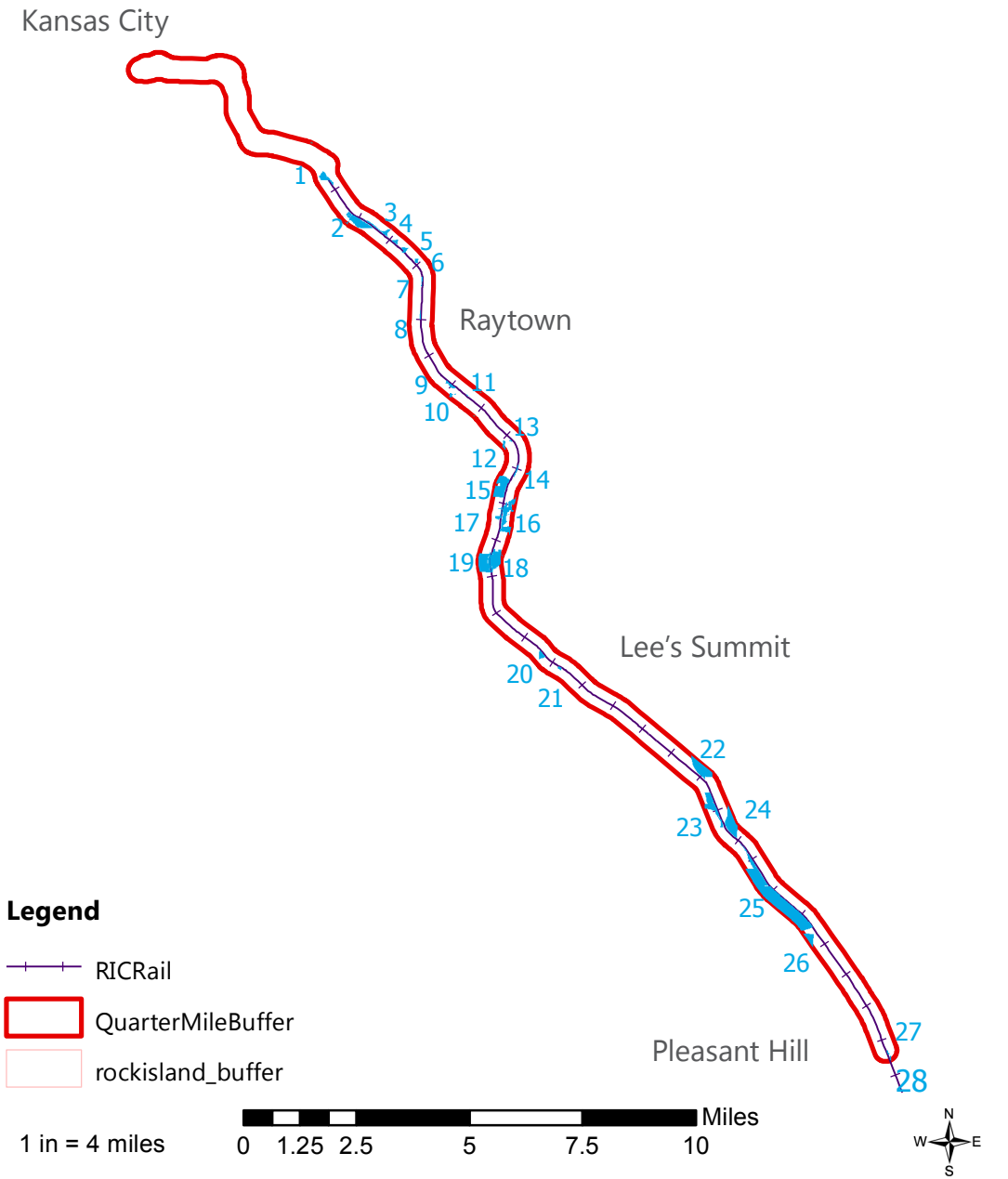
Visual Access



Visible access was the last step in determining suitable sites along the corridor. By looking at the future land use plan, final site suitability was determined by visual access from the rail. If there was any type of development in the line of sight between site and rail then that specific site was deemed unsuitable. This step did not include an analysis based on topography. The remaining sites were determined to be suitable for installations. The large amount of sites allows for several options for installations and specific suitability is dependent upon the program and design of the installation.

Fig. 2.5 Visual Access: Visual access from the rail line was the final step in identifying suitable sites.

Identified Sites



Each site has been identified with a number to easily locate and reference specific sites.

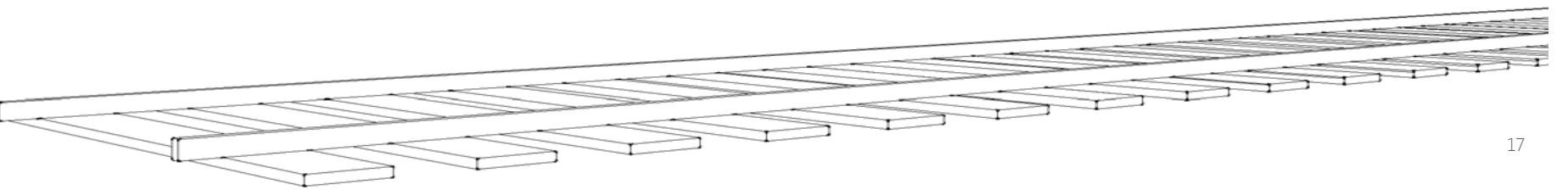
Fig. 2.6 Identified Sitess: 28 sites have been identified as suitable for installations.

Program Development

Design Framework

To create a general design framework, I created three linked matrices that helped to determine site suitability for specific types of installations. I evaluated each site based on attributes indicating site suitability for specific types of installations. Installation attributes include vertical, flat, patterns to continue across the rail and connect to adjacent sites, foreground blurring elements, large amounts of small, human scale installations that can stand out, large, physical, landform, aquaponics, solar art, and xylochimes. Each installation attribute requires a set of specific site conditions (see Table 1.1). The conditions include the relationship of the terrain to the rail line, adjacencies of sites, distance of each site from the rail line, landcover, intersection of MetroGreen, and visible, south facing slopes. Table 1.1 illustrates which conditions are essential, undesirable, and irrelevant to each installation attribute.

Table 1.2 illustrates which site conditions occur on each site. To determine suitability of sites for specific installation attributes, I examined Table 1.2 and compared it to the requirements of each installation attribute. Table 1.3 depicts which installation attributes can occur on each site. Using these matrices allowed for development of a more specific design concept for each site based on the combined attributes at each site and helped create a set of installations enhanced by site conditions.



Installation Attributes

Installation Attributes	Higher Elevation Than 4' Above Rail	Cannot See Ground Plane From 4' Above Rail	Lower Elevation Than 4' Above Rail	Able to See Ground Plane From 4' Above Rail	Adjacent Site Across Rail	Site Within 75' of Rail	Considerable Amount of Forest	Considerable Amount Without Forest	MetroGreen Intersect	Visible Clustered South Facing Slopes
Vertical	Necessary	Necessary				Undesirable				
Flat	Undesirable	Undesirable	Necessary	Necessary						
Installations/patterns to continue across the rail and connect to the adjacent site					Necessary	Necessary				
Foreground blurring element	Undesirable	Undesirable	Necessary	Necessary		Necessary		Necessary		
Large amount of small, human scale that can stand out						Necessary	Necessary			
Large								Necessary		
Physical									Necessary	
Landform	Undesirable							Necessary		
Aquaponics	Undesirable	Undesirable	Necessary	Necessary				Necessary	Undesirable	
Solar Art							Undesirable	Necessary		Necessary
Xylochimes			Necessary	Necessary				Necessary	Necessary	

Legend

Necessary	
Undesirable	
Irrelevant	

Table 1.1 Installation Attributes: This matrix illustrates which site attributes are needed, undesirable, and irrelevant for each installation attribute.

Site Attributes

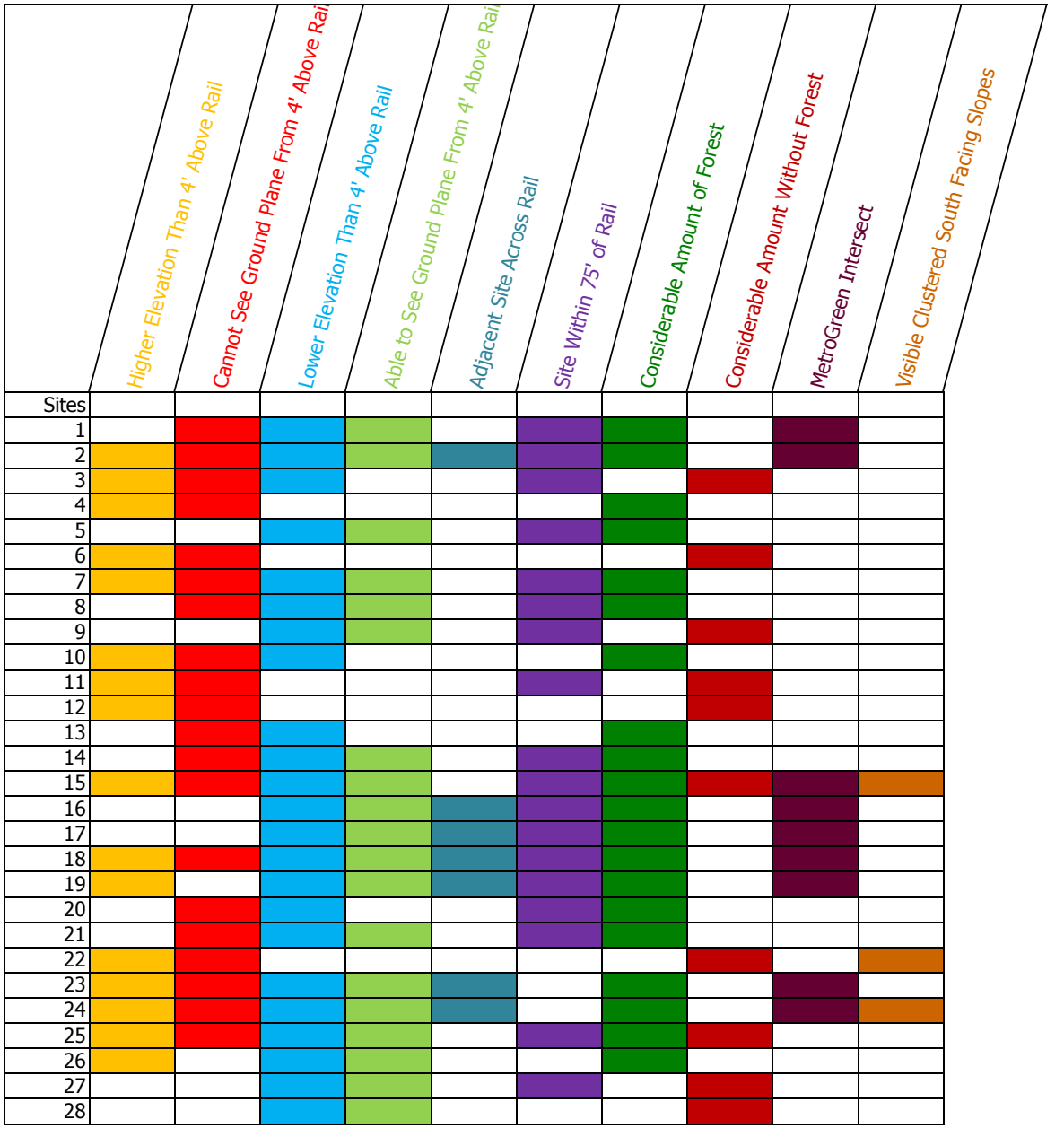


Table 1.2 Site Attributes: This matrix illustrates which attributes characterize each site. (See Appendix C, Fig. C.1-C.31 for maps that illustrate the findings of this matrix)

Site Suitability for Installations

Table 1.3 Site Suitability for Installations: This matrix illustrates which sites are suitable for each installation attribute. (See Appendix C, Fig. C.32-C.41 for maps that illustrate the findings of this matrix)

Site Selection

Final Selection

The final selection of sites for development is shown in Fig. 2.7. After further investigation of the 28 sites, I deemed 7 of them unsuitable, and they were eliminated from the design development. These sites were not chosen for development due to low visibility, proximity to other installations, and station locations. Sites 1, 4, 6, 12, and 13 had very low visible access from the rail leaving few options for installations. Site 26 is adjacent to Site 25 on the same side of the rail and on the end where the majority of Site 25's installation occurs. This proximity offers no break in the experience. and could appear to be one installation rather than two. Site 24 is the location of one of the commuter rail stations. While this is not an issue, I wanted to keep the installations between stations for a sense of movement. These 7 sites have been left in the maps to avoid confusion as all site inventory and analysis was completed for all 28 sites.

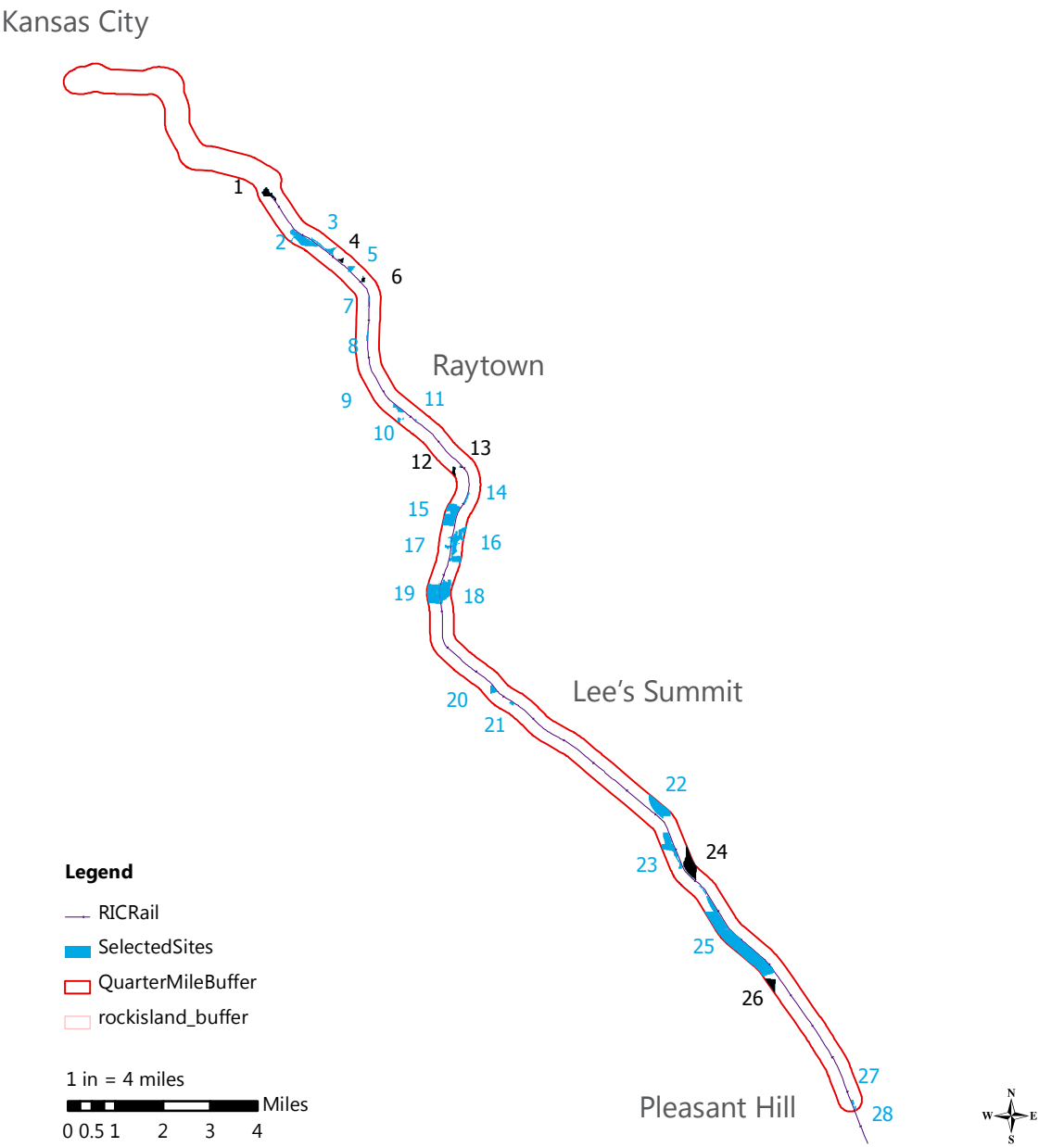
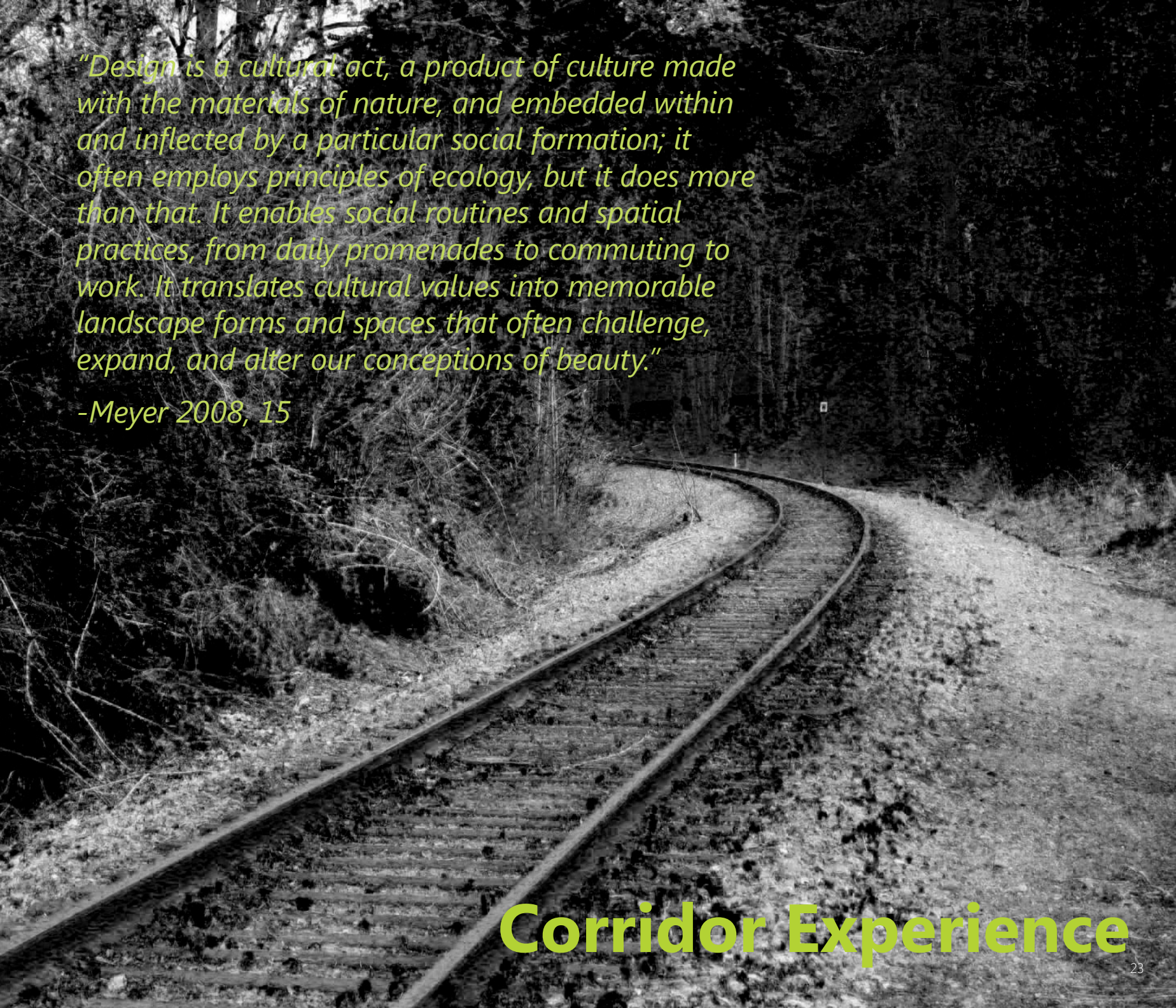


Fig. 2.7 Selected Sites: 21 sites have been identified for installation development.



"Design is a cultural act, a product of culture made with the materials of nature, and embedded within and inflected by a particular social formation; it often employs principles of ecology, but it does more than that. It enables social routines and spatial practices, from daily promenades to commuting to work. It translates cultural values into memorable landscape forms and spaces that often challenge, expand, and alter our conceptions of beauty."

-Meyer 2008, 15

Corridor Experience

Site Design

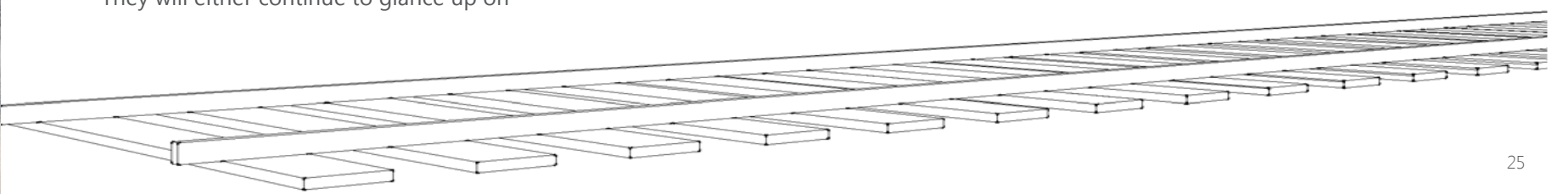
Developed Site Selection

The identification of 21 suitable sites for installation development left a large amount of room for design opportunities along the entire corridor. Of these 21, I developed 19 concepts for the 21 sites. Many of these concepts incorporate specific art pieces defined by parameters. These pieces are commissioned out to artists for development. These parameters set general guidelines for the artists to follow, while allowing for flexibility of the design from the artist. Several of the sites have interactive art installations and are accessible through MetroGreen.

First and foremost, the notion of this experience is simplicity. It is purely a visual experience that enhances riders' commutes and allows them to connect to and enjoy their surroundings. The experience passengers partake in depends on their attention, where they choose to sit, as well as the elements that influence the installations. Some passengers choose to look out the window for their entire commute. This allows them to see a majority of the installations on that side of the rail line. However, they might miss all of the installations on the other side. Others will choose to look up occasionally perhaps catching glimpses of the installations. They will either continue to glance up on occasion or find themselves looking for the next installation. Their experience will change from day to day as they decide it will.

Many of the sites have similar site characteristics, but each site is unique and has its own combination of characteristics. The relationship of the installation to the site allows the sites to fall into 6 categories. Several of the sites fall into more than one category. These categories include tree covered, sustainable, MetroGreen intersects, water based, open space, and topographically beneficial. These 6 categories come from a combination of the site conditions and installation attributes. These 6 were chosen because those attributes stood out when I looked at the corridor as a whole, and there are many sites that make up these categories, and at least 1/4 of the sites fit into every category.

This section illustrates a collection of inspiration, conceptual ideas, strategy diagrams, and views of the installations for each site. This series is organized in chronological order of each identified site chosen for an installation from north to south.



Site 2 | Art Commissioned

Site 2 is forest covered and requires an installation that can stand out against the darkness and heaviness of the forest. A brightly, colored, curvilinear wall is easily seen as it snakes its way through the maze of trees. The curves of the wall create the sense of motion parallax in that as the train moves forward, the wall appears to move back and forth in the direction of its curves. The art created for the wall appears as a silhouette at night as the background glows from within the wall. Panels of the wall are interchangeable so that as time progresses new work can be easily added to the site.

Parameters

- Curvilinear wall with interchangeable panels
- Varied, silhouette patterns
- Glowing background

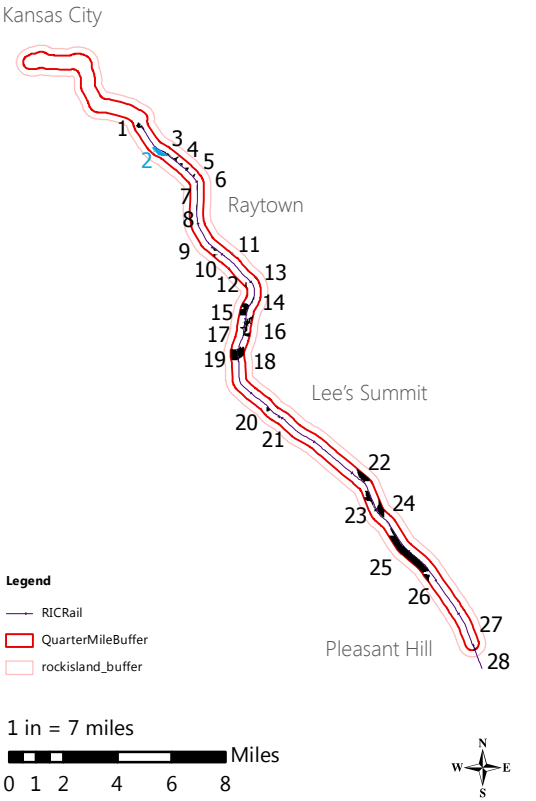


Fig. 3.2 Site 2 Location

Inspiration: Running Fence

Fig. 3.3 Running Fence: The Running Fence is simply a reference piece that can give artists an idea of the vision. While the two have very different surroundings, they both snake their way across the landscape and serve as a bold piece of art.

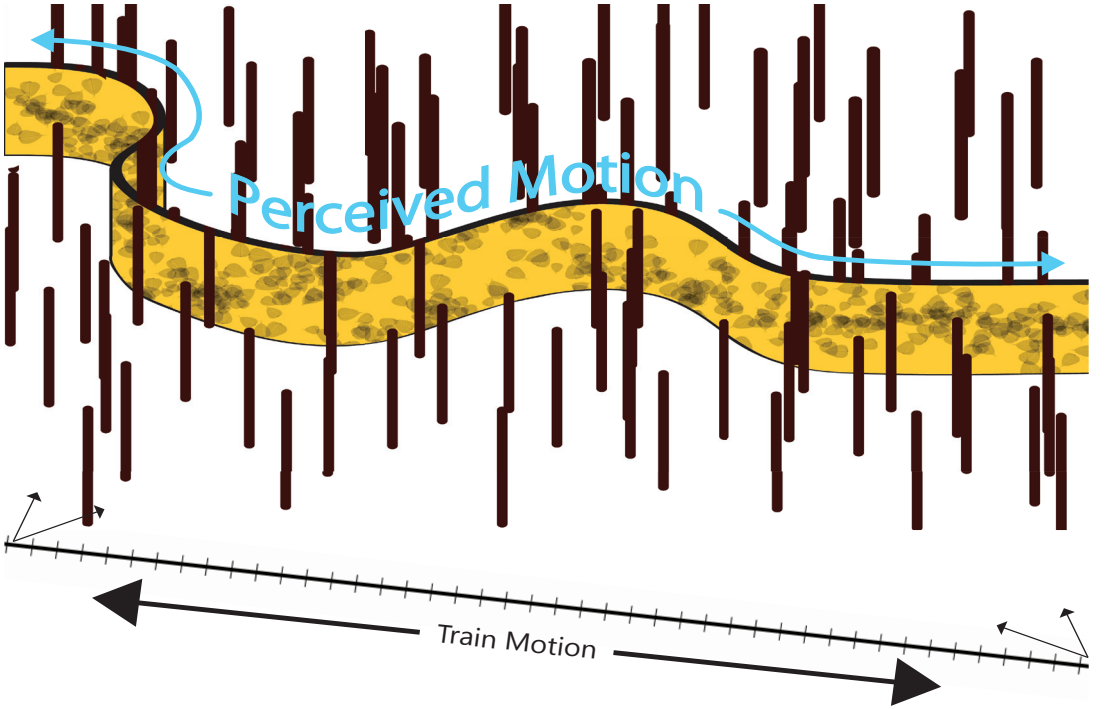


Fig. 3.4 Site 2 Strategy: Due to the motion of the train, the curvilinear character of the wall implies motion parallax to those riding the train.

Fig. 3.5 Panel Art: The succession of panels creates a full piece of art. Each panel can be removed and replaced with new art on a regular basis.

Site 3 | Art Commissioned

A large installation is required for Site 3. Instead of implementing one large sculpture, the creation of a grove of trees that is unique and can be seen from both the rail line as well as from some areas of the Truman Sports Complex is better suited.

The site consists of approximately ten fabricated trees that change colors. By using the technique of thermochromism half of the trees change color as the temperature changes. As morning turns into afternoon and afternoon to evening the leaves fade from purple to yellow and back. The other half of the trees consist of radiant color film. These leaves change color from one vantage point to the next. As one heads into the city they see blue leaves, but as they leave the city they find that the leaves have turned to orange. While Site 3 consists of the grove, these trees are also found along the entire length of the corridor tucked back into tree covered areas where passengers can catch glimpses of color through the natural canopies of the surrounding trees.

Parameters

- Fabricated trees
- Thermochromism inked leaves
- Radiant color film leaves
- Glowing leaves at night

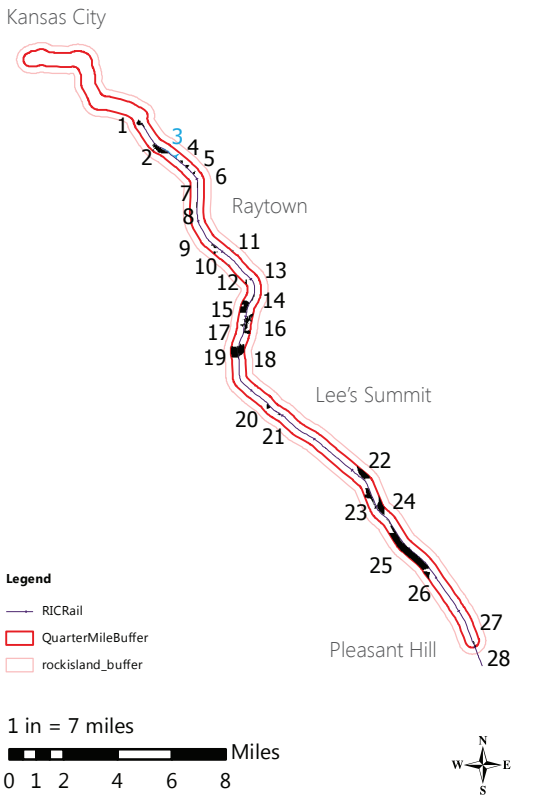


Fig. 3.6 Site 3 Location

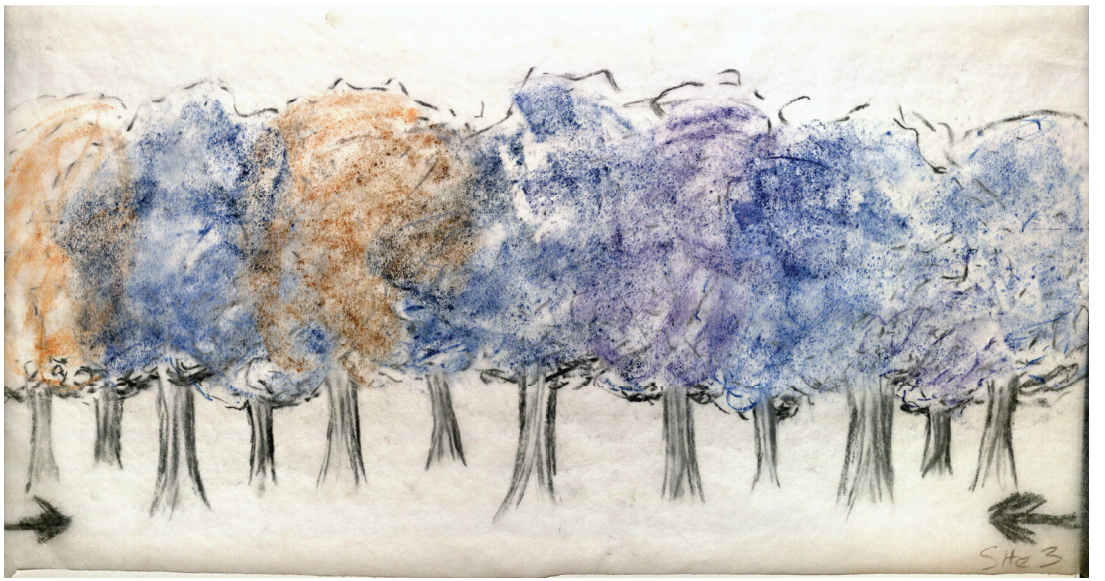


Fig. 3.7 Fabricated Trees Concept: The original concept consisted of a set of trees that change color with the temperature as well as the vantage point of passersby.

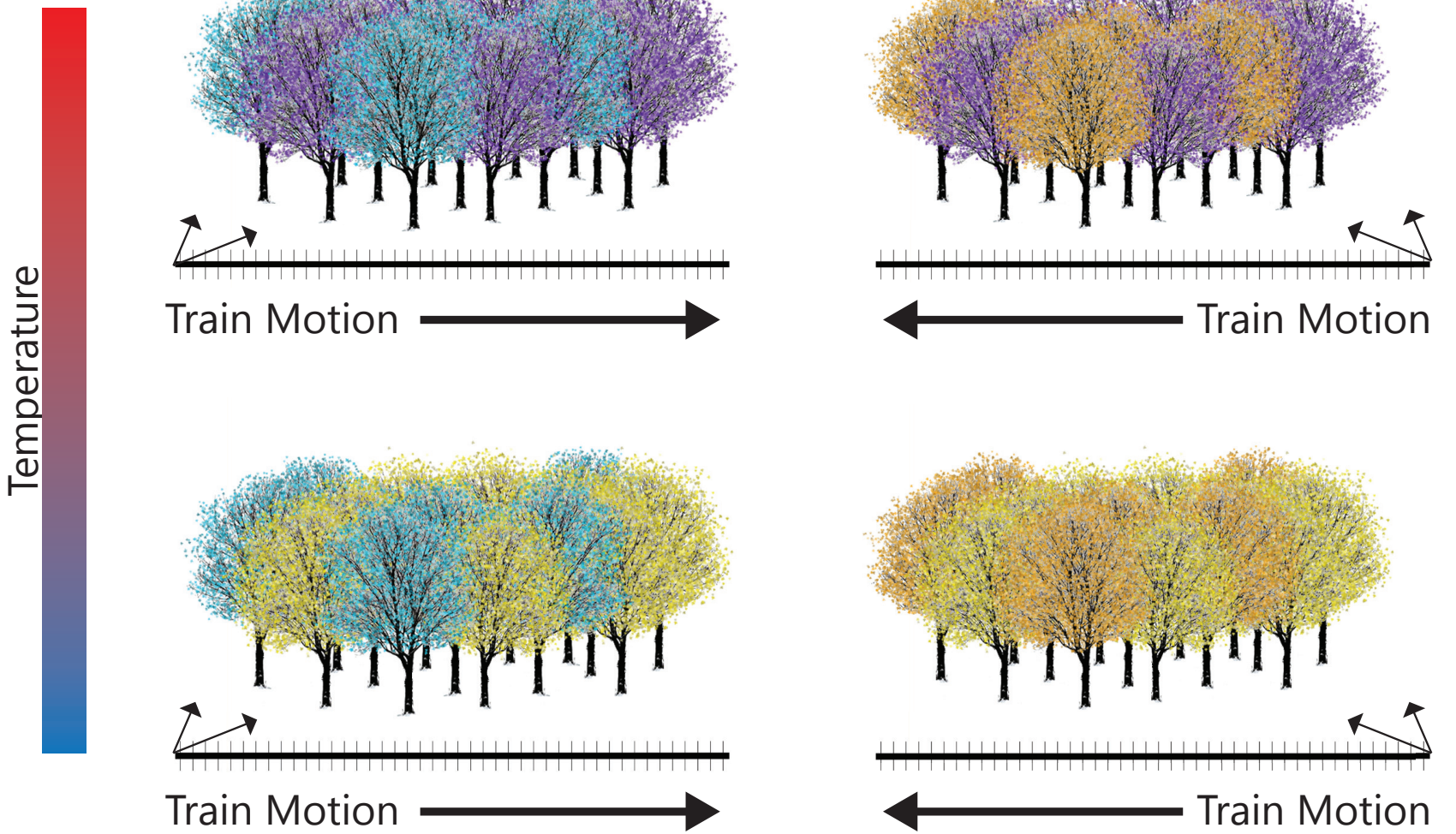


Fig. 3.8 Site 3 Strategy: The thermochromism trees change with the temperature. As the temperature rises, half of the trees turn purple. As the temperature lowers, the same trees turn to yellow. The other half of the trees are made of radiant color film. As passengers come from one direction those trees appear blue, but when they pass by later coming from the other direction those same trees appear to be orange.

Site 5 | Art Commissioned

Site 5 has the opportunity for a flat installation as well as a large amount of small, human scale installations. Due to the overwhelming cover of forest, a collection of vertical installations that mimic the verticality of the trees is well suited as they create an underlying forest of their own. The pieces are coated with bright colors to be easily spotted against the darkness of the forest. The pieces gradually change from one color at the north end of the site to another color at the south end. While in motion on the train, it appears as if the pieces are actually changing color. As darkness approaches the sculptures slowly start to glow from within.

Parameters

- Thin, vertical sculptures
- Organic shape
- Bright colors to stand out in forest
- Hue gradient across site
- Interior light for night glow

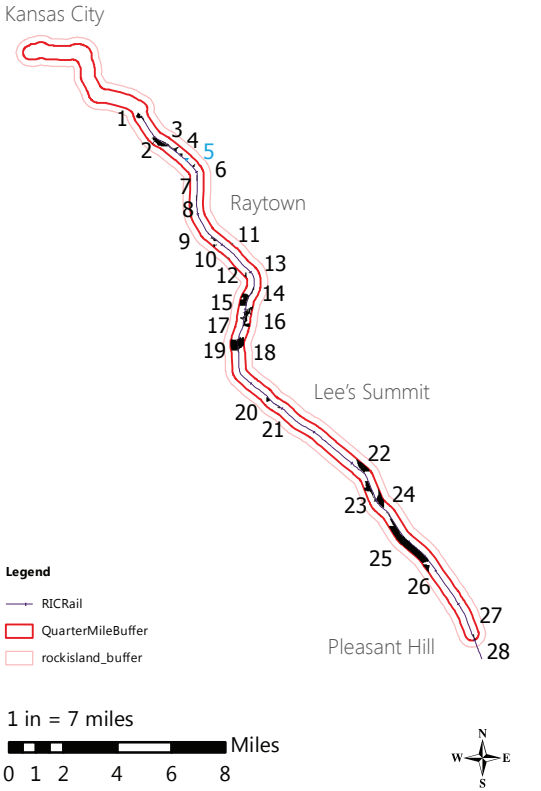


Fig. 3.9 Site 5 Location

Inspiration: Glass Cattails

Fig. 3.10 Glass Cattails: These glass sculptures are a reflection of what the installations could look like.

Fig. 3.11 Site 5 Concept: Organic, nature inspired sculptures infill the forest with a forest of their own.

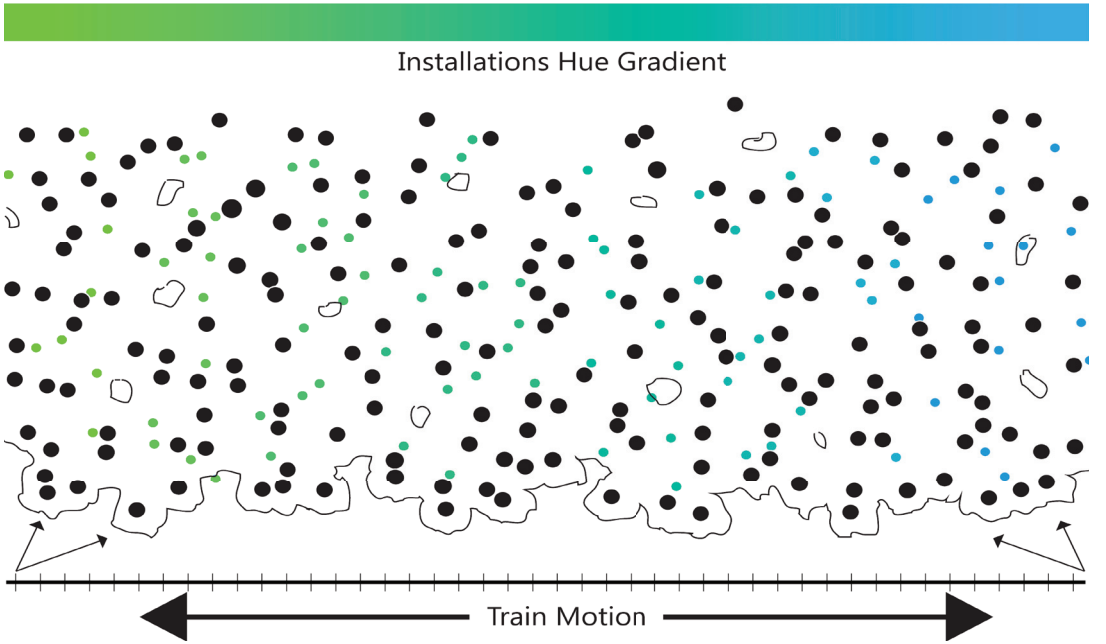


Fig. 3.12 Site 5 Strategy: The installation is an infill of sculptures in the forest. A hue gradient across the site it appears to passengers as if the sculptures are changing color.

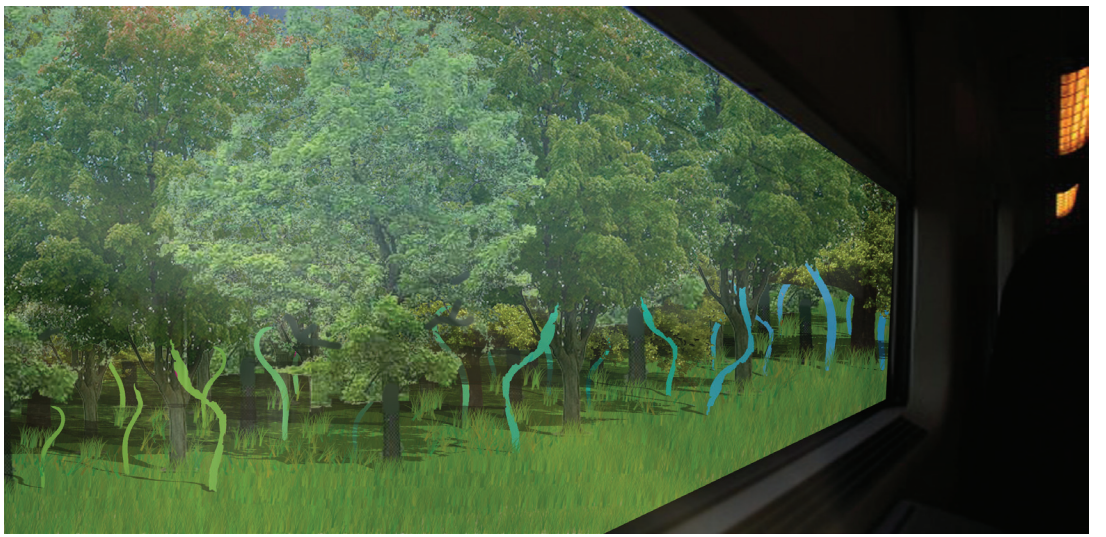


Fig. 3.13 View of Site 5: Passengers see a forest of nature inspired sculptures that appear to change colors with the motion of the train.

Sites 7 & 8 | Designed by Author

According to the matrix, Sites 7 & 8 are only suitable for flat and a large amount of human scale art, but because the matrix is only a framework for a starting point changing it up seemed necessary as many other sites have the same type. Imprints of giant footprints in the forest imply that something has been roaming the area. Keeping the stride in proportion with the size of the foot is important to the image. The footprints make their way through Site 7, but then veer off away from the rail leaving the passengers curious. The footprints show up again on Site 8 half a mile down the rail line. Site 8 is located between the rail line and Raytown Road giving visual access to both rail passengers as well as to those using Raytown Road. This installation sparks riders' imaginations and gets the community talking.

Parameters

- 10' footprints
- 20' stride
- Durable
- Natural appearance

Inspiration: Bigfoot

Fig. 3.15 Bigfoot: Bigfoot inspired the idea for a set of large footprints to spark people's imaginations.

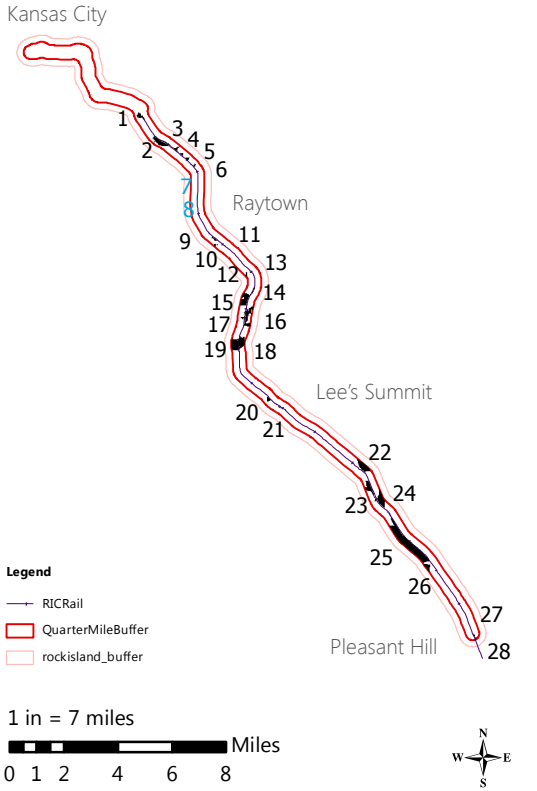


Fig. 3.14 Sites 7 & 8 Location

Fig. 3.16 Sites 7 & 8 Strategy: Giant footprints imply that something has been roaming the area and sparks passengers' imaginations.

Site 9 | Art Commissioned

Site 9 is one of three sites suitable for aquaponics. A pond of at least a ten foot depth is necessary to install aquaponics. The pond is necessary for the fish and the depth keeps the fish alive in the winter months. A grow bed adjacent to the pond serves as a part of the aquaponics cycle to support fish growth and provide food for the community. Aquaponics on its own is great for sustainability but does not offer much of a visual experience. By incorporating interchangeable art pieces that float on the pond passengers expect to see something new every so often. The floating aspect allows the art to move around the pond creating new patterns and images.

To change it up at night, each floating piece is fixed with solar powered laser lights and sensors for each light. The sensor activates as fish pass by resulting in a laser light show controlled by the fish. The fish sensors guarantee no foreseen or repeating patterns. To keep the lights from going on and off all night long, the train activates a sensor 1/4 mi down the line that allows the fish sensors to be activated. Passengers know they can look to Site 9 for something new every time they pass by.

Parameters

- Linear pond
- At least 10' deep
- Adjacent grow bed
- Pump
- Filter

Floating art pieces:

- Less than 1.5' tall
- Incorporation of solar panels
- Solar powered laser lights
- Fish sensor on bottom to activate lights

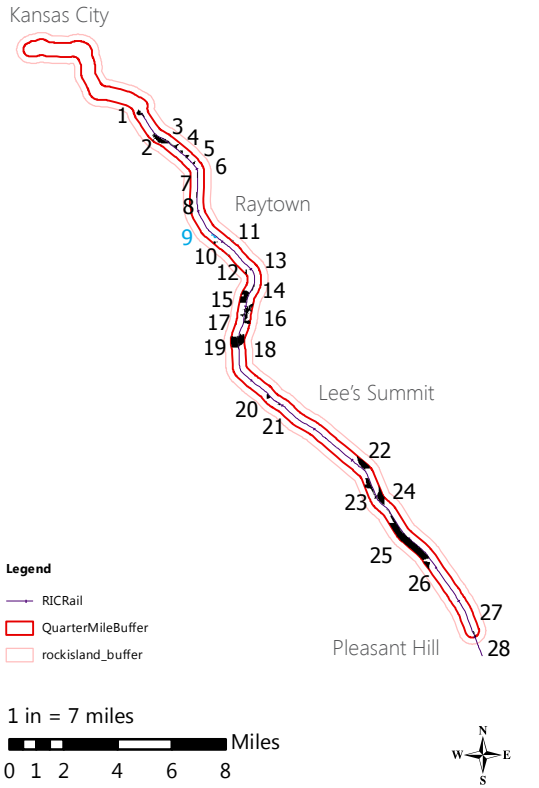


Fig. 3.17 Site 9 Location

Inspiration: Light Drift

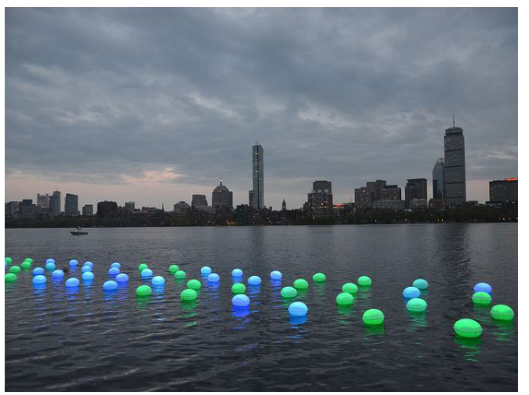


Fig. 3.18 Light Drift: Light Drift reflects the idea of using floating art and light in the same installation.

Laser Light Show

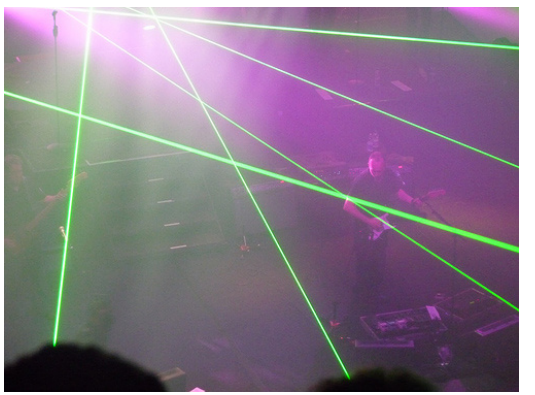


Fig. 3.19 Light Show: Laser lights like these at a smaller scale can be seen through the trees.

Fig. 3.20 Daylight View of Site 9: Daylight allows passengers to see the growing plants of aquaponics as well as the floating artwork on the pond that holds the fish.

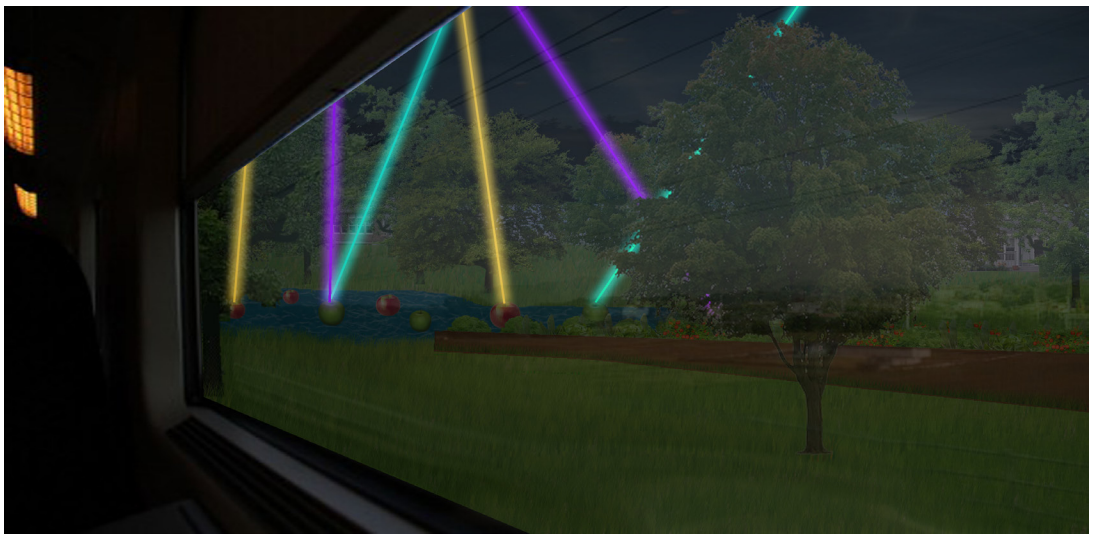


Fig. 3.21 Night View of Site 9: As night falls, fish activate the lasers on the surface of the art pieces transforming the site.

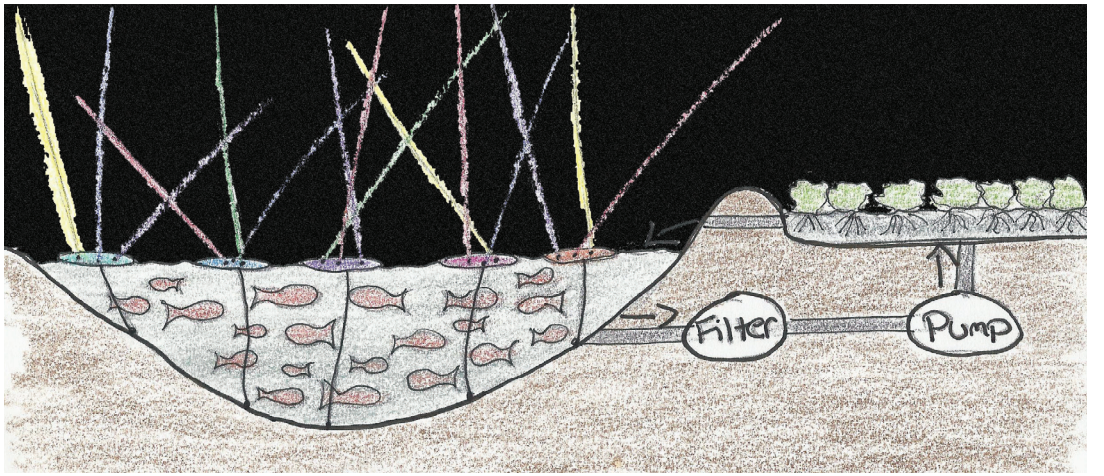


Fig. 3.22 Aquaponics Concept: The concept for Site 9 uses the combination of aquaponics, floating art pieces, and laser lights activated by the fish.

Fig. 3.23 Light Concept: The fish activated laser lights occur at random patterns and are seen in between the trees as well as through their canopies.

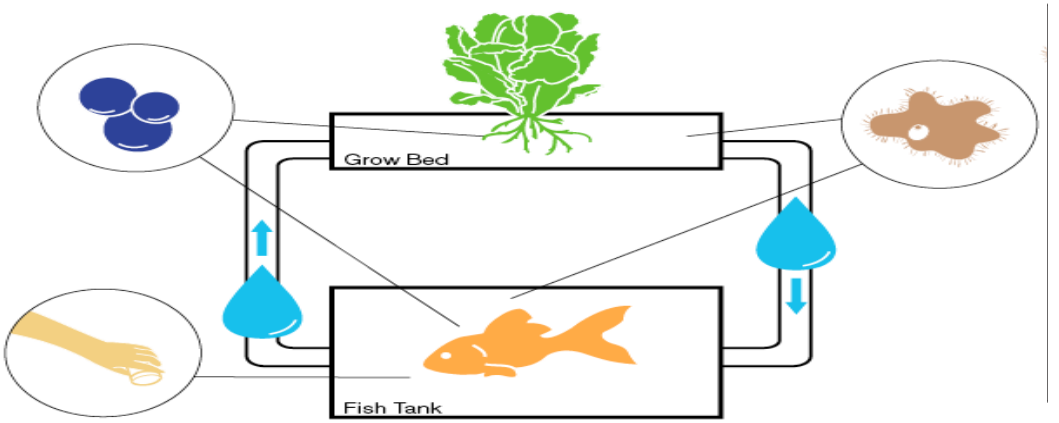


Fig. 3.24 Aquaponics Workings: The workings of aquaponics involve fish and a plant bed whose natural systems support each other's growth.

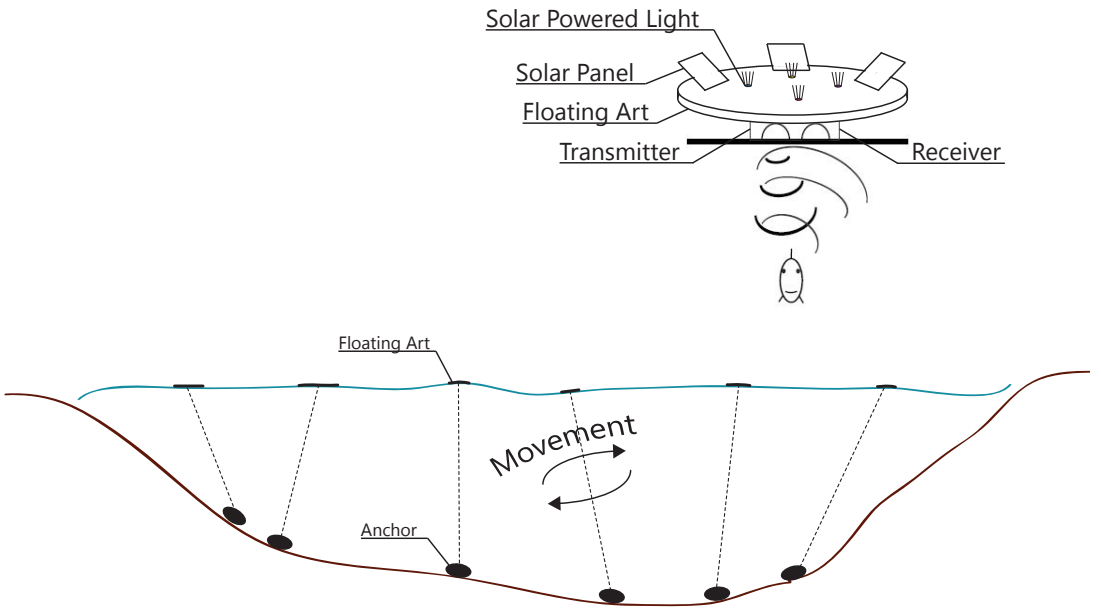


Fig. 3.25 Site 9 Strategy: The floating art pieces are tethered to anchors by rope, which keep the pieces in place, but allow for movement around the pond. Each art piece consists of solar panels to power the laser lights that are activated by the fish. through a transmitter and receiver. "The transmitter transmits a pulse. This pulse is reflected by the fish, and received by the receiver." Broersen 2009.

Aquaponics

Fish are fed food and produce Ammonia Rich waste. Too much waste substance is toxic for the fish, but they can withstand high levels of Nitrates.

The bacteria, which is cultured in the grow beds as well as the fish tank, breaks down this Ammonia into Nitrites and then Nitrates.

Plants take in the converted Nitrates as nutrients. The nutrients are a fertilizer, feeding the plants. Also, the plant roots help filter the water for the fish.

Water in the system is filtered through the grow medium in the grow beds. The water also contains all the nutrients for the fish.

Oxygen enters the system through an air pump and during dry periods. This oxygen is essential for plant growth and fish survival.

Site 10 | Art Commissioned

Site 10 is a forested area on the edge of a residential pond. Instead of utilizing the forest, the pond has higher visibility from the rail and serves as a canvas for the installation. Site 10 takes a cue from Site 9 by using interchangeable floating art, but instead of short/flat art, these pieces are much taller and appear to be out of place standing tall on the water. As night falls, elements of the pieces light up the darkness.

Parameters

Floating art pieces:

- Vertical
- Night glow
- Solar powered lights

Inspiration: le bassin Takis

Fig. 3.27 le bassin Takis: These vertical art pieces on the surface of the water inspire the vertical art components for Site 10.

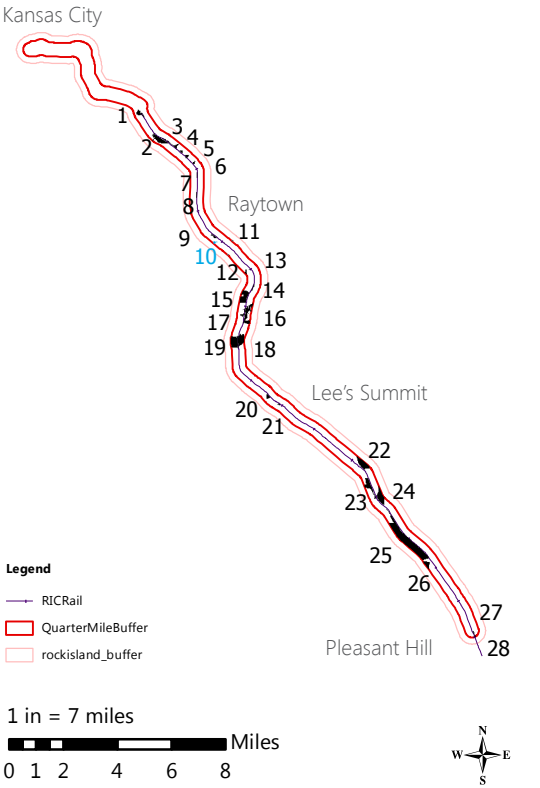


Fig. 3.26 Site 10 Location

Fig. 3.28 Site 10 Concept: The original concept was to implement only the fabricated trees of Site 3. They would be seen from across the pond. The pop of color would be seen within the trees as well as in the reflection on the water.

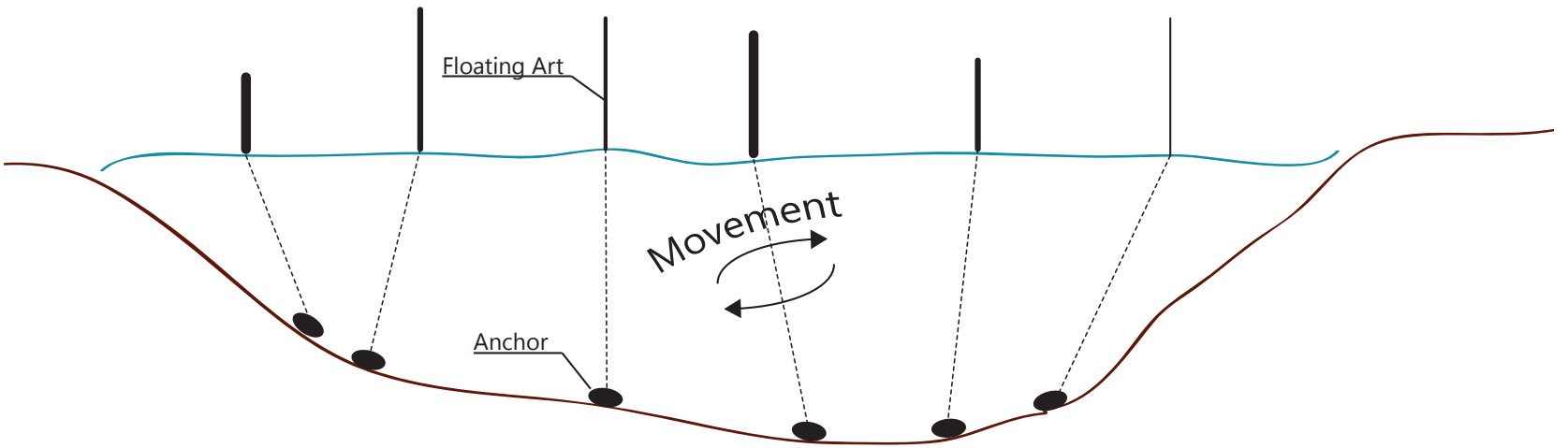


Fig. 3.29 Site 10 Strategy: Each piece of art is tethered to an anchor by a rope to hold it in place. The rope allows the art to move around to add variety in the site.

Site 11 | Art Commissioned

The matrix calls for a large installation. After further investigation of the site, instead of utilizing the open ground plane in the middle of the horseshoe of trees, the open space between and above the trees at the canopy level is a better option to bring in variety. Hanging from wires the installations here appear to be floating amongst the trees. Coming up from the south, passengers can see art in the opening of the horseshoe. For those coming from the north, the art is easily missed unless one sees the colors through the foliage drawing the eye up or knows of its placement in this space. These pieces are interchangeable giving passengers something to look forward to as they change.

Parameters

- Art pieces that can hang from wire
- Visible through and above tree canopies
- Visible at night
- Solar powered lights

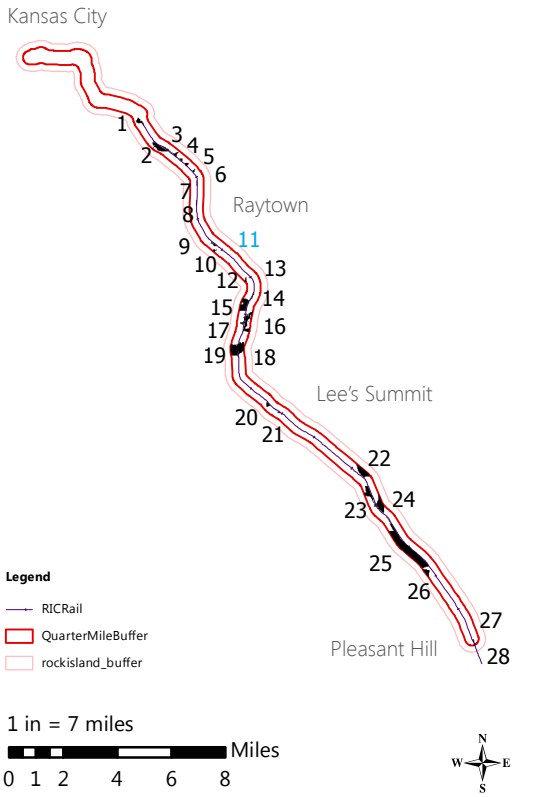
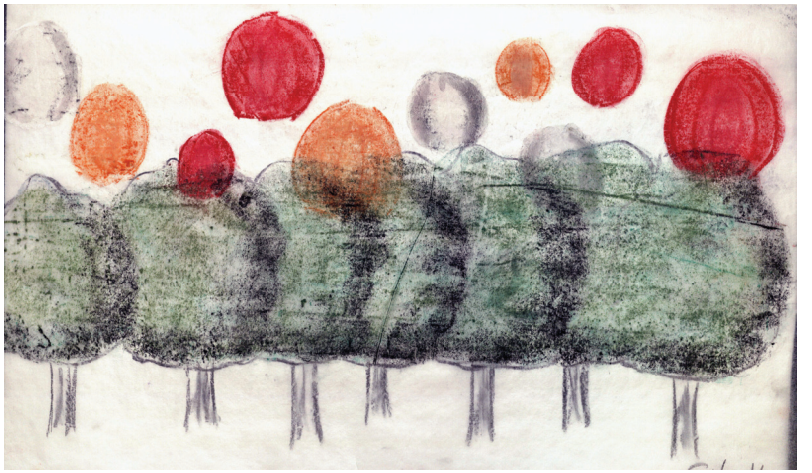


Fig. 3.30 Site 11 Location

Inspiration: Curiosities

Fig. 3.31 Curiosities: The floating elements of Curiosities are representative of the art on Site 11. Also, the art floats within the open space of a courtyard much like the open space of the horseshoe of trees on Site 11.



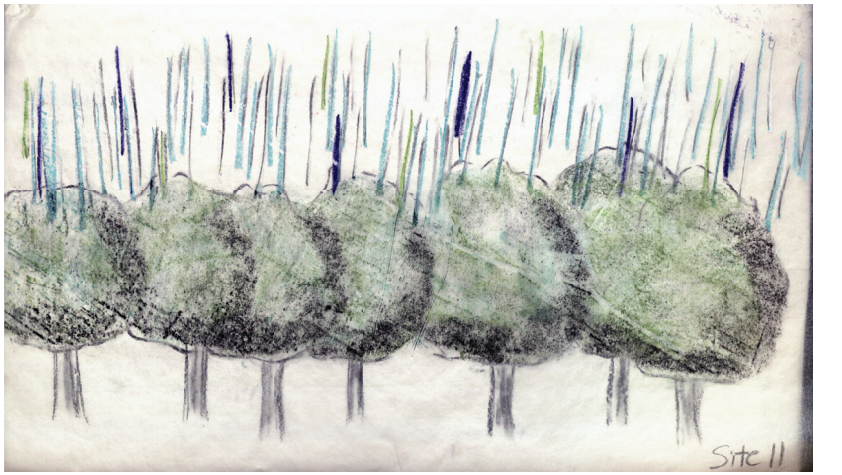


Fig. 3.32 Site 11 Concept: The concept consisted of installation art that appears to be floating above the tree tops. To change things up, the art can be changed from time to time with different shapes and colors. Source: By author

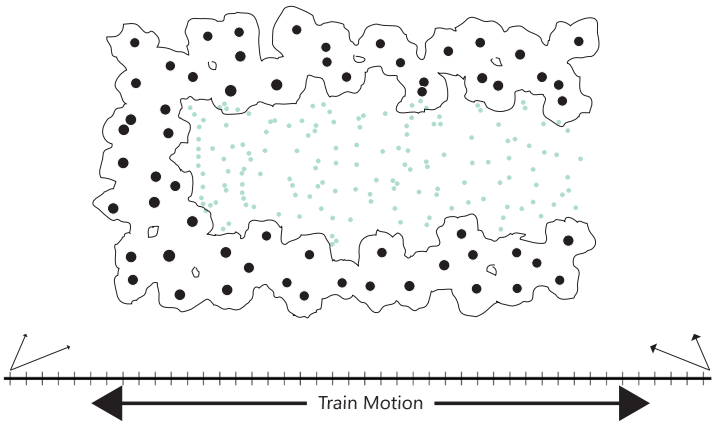


Fig. 3.33 Site 11 Plan Strategy: In the horseshoe of trees, the art is only easily seen when coming from the south. When coming from the north, the art is easily missed unless one already knows it is there.

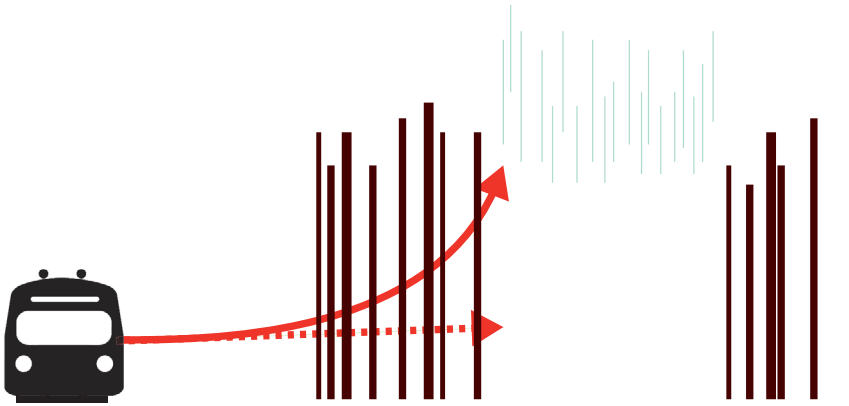


Fig. 3.34 Site 11 View Strategy: Some passengers may not realize for a while that there is an installation at this location because they typically look straight out of a window, but will have to look up and through the trees to see this elevated installation.

Site 14 | Designed by Author

The matrix suggests several installation options, and landform is not one of them. After further investigation of the site landform is a good option to counteract the current topography of the site as the rail line sits up on a ridge, and the adjacent ground plane slopes down. The sudden topography change surprises passersby while the character of the landform in relation to the movement of the train implies motion parallax. The foreground landform is designed to be the opposite of the background to exaggerate the height of the background hills. The foreground, low areas planted with native plants collect and hold stormwater as needed.

Parameters

- Background landform: Rolling hills higher than 4' above the rail line
- Foreground landform: Opposite of the background landform
- Ground plane impressions to hold stormwater
- Native plantings in basins

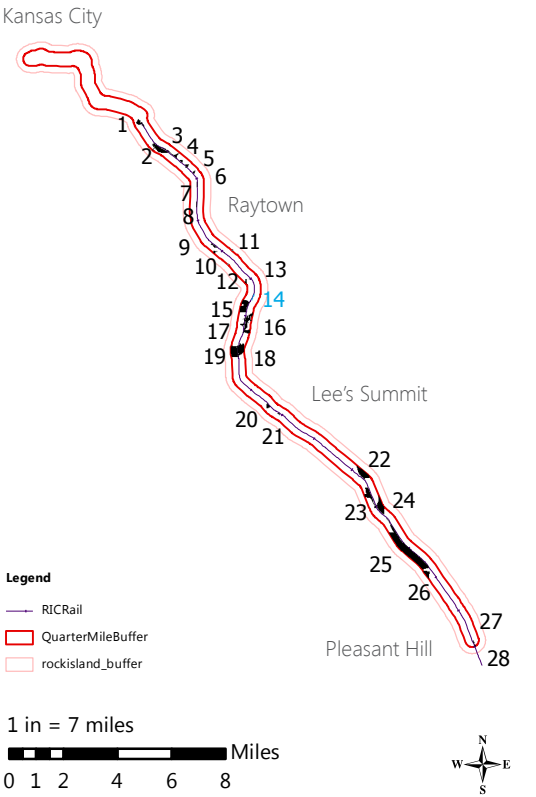


Fig. 3.35 Site 14 Location

Precedent Study: Running Fruit Ladders

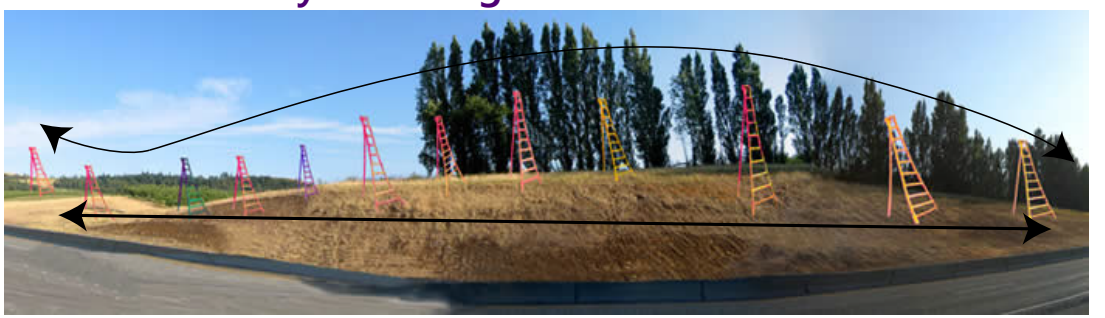


Fig. 3.36 Running Fruit Ladders: The vertical topography of the rolling hills mimics the strategy of the fruit ladders in the sense of motion parallax or perceived motion. The ladders use the topography along with their varying heights to produce motion parallax while the landform of site 9 uses just the topography.

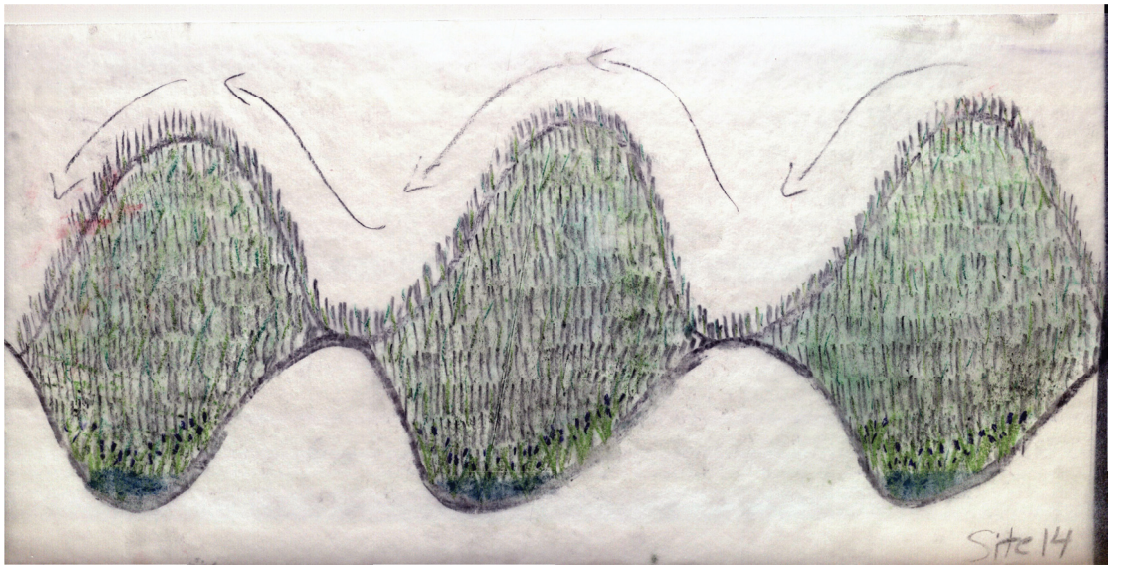


Fig. 3.37 Site 14 Concept: The original concept was to use the landform as motion parallax, exaggerate the landform through the use of the foreground landform, and collect stormwater.

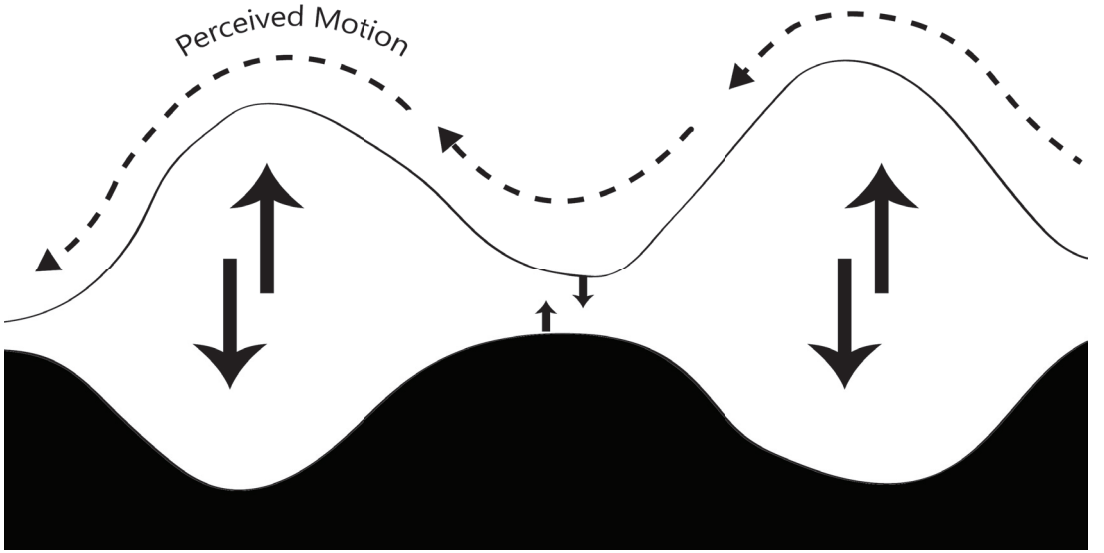


Fig. 3.38 Site 14 Strategy: The rolling of the landform creates perceived motion to those passing by. The foreground landform is shaped to be the opposite of the background to exagerate the height.

Site 15 | Art Commissioned

Site 15 is the only site suitable for xylochimes, an interactive musical instrument that combines the attributes of a xylophone and a windchime through a set of vertical, free standing tubes and a set of vertical, hanging tubes that when hit against each other produce pleasing sounds. The site is quite large and is planned as a park by MARC's Future Land Use Plan. This is ideal in that it intersects with MetroGreen, but also because the xylochimes serve as one of several elements in the park allowing for many interactive elements and flexible space found in a typical park setting.

The path of the xylochimes follows alongside MetroGreen as well as the rail line. This gives immediate access to MetroGreen users and a clear view for passengers because none of the other park elements are in the foreground to obstruct the design of the xylochimes. The installation is large enough for many people to interact with it at one time. This creates the opportunity to hear many notes at one time. The tubes vary in length and circumference to give a range of notes. The surrounding topography and plant life serves as a buffer for the noise to adjacent neighborhoods. Nighttime brings a glow to the tubes from the inside out. The colors and the unusualness of the xylochimes catches passengers' attention and intrigues them enough to use the trails to experience the xylochimes for themselves.

Parameters

- Solid colored tubes of varying lengths and widths
- Produce sound when hit against each other
- Nighttime glow from inside out

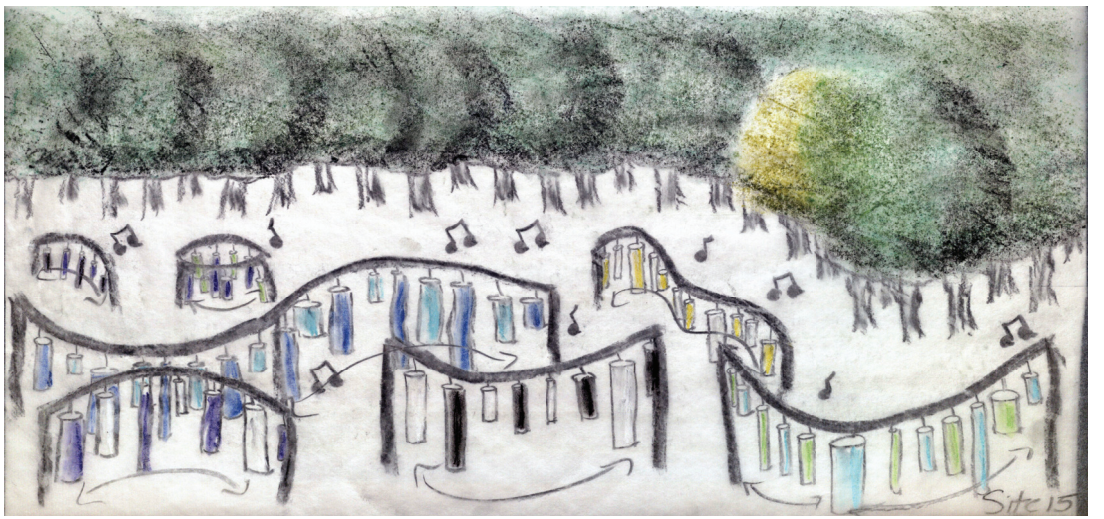


Fig. 3.40 Site 15 Concept: The original concept used just the idea of windchimes. Each structure allowed for separation of users, but the proximity of some let the chimes from one structure chime against another.

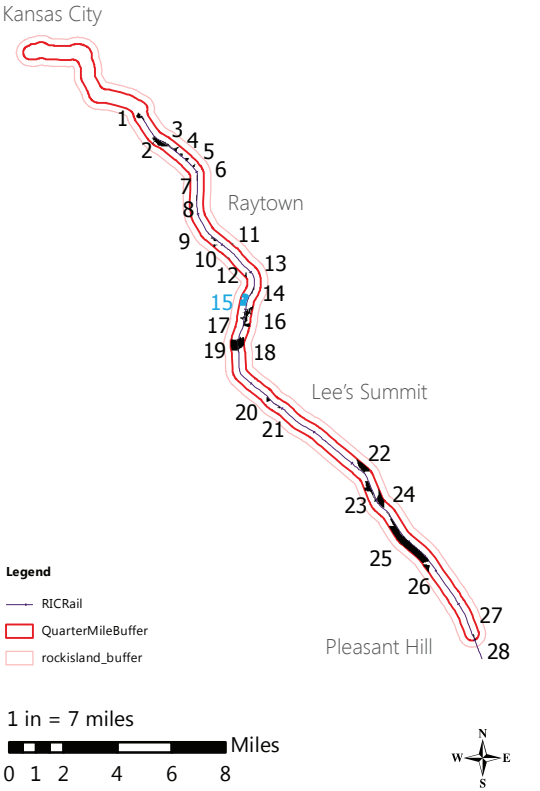


Fig. 3.39 Site 15 Location

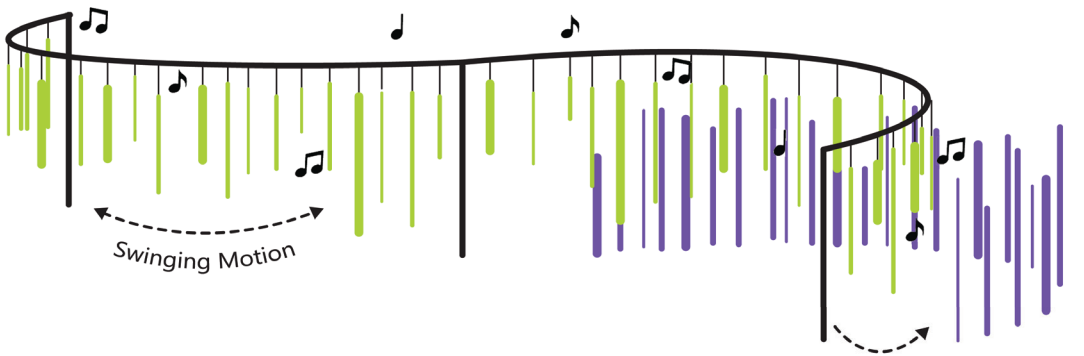


Fig. 3.41 Site 15 Strategy: Xylochimes involves both the functionality of a xylophone and windchimes. The winchimes hang from a structure and can easily swing to hit one another as well as the xylophone component, which consists of grounded tubes.

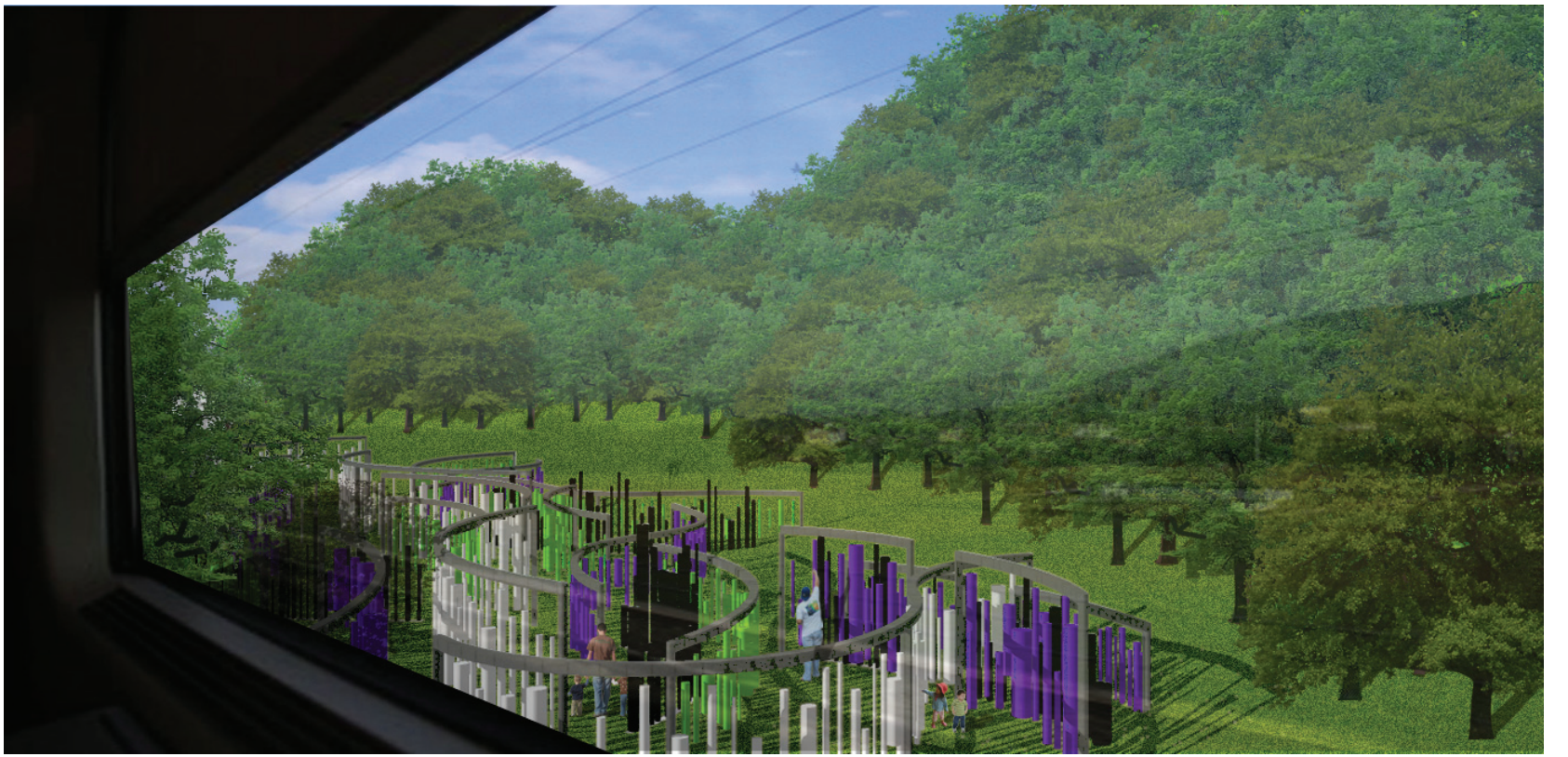


Fig. 3.42 View of Site 15: Rail line passengers see the brightness of the xylochimes as well as people enjoying them. Seeing the function sparks passengers' curiosity and attracts them to the MetroGreen trails.

Sites 16 & 17 | Designed by Author

The matrix suggests the same four types of installations for both sites, three of which are used to pursue the design development. Because they are directly adjacent to each other, they are treated as one site to create an experience that envelops the rider on both sides of the rail line. Due to the large amount and scale of the forest on both sites, the installation needed to be at a human scale. While the site is suitable for a physical installation with the MetroGreen intersects, the MetroGreen users experience the site the same way as the rail passengers. This way, MetroGreen users can experience the nature of the site without any barriers, as the installation is purely natural. Vine wrapped trees envelop the spaces that users pass through. A variety of vines that bloom at different times allow the space to change naturally and add visual interest. The explosion of color against the dark forest create a magical environment.

Parameters

- Vines with brightly colored flowers
- Vines that give off a scent
- A range of vines that bloom at different times

Inspiration: Hydrangea Garden

Fig. 3.44 Hydrangea Garden: This area of the Wellington Botanical Gardens serves as a display, but also uses plants and color to create an experience that feels magical.

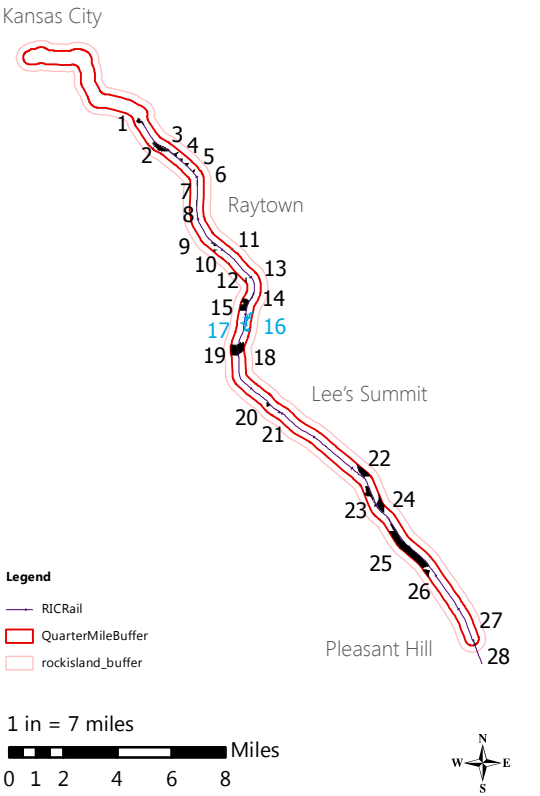


Fig. 3.43 Sites 16 & 17 Location

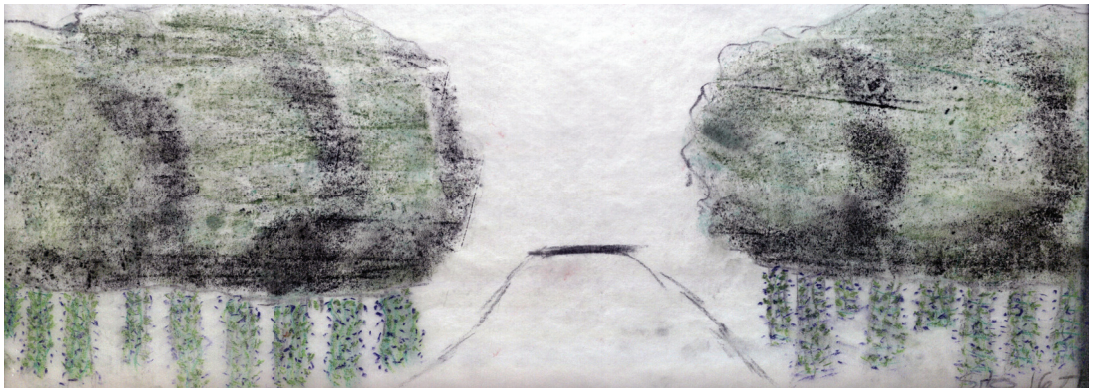


Fig. 3.45 Sites 16 & 17 Concept: The original concept involved an overwhelming amount of flowering vines that surround the rail line.

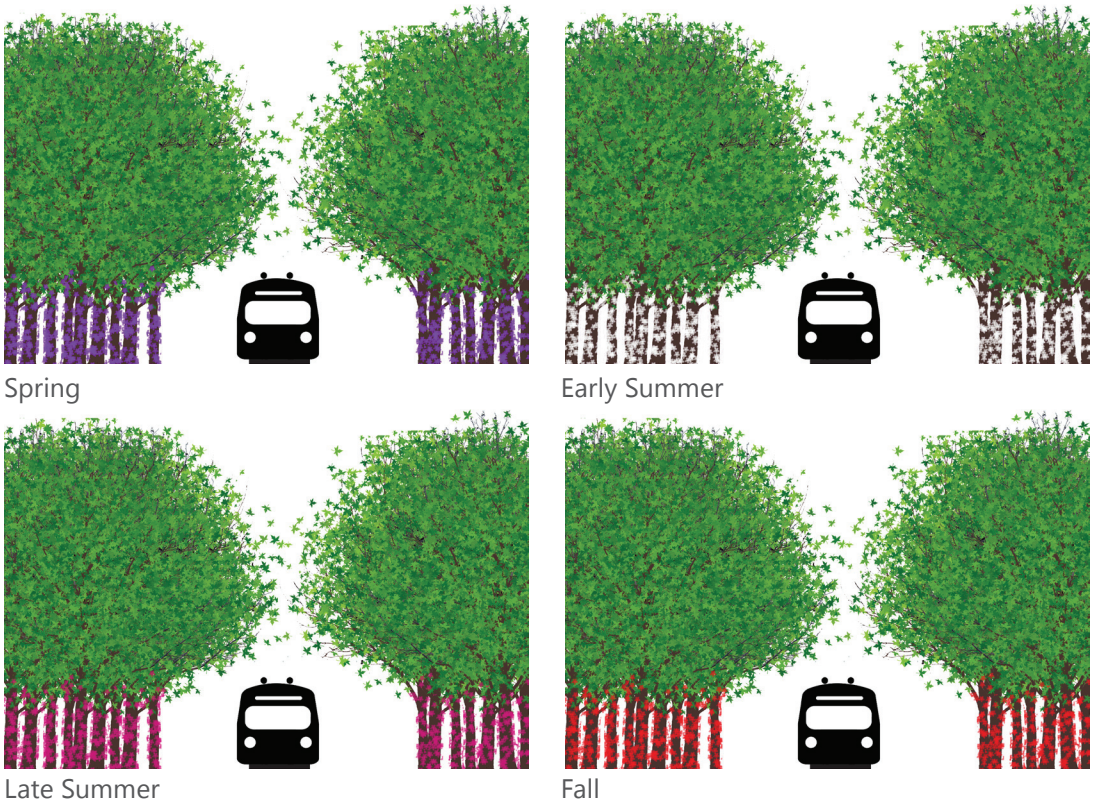


Fig. 3.46 Sites 16 & 17 Strategy: Each vine blooms a different colored flower throughout the seasons.

Site 18 | Art Commissioned

Site 18 is forest covered with a stream running through the east side. By expanding a portion of the stream, the area adjacent to the stream is transformed into a retention pond. By placing a large art piece in the pond, passersby see different parts of the art as the water level changes, which is dependent upon the weather. Site 18 is inspired by the Beaman Monster, a mythical creature from regional folklore. "The Beaman Monster is said to be the offspring of a giant gorilla who escaped from the circus after a train crash. Although some say it resembles a coyote or wolf." (Unknown 2012) Using the notion of the Beaman Monster adds some fun to this installation. Because the pond is situated in the midst of the forest, the monster is most often hidden in the trees. A track system on the bottom of the pond allows the sculpture to move around the pond from one end of the site to the other. The track and the forest keep passengers searching for him.

Parameters

- Expansion of stream
- Retention pond
- Linear pond
- Track system
- Beaman Monster based sculpture
- 20-30' long sculpture
- Up to 8' tall

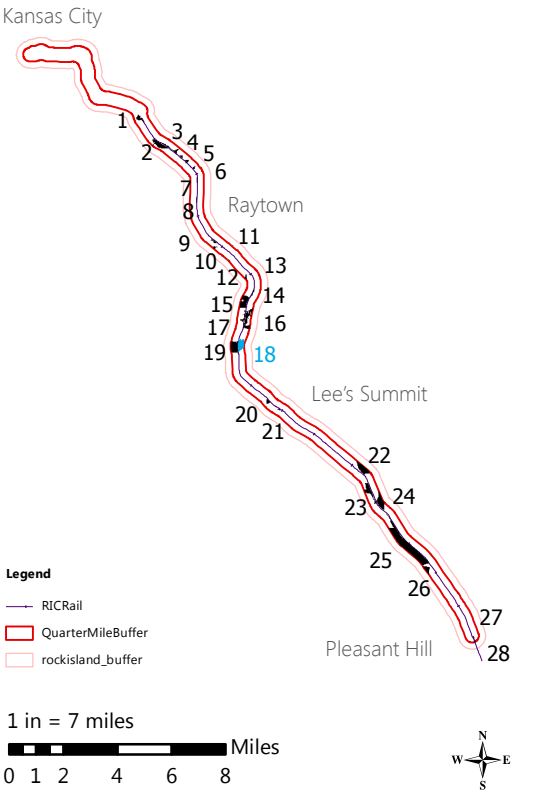


Fig. 3.47 Site 18 Location

Inspiration: Lady of the Lake

Fig. 3.48 Lady of the Lake: A submerged sculpture is an interesting and unexpected piece to find.

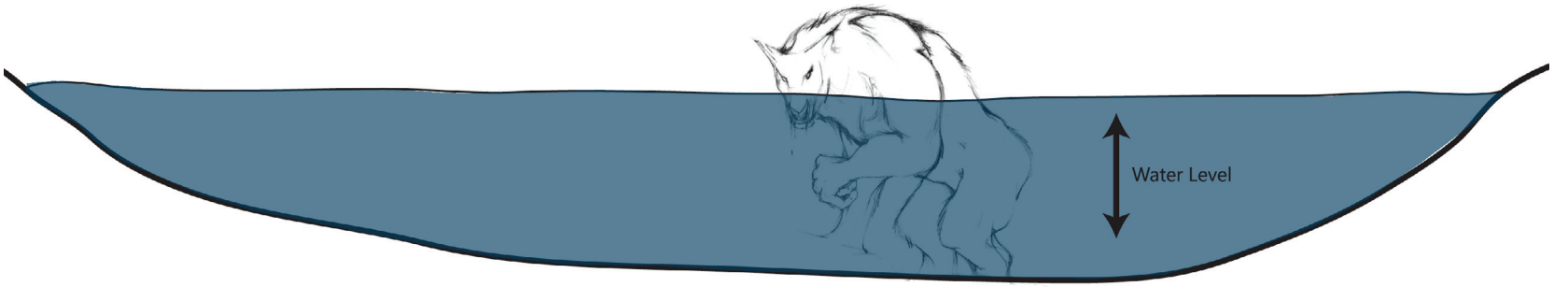


Fig. 3.49 Site 18 Strategy: As the water level changes with the weather more or less of the Beaman Monster is visible to train passengers.

Fig. 3.50 View of Site 18: Rail line passengers can catch glimpses of the Beaman Monster through the trees.

Site 19 | Designed by Author

Site 19 is a large site mostly covered by forest. However, there is a section of the site that is open and suitable for an installation that does not have to directly respond to the forest. By also foregoing the installation attributes of flat and patterns that cross the rail, the focus is on the experience of an interactive installation that responds to MetroGreen.

A fountain city developed with blowhole architecture serves as an interactive element that gives off different ambiances. Blowholes are a natural type of fountain found in coastal areas. As the waves come in, the water moves through the blowholes and is blown up through the rocks. See Fig. 3.52 for an image of blowholes. It provides a playful environment for all ages, yet also a peaceful one where a MetroGreen user can sit and enjoy the sounds of the water. Passengers only get a visual experience of the fountains, but are intrigued by the opportunity to visit the site for an interactive experience. To save electricity sensors activate the fountains. When a MetroGreen user passes a sensor, the fountains become active for fifteen minutes. As the commuter train makes its way towards Site 19, it also hits a sensor and turns the fountains on for five minutes. The site is still fully accessible at night with colored lights to enhance the fountains as well as safety lighting for those wanting to enjoy the fountains for a longer period of time.

Parameters

- Fountains that respond to sensors
- Blowhole architecture
- Walkable
- Night glow
- Solar powered lights

Inspiration: Blowholes

Fig. 3.52 Blowholes: Blowholes are a natural type of fountain found in coastal areas. Including this type of architecture in the KCMO region is unexpected and surprising to come across.

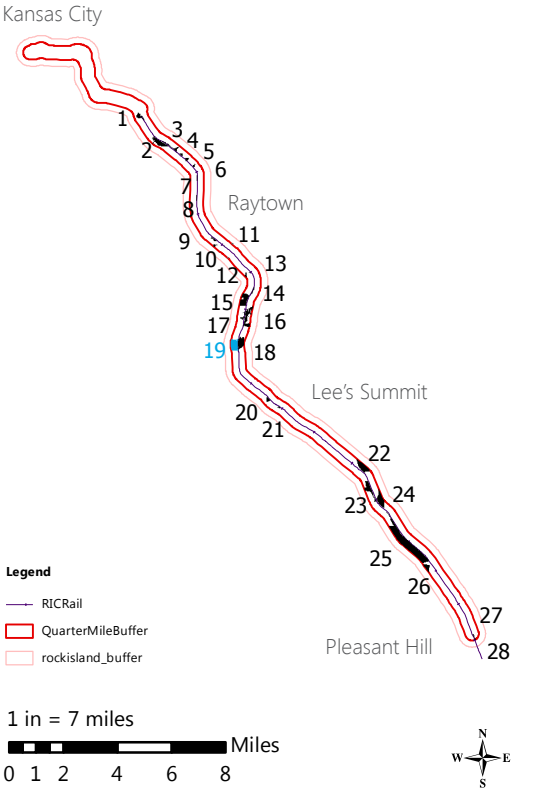


Fig. 3.51 Site 19 Location

Fig. 3.53 View of Site 19: Views of the fountains encourage passengers to visit the fountains through MetroGreen trails.

Sites 20 & 21 | Art Commissioned

Sites 20 & 21 cannot be seen together at one time, but because they have the same characteristics and are in succession they have been grouped together and are implemented with the same type of installation. Both sites are forest covered and slope down as they move away from the rail. Much of the ground plane cannot be seen from the rail as well. The installations on both of these sites are flexible, rod like pieces that are grounded in the lower portions of the site and arc up through the trees with the topography towards the rail. The ends have attached heads on them that are interchangeable. These heads are different pieces of art. They are of all sizes ranging from 1'-5' in diameter. Some are just one piece of art that stands alone, while others are a portion of an image that are moved around to create a collage like image. The rods are flexible enough to be bent and maneuvered through the trees to create patterns or mosaic art with several pieces.

Parameters

- Sturdy yet flexible pieces
- Grounded on the low areas of the site then arcs up towards the rail
- Interchangeable heads at open end to create visual interest

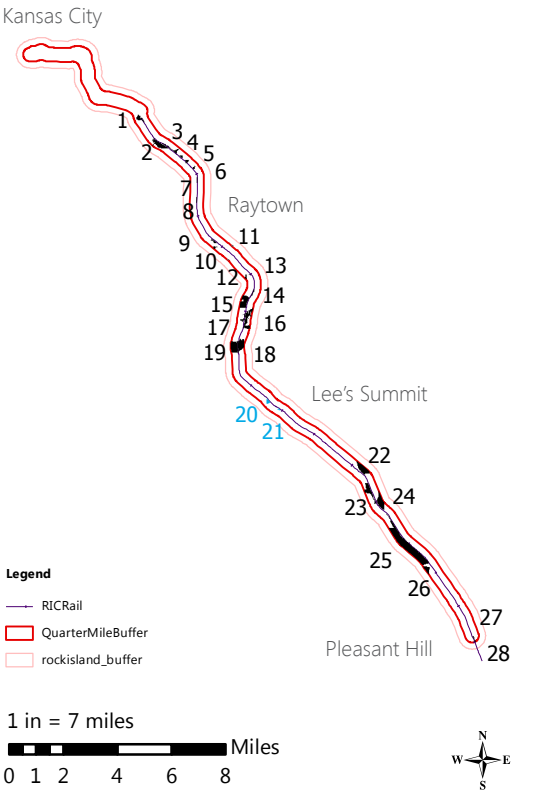


Fig. 3.54 Sites 20 & 21 Location

Inspiration: Swayo

Fig. 3.55 Swayo: The flexible poles of Swayo reflect the base for the installation.

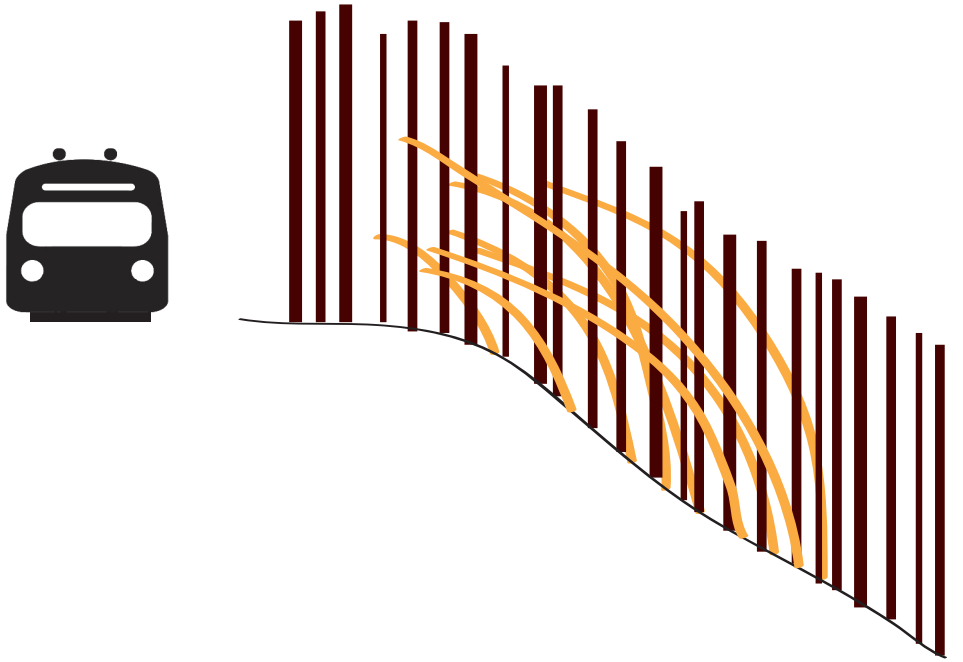


Fig. 3.56 Sites 20 & 21 Terrain Concept: Due to the slope of the site, each pole is grounded into the lower end and arches up and forward towards the rail through the trees so that passersby can see the art.

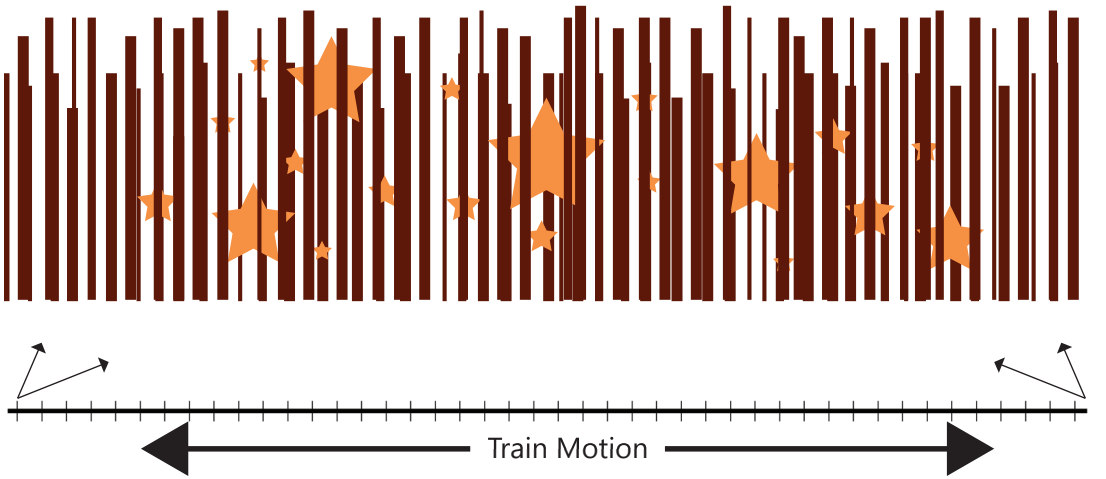


Fig. 3.57 Sites 20 & 21 View Concept: The heads of the installation are seen amongst the density of the forest.

Site 22 | Art Commissioned

Site 22 is the only site suitable for solar energy art installations. The slopes on this site are south facing as well as visible from the rail line. A typical solar panel is anything but visually pleasing, but the creation of installations that look like flowers and are based on solar panels are both sustainable and visually acceptable. Because this is a sustainable installation the design concept for each solar piece comes from native, Missouri flowers.

Brightly colored poppies, which are sun loving flowers, consume the surrounding ground plane of the slopes. As they encroach upon the slopes, they become less dense and the solar installations made to look like abstracted poppies take their place. The petals of the installations use thermochromism ink to change colors as the temperature increases and decreases. Each petal starts out white, but as the sun becomes more intense and the heat rises they turn to a bright red symbolizing the amount of energy collected. As night falls, pieces of the installation such as the stamen and pistil start to glow through the use of the stored solar energy.

Parameters

- Poppy or other full sun, native flower inspired solar art piece
- At least one element that glows at night with the use of solar energy
- Thermochromism ink in the petals

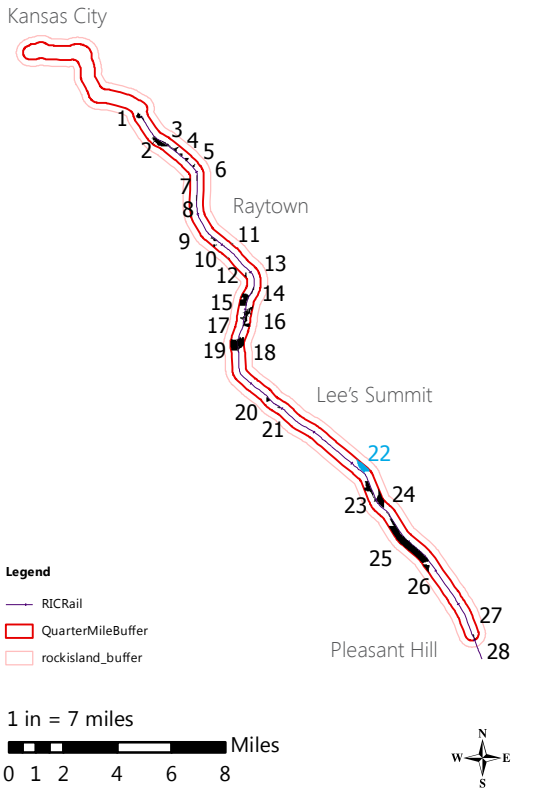


Fig. 3.58 Site 22 Location

Inspiration: Whatami Pavilion

Fig. 3.59 Whatami Pavilion: These sculptures at the Whatami Pavilion inspire an abstracted design of a real flower.

Fig. 3.60 Site 22 Concept: The original concept involved a field of poppies that moved uphill changing into solar art pieces that reflect the nature of the poppy.

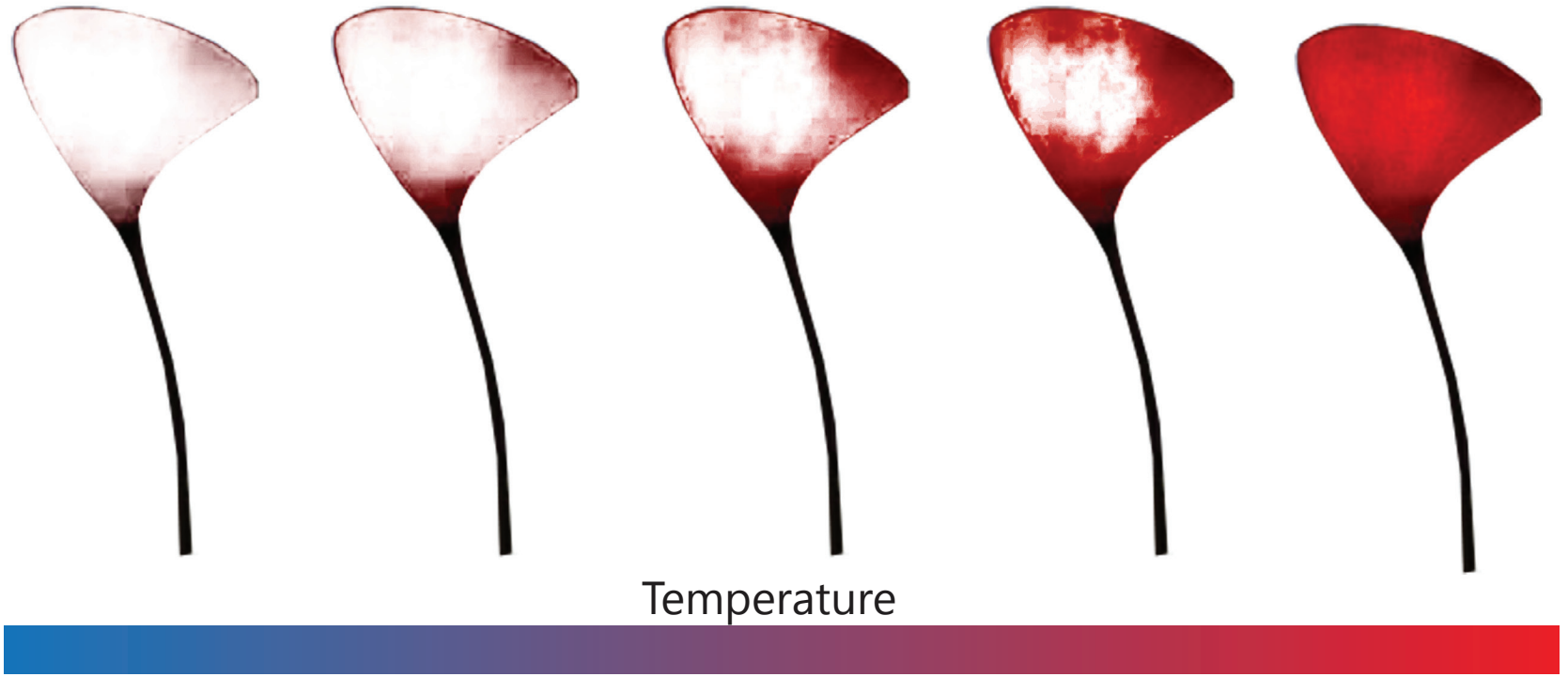


Fig. 3.61 Site 22 Strategy: As the temperature rises, the solar pieces turn from white to red.

Site 23 | Designed by Author

The matrix suggests a vertical installation as well as a physical one. Construction of a waterfall lagoon space responds to both installation suggestions. Site 23 is a forest with a MetroGreen trail and a stream running straight through it. Opening up an area of the forest that both the stream and trail run through allows MetroGreen users to experience this place and leaves the stream intact. Just to the west of MetroGreen the topography changes in such a way that is perfect for waterfalls. (See Appendix C, Fig. 5.52)

When a MetroGreen user enters Site 23, the surroundings appear ordinary, but as they make their way to the center, they come across this unexpected waterfall lagoon space. It feels as if they have been transported somewhere else. They can choose to pass through the space and enjoy the surroundings on the move or they have the option of sticking around for a while to play in the water or to sit and enjoy the atmosphere. The spray and sound of the water creates an ambiance that relaxes those who choose to enjoy the waterfalls for a longer period of time. Passengers passing by can catch glimpses of the waterfalls and pool through the trees separating MetroGreen from the rail line. Seeing just a peek of this area sparks curiosity in rail passengers encouraging them to visit and enjoy the lagoon through MetroGreen. Lights behind the waterfalls allow the area to glow at night for reasons of safety, a change in atmosphere, and visibility for rail passengers.

Parameters:

- Use of topography change for waterfalls
- Regional rocks for backdrop of the falls
- Expansion of stream for pool area
- Input of a pump for water circulation
- Pedestrian bridge for trail access over pool
- Nighttime waterfall glow

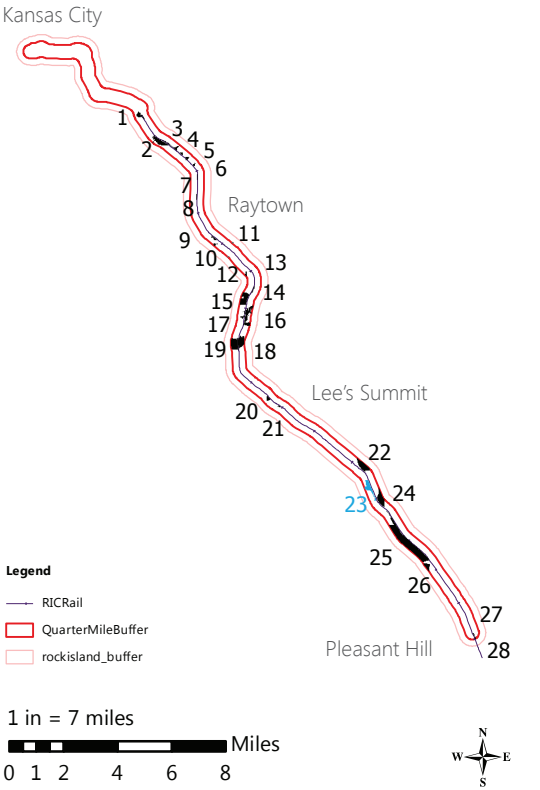


Fig. 3.62 Site 23 Location

Inspiration: Waterfall


Fig. 3.63 Natural Waterfall: The waterfall lagoon area is to appear as natural as possible like this waterfall.


Fig. 3.64 Site 23 Concept: The original concept was to create an unexpected place such as a waterfall area that makes people feel as if they have been transported elsewhere.

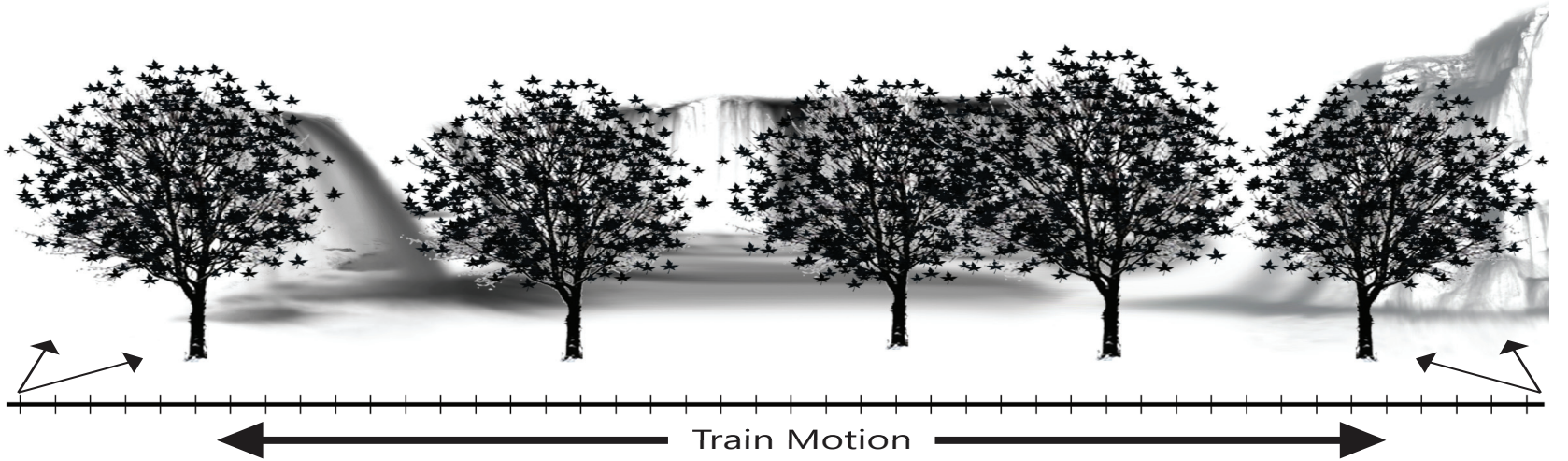


Fig. 3.65 Site 23 Strategy: Rail passengers catch glimpses of the waterfalls through and between the trees separating them from the lagoon.

Fig. 3.66 View of Site 23: The view of the waterfalls and lagoon, as well as the people using it sparks interest in rail passengers to visit the space.

Site 25 | Art Commissioned

The matrix suggests a large amount of small, human scale installations as well as something large because Site 25 has a large amount of forest as well as a large amount of open space. A light stick prairie installation of golden hues utilizes both of those characteristics. The forest starts up at the north end, the open space starts at the south end, and they sort of blend into each other. The light stick prairie uses the idea of how the forest moves from dense to sparse. By infilling the open spaces with a dense prairie of light sticks and thinning them out as they move into the forest the installation mimics the current character of the site in the opposite direction. To emphasize the difference in density and the thinning out of the forest a few trees have been placed in the prairie of light sticks to match the light sticks in the forest.

As one moves from south to north they see a large prairie of sticks that becomes sparse as the trees become dominant, but as one moves from north to south they catch glimpses of sticks hidden in the trees, and as they move further the sticks appear to grow into a full prairie.

Parameters

- Light sticks
- Golden hue
- Up to 6' tall
- Solar powered
- Night glow

Inspiration: Light Stalks

Fig. 3.68 Light Stalks: These lights sticks are representative of prairie grasses and inspired the idea of a full light stick prairie.

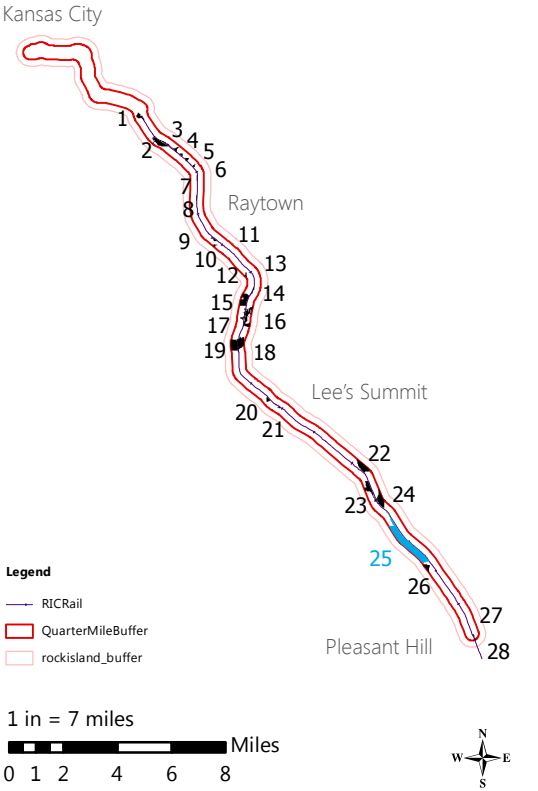


Fig. 3.67 Site 25 Location

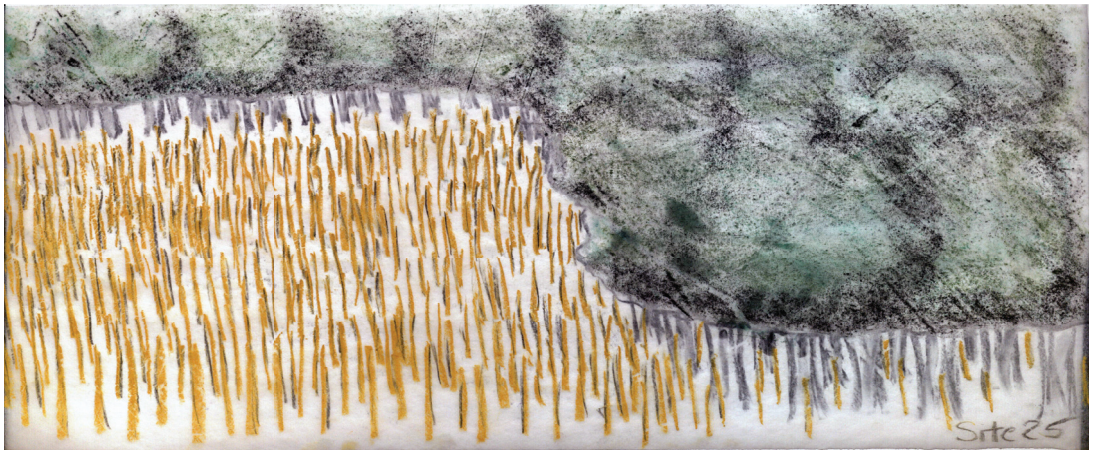


Fig. 3.69 Site 25 Concept: The original concept was to infill the open spaces with the light stick prairie and let it slowly disperse out into the forest.

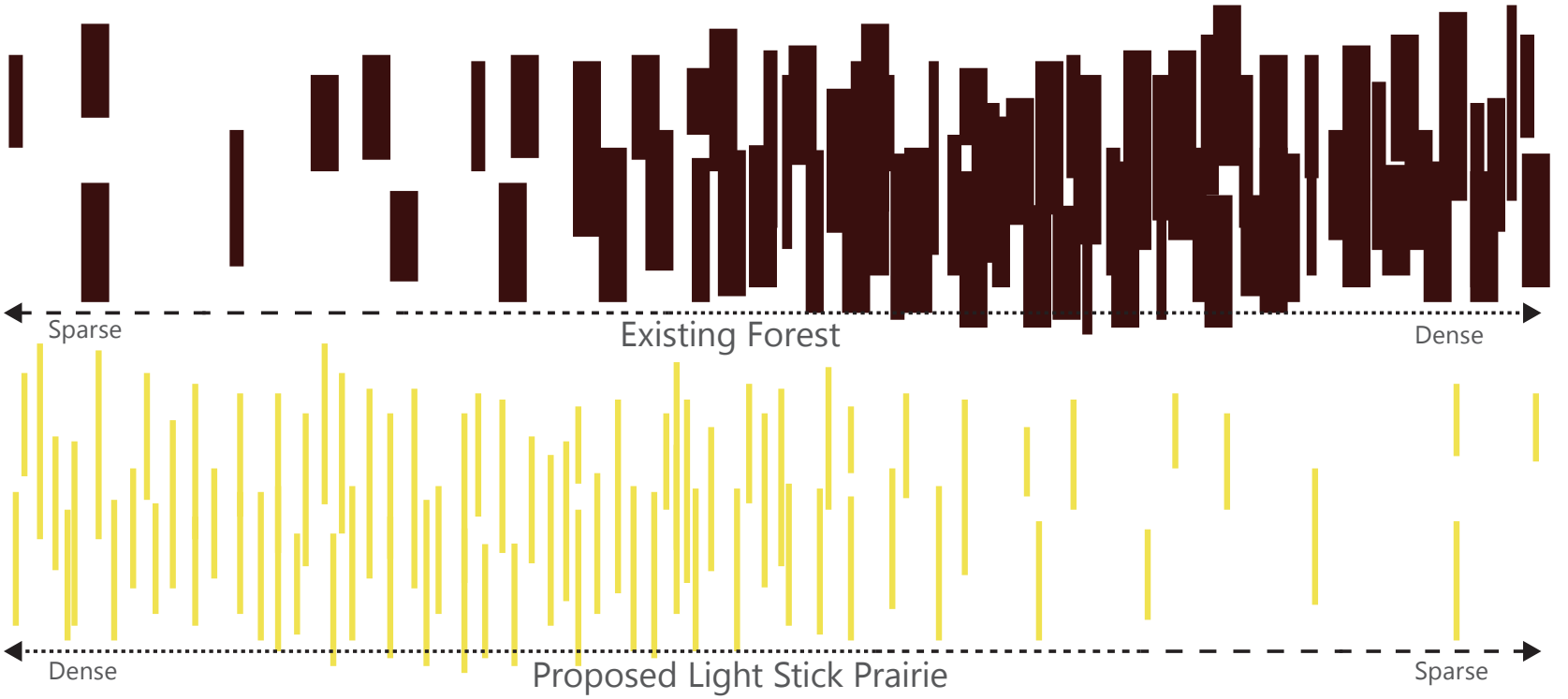


Fig. 3.70 Site 25 Strategy: The prairie mimics the density of the forest in the opposite direction The strategy for the prairie uses the density change of the existing forest to mesh the prairie and the forest.

Site 27 | Art Commissioned

Site 27 is suitable for several types of installations, and this installation utilizes two of those types, landform and blurring. The site is built up with small rolling rills ranging from 3-6' to add variety to the terrain. Protruding from these hills are pieces of art much like those seen on Site 5. They are brightly colored and sturdy but flexible. The flexibility allows the art to move with the wind. In the foreground of the site sits another set of art pieces that serve as a blurring element. These black, vertical sculptures blur together with the motion of the train. The bright color of the background pieces allows them to be seen through the blur of the foreground. At night passengers expect to see the art glow, but instead it becomes shadowed. Solar powered lights set down into the crevices of the hills let the hills glow from below. Barely seen to the point of disappearing, the background art fades into the darkness.

Parameters

Protruding pieces:

- Sturdy yet flexible pieces that can move with the wind
- Bright color
- 1-3 colors
- Shade/tone gradient from top to bottom

Blurring Element:

- Black
- Vertical
- Thin
- Creation of a blur when seen in succession and motion

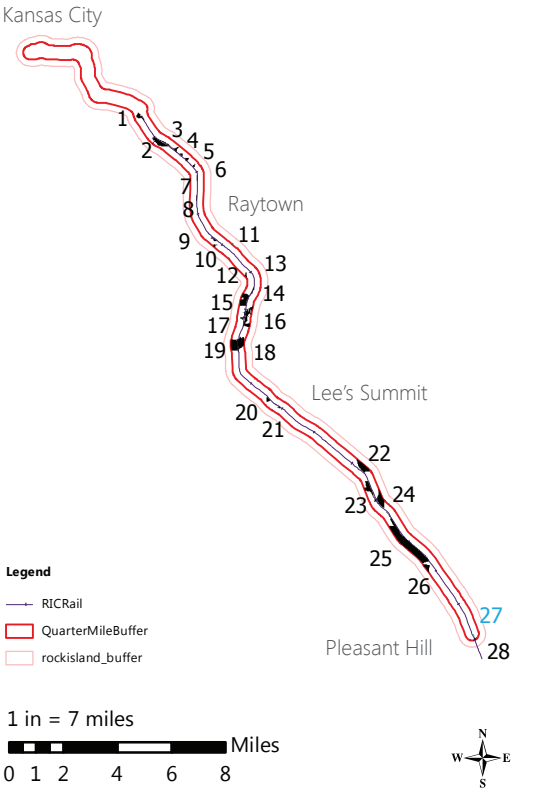


Fig. 3.71 Site 27 Location

Inspiration: Fences in the Hills of New Zealand

Fig. 3.72 Hills of New Zealand: This fence along a high speed road is blurred by the motion of the car. The background colors are still visible through the blur of the fence.

Fig. 3.73 Site 27 Concept: The original concept included a range of brightly colored sculptures that protruded from rolling landforms. A blurring element in the foreground changed the perception of the background.

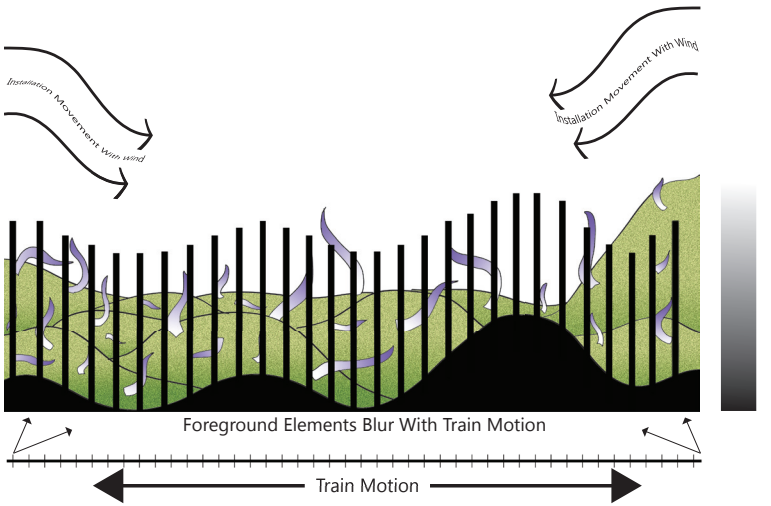


Fig. 3.74 Site 27 Day Strategy: Brightly colored sculptures protrude from rolling landforms. The flexibility of the sculptures allows for movement with the wind. A repeating vertical sculpture in the foreground is blurred when seen in succession with the movement of the train.

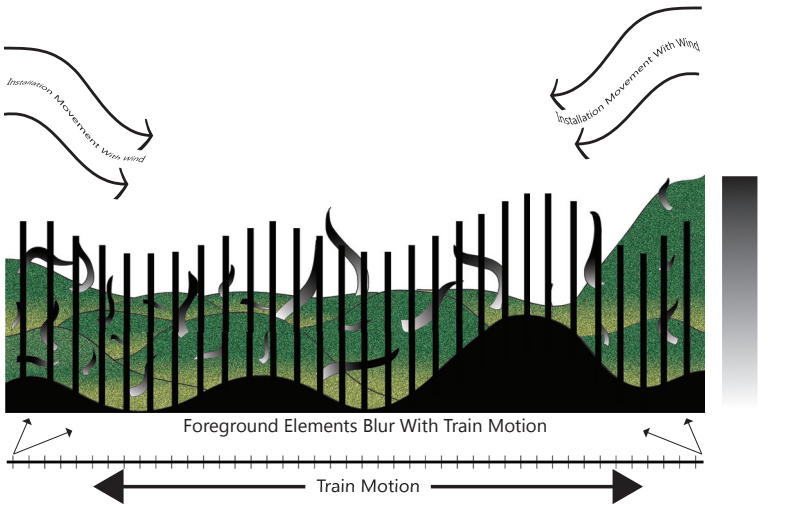


Fig. 3.75 Site 27 Night Strategy: At night the hills light up from the ground up highlighting the landforms and leaving the sculptures in shadow. Dependent upon the darkness of the night, the sculptures can seem to disappear.

Site 28 | Designed by Author

The notion of aquaponics is a strong concept for the corridor, and Site 28 is an ideal site for the characteristics of aquaponics. Not only is it suitable for aquaponics, but it has full visibility from the rail line suitable for a variety of art installations. A pond must be dug at least ten feet down to install aquaponics. The pond is needed for the fish and the depth keeps the fish alive in the winter months. A grow bed adjacent to the pond serves as a part of the aquaponics cycle to support fish growth and provide food for the community. The use of fountains activated by fish sensors creates an ever changing water show that only the fish have control over. As darkness approaches, fish can activate sensors for lights as well to enhance the fountains. To save electricity, a sensor on the rail line activates the fish sensors so that the lights and fountains are only activated when the train is present.

Parameters

- Linear pond
- At least 10' deep
- Adjacent grow bed
- Pump
- Filter
- Fountain Base:
- Incorporation of solar panels
- Solar powered fountains
- Solar powered lights
- Fish sensor on bottom to activate fountains

Inspiration: Bellagio Fountains

Fig. 3.77 Bellagio Fountains: The fountains at the Bellagio in Las Vegas are a popular attraction for their aesthetics as well as their surprising timing. The fountains incorporated into aquaponics mimic the Bellagio show at a much less grand scale, but serve the same purpose of enhancing people's experience.

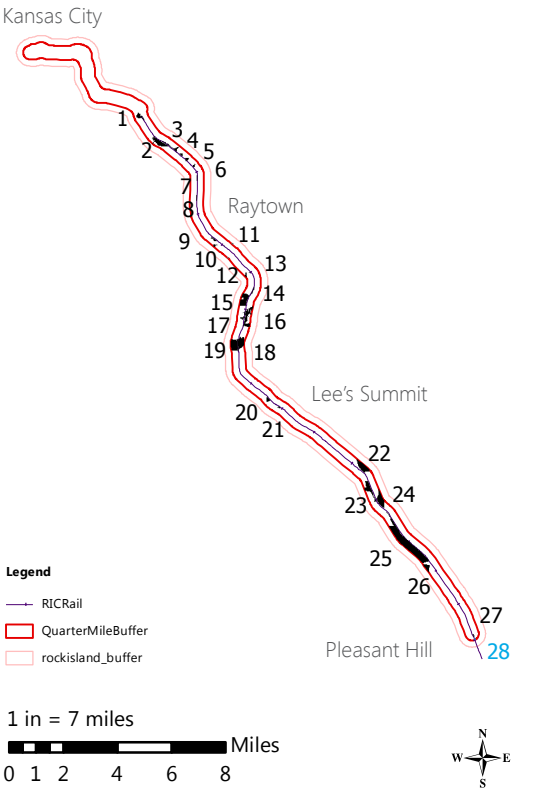


Fig. 3.76 Site 28 Location

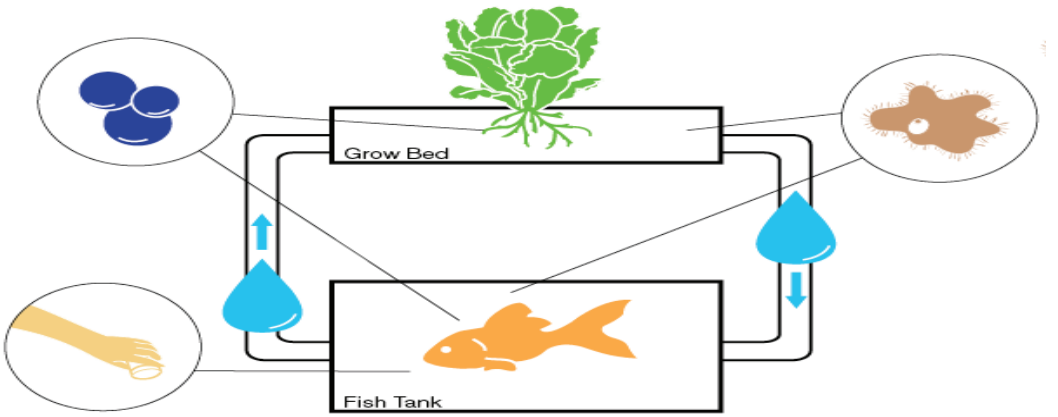


Fig. 3.78 Aquaponics Workings: The workings of aquaponics involve fish and a plant bed whose natural systems support each others growth.

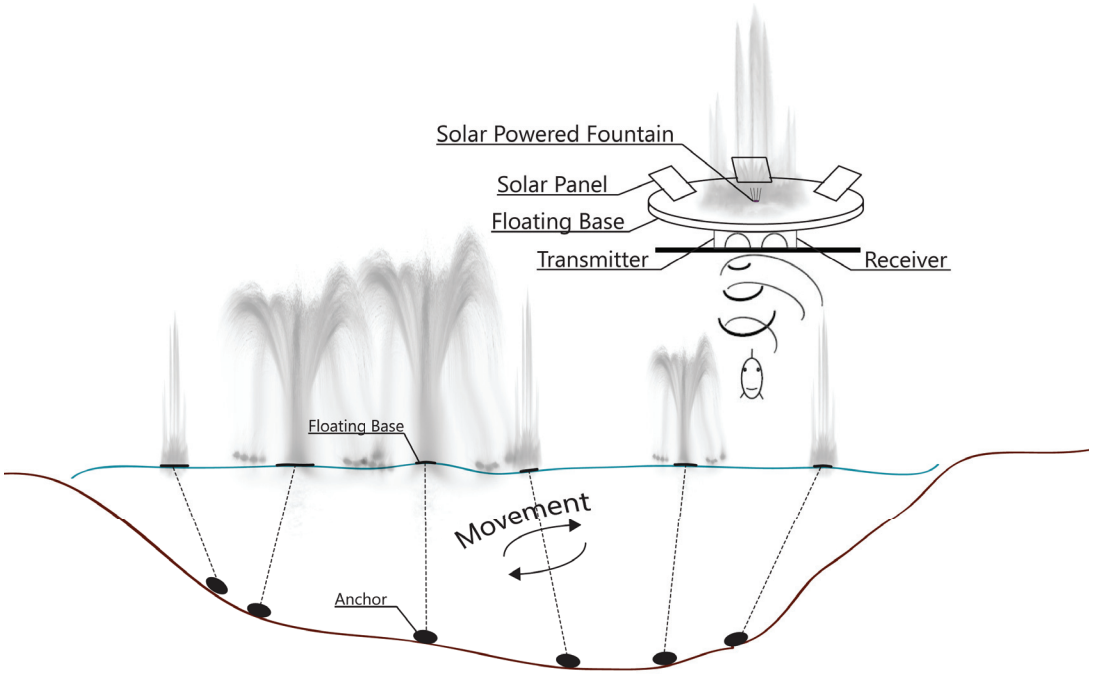


Fig. 3.79 Site 28 Strategy: The floating bases of the fountains are tethered by rope to anchors at the bottom of the pond to keep the bases in place. However, the rope allows movement around the pond for the fountains. Each base consists of solar panels to power the fountains as well as a transmitter and receiver to activate the fountains. "The transmitter transmits a pulse. This pulse is reflected by the fish, and received by the receiver." Broersen 2009

Aquaponics

Fish are fed food and produce Ammonia Rich waste. Too much waste substance is toxic for the fish, but they can withstand high levels of Nitrates.

The bacteria, which is cultured in the grow beds as well as the fish tank, breaks down this Ammonia into Nitrites and then Nitrates.

Plants take in the converted Nitrates as nutrients. The nutrients are a fertilizer, feeding the plants. Also, the plant roots help filter the water for the fish.

Water in the system is filtered through the grow medium in the grow beds. The water also contains all the nutrients for the fish.

Oxygen enters the system through an air pump and during dry periods. This oxygen is essential for plant growth and fish survival.

Full Corridor Installation | Art Commissioned

Fabricated Trees

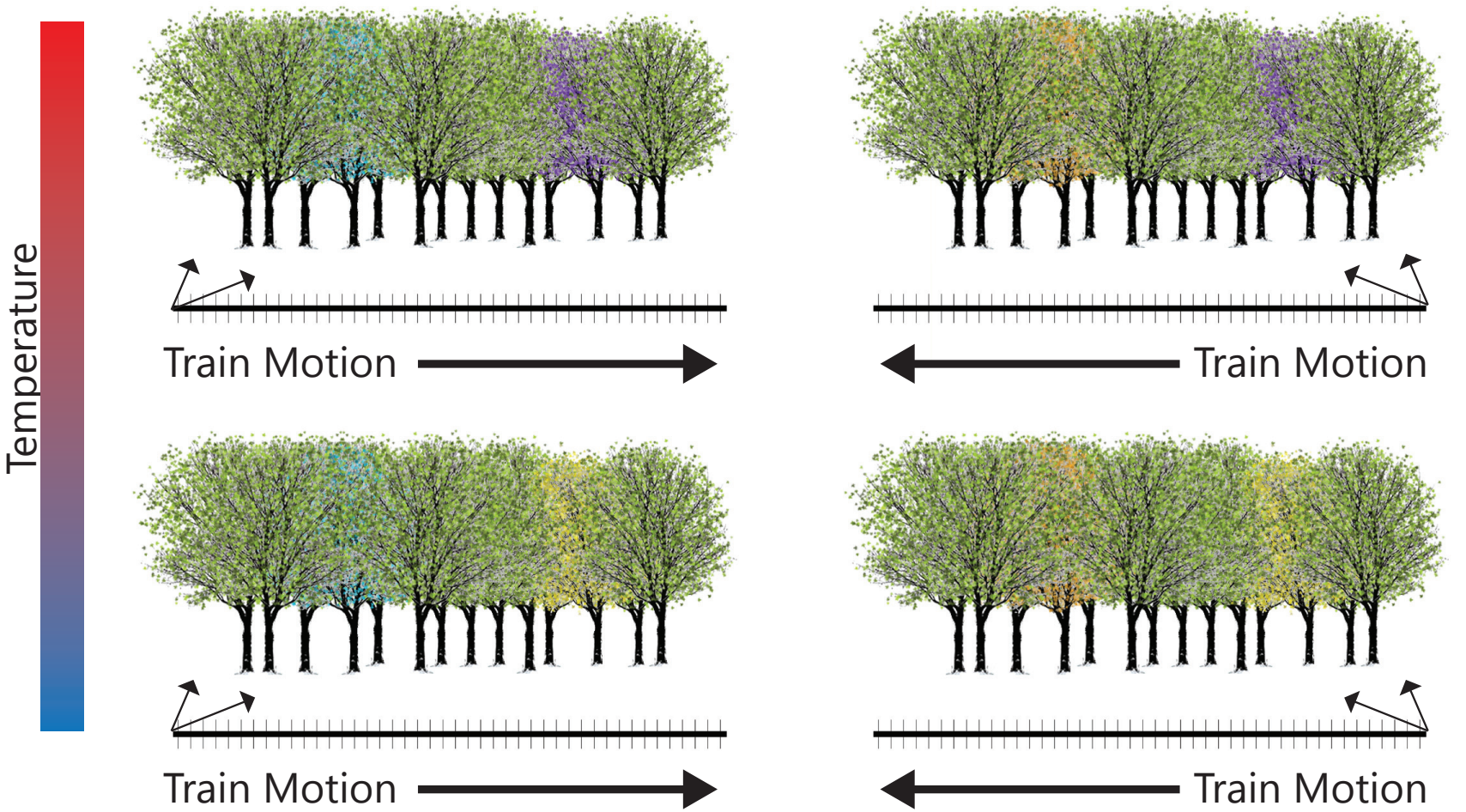


Fig. 3.80 Full Corridor Strategy: Identical to the trees of Site 3, these fabricated trees are found all along the corridor within forested areas. Some are very visible, while others are set back into the forest hidden by other trees. These may take a while to find, and perhaps will not be seen until late fall when the leaves of other trees have fallen. Some of the trees have leaves made with a thermochromism ink meaning they change color as the temperature changes. Passersby will see yellow leaves in the cool air and purple leaves in the warm air. Depending on how drastic the temperature change is, the leaves may change color throughout the day or only from day to day or week to week. The rest of the trees are covered with radiant color film meaning they appear as different colors dependent on the vantage point. As the train heads downtown, these trees appear orange, but as the train heads away from downtown, the same trees appear blue.

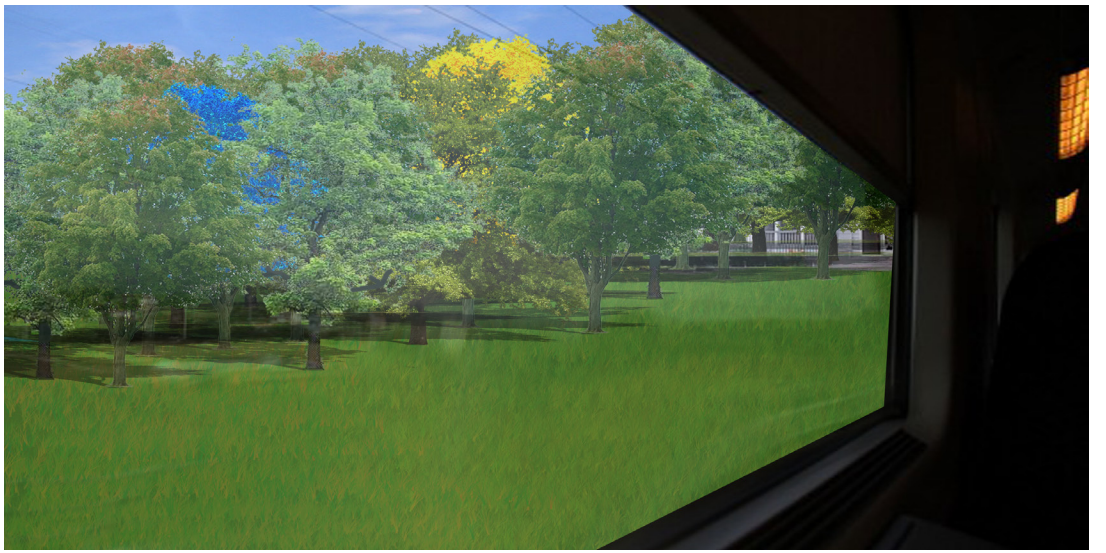


Fig. 3.81 View of Some Blue & Yellow Trees: Some of the trees are somewhat hidden behind other trees and are placed away from the rail line.

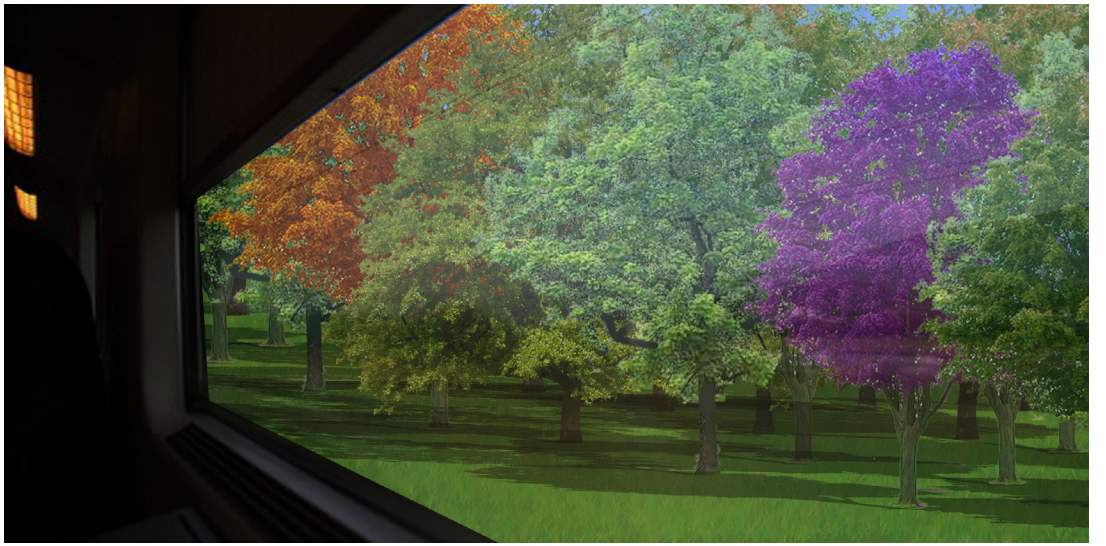
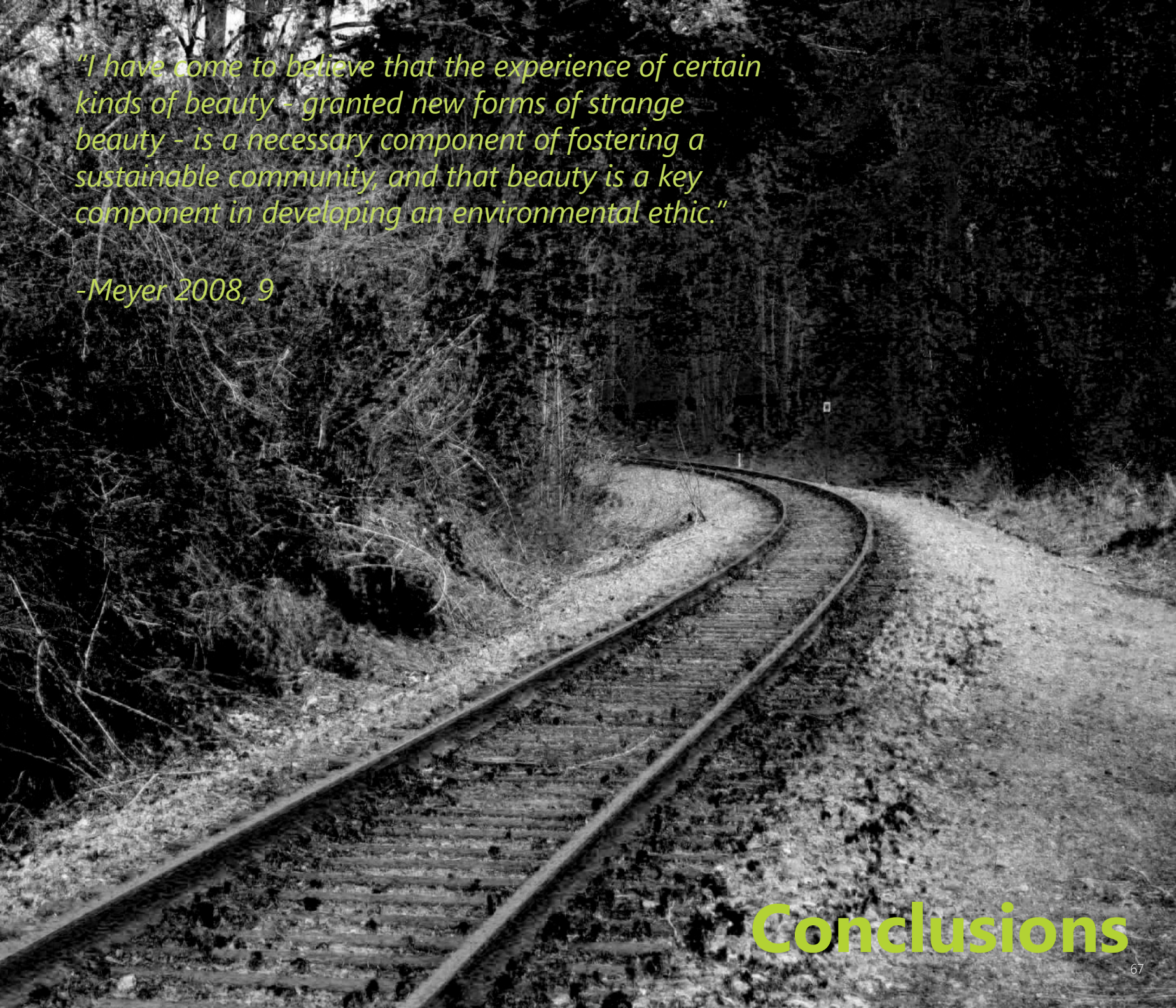


Fig. 3.82 View of Some Orange & Purple Trees: Some of the trees are quite visible and close to the rail line.



"I have come to believe that the experience of certain kinds of beauty - granted new forms of strange beauty - is a necessary component of fostering a sustainable community, and that beauty is a key component in developing an environmental ethic."

-Meyer 2008, 9

Conclusions

Effect on Community

Enhancing the Corridor and the Community

The creation of this visual experience through art installations along the RIC affects people's daily lives whether they realize it or not unless they choose to never look out the window. Public art has a positive effect on people and uplifts their spirits. These installations get the community talking. It starts with people who have either heard about the installations or who have ridden the rail line and seen the installations for themselves. By word of mouth more people become interested and want to see the installations. The only way to see them is to get out on the MetroGreen trails or on the commuter rail. Both are great opportunities to see the installations, and without openly promoting either of these amenities they are in fact promoted as people use them to see the installations. Many people will find they like getting outside and using the trails. Others will realize the convenience of the commuter rail, and ridership will increase as the word of the installations travels.

The use of art installations along the rail line corridor to create an experience for commuters establishes a sense of social sustainability. For a place or community to become sustainable, people must first care about the place. Providing a more vibrant place for people to connect to helps establish topophilia, which then enables them to care about their communities and become more socially sustainable as a community.

The sustainable installations make for a green corridor and encourage people to ask questions and become more sustainable themselves. Utilizing the natural resources of the sites and the environment including topography, vegetation, existing water, sunlight, and climate changes help MARC to understand ways to use the region's natural features to create sustainable communities. The addition of sustainable features including solar energy storage, solar powered lights and fountains, motion sensors to activate electrical installations, introduction of new, native plants, catchment basins, and aquaponics to provide the community with local food also help MARC and the communities ask questions and understand ways to become more sustainable. The aquaponics installations spark the most curiosity because the notion of it is generally unknown to the public. Aquaponics promotes local harvesting and might spark people to install an aquaponics system at their own house for fresh food.

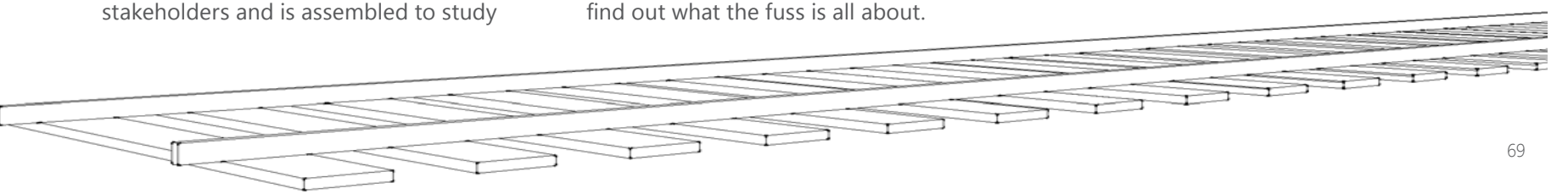
A portion of the funding for the installations comes from the construction budget for the rail line. Kansas City ensures that at least 1% of the engineers cost estimate is set aside for public art (KCMO 2011). The current cost estimate is set at $325-$413 million leaving up to $4,130,000 for public art installations (MARC 2011). Public and private donations will help to fund the remaining costs. Also, the profit

received from the selling of the fish and crops from the aquaponics installations will help to fund the remaining installations. A percentage of the ridership costs could go to the construction and changing of the installations as well as their maintenance. The set 1% guarantees the inclusion of public art, so there is no competition with related projects.

The implementation of the installations will be phased starting with the northern most installations and moving south as time and money allows because the phasing of the rail line will also start at the north end and move south. Even if the phasing of the two do not directly correlate, the direction will stay the same because many of the commuters will be heading into Kansas City, and the northern most section of the line will be used more often.

For installations that are to be commissioned out to artists for design and development an RFP for each installation is published to the public, which includes the set parameters and a more detailed description of the expected art piece. Interested artists submit their RFP to the Municipal Art Commission, who then organizes an Artist Selection Panel. "The panel is made up of art professionals, citizens, staff, and appropriate stakeholders and is assembled to study the project and review artist qualifications and RFPs of those competing. Three to five finalists will be chosen for each installation and will be asked to develop concepts and make a formal presentation, which will then be evaluated for its aesthetic quality, construction quality, appropriateness to the site, and engineering/maintenance criteria." (KCMO 2011) From there, an artist is chosen for each installation. Local and national artists are encouraged to compete for this opportunity.

The addition of the rail line is seen as controversial to some, but the enhancement of the line through these installations out weighs the negative implications of the rail line and can help to persuade the communities to support this fixed guideway transportation option. Making the transportation corridor more than just a transportation corridor through visual, artful installations opens people up to the idea of a fixed guideway system. The RIC will become a place of destinations, recreation, vibrancy, sustainable features, and visual stimulants through the connection of the rail line, MetroGreen trails, installations, and the RIC communities. This experience enhances the corridor and makes it a positive experience, and those who are skeptical will need to experience the corridor for themselves to find out what the fuss is all about.



Recommendations

Awaken the Corridor through Time

As time progresses, some installations will change as certain elements are interchangeable to add variety to the experience. Others are permanent installations. While these installations should stay put for quite a while, there is the option to change them out after a longer period of time. Perhaps these become temporary installations that last longer than a normal temporary art piece, and are then replaced with new installations, but are stored to bring out in the future. If old installations are re-implemented after a few years, people will feel a connection with those pieces because of a certain memory they have of them.

Once the full corridor has been implemented with every installation, the opportunity for a mobile device application arises. The use of an app is a way to bring new life to the corridor after the novelty of the installations has worn off. It would be another way to connect passengers to the corridor. This could be through educational exercises or different types of games. Options for games include augmented reality, word associations that relate to the installations, trivia about the installations, scavenger hunts, and video game based ideas that use the corridor and the installations as the backdrop for the game to occur on. Offering several games within the app reaches more users, and allows them to see the corridor in different perspectives. Some of these ideas have the option for competition with other passengers, which helps create community connections. An app allows passengers to use their mobile device, which is a popular activity on commutes, but immerses them in the surroundings of the corridor and highlights the different installations in ways not obvious without the app.

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Appendix A: Project Progression

Process

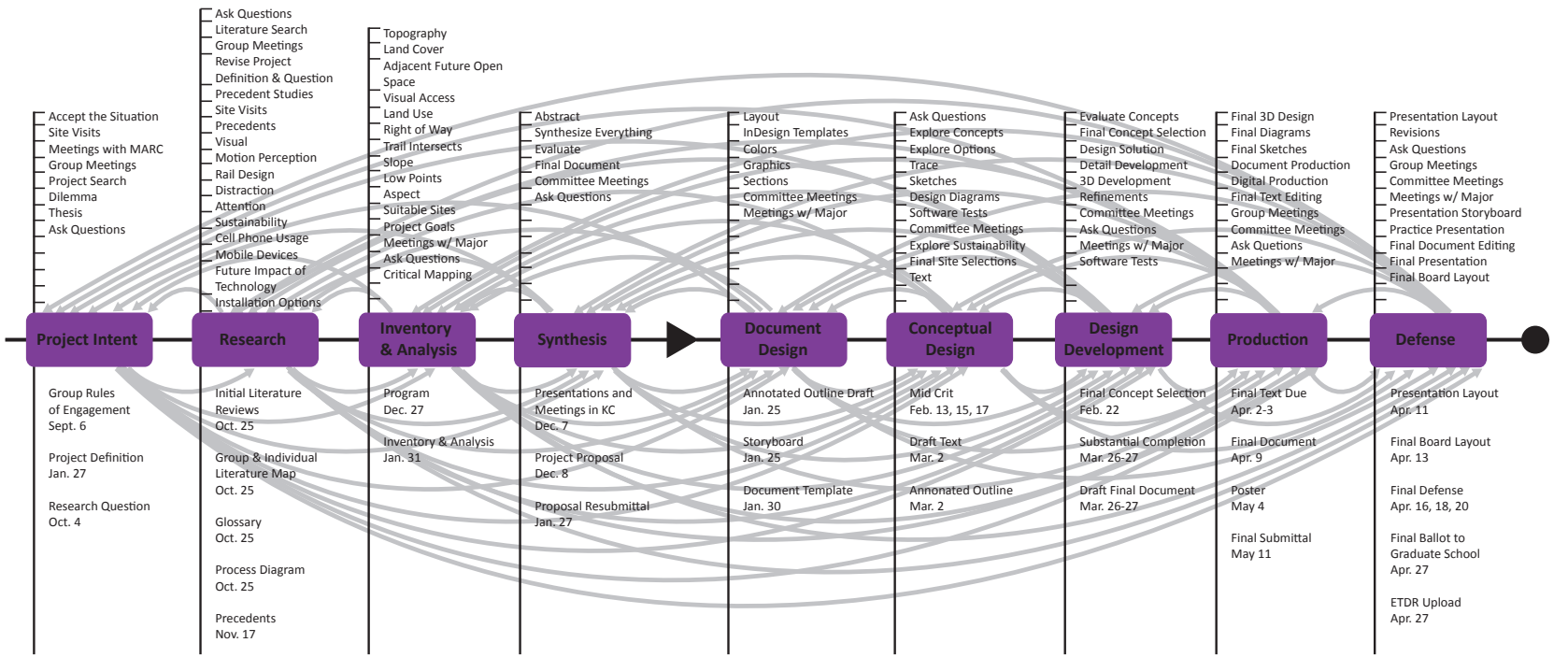


Figure A.1 Process Diagram: This process diagram illustrates that I am generally a linear thinker. However, the gray arrows symbolize that as I work I typically go back to earlier tasks and processes as well as think about how things will work out in the future. This way no one task becomes isolated without thinking about the other factors of the project.

Timeline

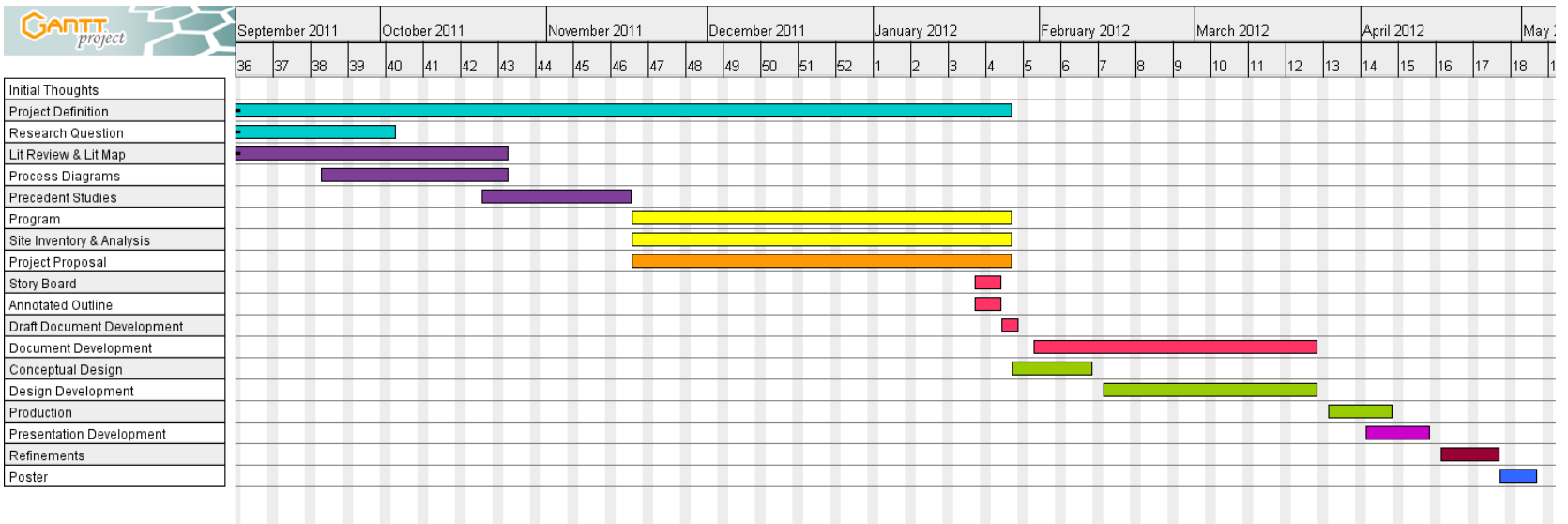


Figure A.2 Project Timeline: This timeline diagrams out each phase and the general tasks to be completed.

Appendix B: Literature Reviews

Literature Map

Title	Author	Format	Commuter Rail	Mobile Devices	Visual Design	Aesthetics	Experience	Sustainability
Cell Phone Usage and Social Interaction with Proximate Others: Ringing in a Theoretical Model	Omotayo Banjo	Journal Article (pdf)		■			■	
Distracted: The Erosion of Attention and the Coming Dark Age.	Jackson, Maggie	Book		■				
Elements of Visual Design in the Landscape	Bell, Simon	Book			■	■	■	
Gray World, Green Heart: Technology, Nature, and Sustainable Landscape	Thayer, Robert	Book		■			■	■
How Does Commuter Rail Differ From Light Rail and Heavy Rail?	SEWRCP	Newsletter	■					
Keep Your Thumbs Still When I'm Talking to You	Carr, David	Newspaper Article		■			■	
Reclaiming the Obsolete in Transitional Landscapes	Kamvasinou, Krystallia	Journal Article (pdf)	■		■	■	■	
Sustaining Beauty: The Performance of Appearance	Meyer, Elizabeth	Journal Article (pdf)			■	■	■	■
The Aesthetics of Landscape	Bourassa, Steven C.	Book			■	■	■	
The Awakened Eye	Parmenter, Ross	Book			■		■	
The View From the Road	Appleyard, Donald	Book			■	■	■	
Visual Values for the Highway User	Hornbeck, Peter L.	Book			■		■	

Table 2.1 Literature Map: This literature map references the literature examined while also making connections to the other literature through the use of subjects identified in the literature. Source: By author

Literature Reviews

Appleyard, Donald, Kevin Lynch, and John Randolph Myer. 1964. The view from the road. Cambridge: Published for the Joint Center for Urban Studies of the Massachusetts Institute of Technology and Harvard University by the M.I.T. Press. Massachusetts Institute of Technology.

Donald Appleyard, theorist and urban planner, graduated from M.I.T. in architecture and urban planning. He later taught there and also at the University of California, Berkeley.

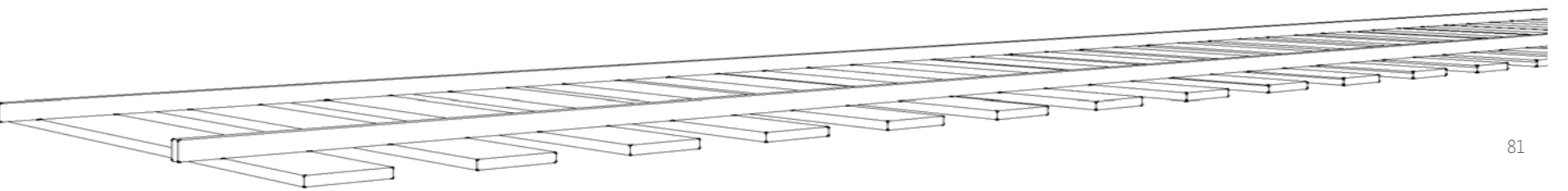
Appleyard discusses the entire highway landscape, recording of the highway sequence, analysis of existing highways, and methods of design. He really sinks his teeth into how the users experience the highway, both the driver and passengers. Much of the information is about the driver, paying attention to other traffic, and seeing the landscape in front of the car. However, there is a lot of valuable information about how to design for movement of a vehicle, which is just as relevant to riding the rail line. He visually shows the reader design elements through extremely useful diagrams, which I plan to use to diagram my design along the corridor instead of developing a master plan for the entire corridor.

Bell, Simon. 1993. Elements of visual design in the landscape. London: E & FN Spon.

Simon Bell is a Senior Research Fellow in the Faculty of Environmental Studies at Edinburgh College of Art, Edinburgh, UK. He is a forest and landscape architect and has been responsible for design advice and training in landscape design for the forestry industry around the world.

This book is a take on Form, Space, and Order, but specifically for visual landscapes. It shows how landscapes can be designed, and how those designs are perceived by society. The book is rich with diagrams that refer to design principles along with many examples and case studies that serve as evidence.

While this book is not very resourceful at this point in the project, I imagine that it will become quite helpful once I start designing specifically for organizational patterns within specific sites.



Literature Reviews

Bourassa, Steven C. 1991. The aesthetics of landscape. London; New York: Belhaven Press

Steven Bourassa has worked at a number of universities in the departments of City and Regional Planning as well as Urban and Public affairs.

I did not read the whole book as most of it did not seem relevant. For a large part of the chapters I read, Bourassa uses the pages to disagree with others' theories and ideas. He categorizes aesthetic experience into different dimensions. For the most part they make quite a bit of sense considering the opinions he argues against are quite transparent. But what he was getting at with these dimensions was much too dense for the type of aesthetic I am looking at, but also lacking in quite a bit of elements that make a landscape. The only help I was able to find from this book was his definition of landscape experience, which I adapted for how I see the experience for my project.

Carr, David. 2011 "Keep Your thumbs Still When I'm Talking to You." sec Fashion & Style. New York Times, April 15, 2011. http://www.nytimes.com/2011/04/17/fashion/17TEXT.html?pagewanted=all.

David Carr writes the Media Equation column for the
media issues including print, digital, film, radio and television. Monday Business section of the New York Times that focuses on He also works as a general assignment reporter in the Culture section of The Times covering all aspects of popular culture.

Carr discusses how unattached society has become to the rest of society. Rudeness has become the norm. Having a conversation with a person without distractions is becoming unusual. He talks about specific experiences he has encountered with people who spend their lives with one eye on a mobile device at all times. Anthony Breznican, a reporter for Entertainment Weekly, said "All it takes is for one person at a dinner to excuse himself into his phone, and the race is on among everyone else." We gather in groups only to find ourselves in a conversation with our phones. At a South by Southwest Interactive conference, the biggest reaction in the session by far came when Anthony De Rosa, a product manager and programmer at Reuters, said that mobile connectedness has eroded fundamental human courtesies.

Literature Reviews

While this article did not hit on how this addiction to technology will affect our futures, it makes an important point on how common courtesy is disappearing quicker than anyone could have thought, and what it is doing to our society, which brings another element to this project's dilemma. The experiences examined are evidence of how technology is currently changing our everyday lives and what it is doing to our culture. Carr proves through his experiences, which I am positive most people can relate to, that technology is only moving forward. New technology is being invented every day, and a large number of society cannot wait to get their hands on the newest technology. With every new device and app created, our worlds become more engrossed in the cyber world, and less and less with the surrounding reality of here and now.

Hornbeck, Peter L. 1976. Visual values for the highway user: an engineer's workbook. American Society of Landscape Architects.

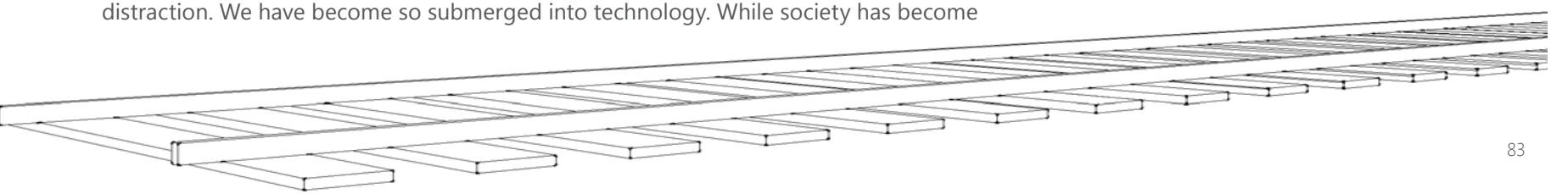
A nationally known landscape architect, Peter Hornbeck was on the faculty of Harvard's Graduate School of Design for 17 years. He also owned a landscape design firm in North Andover.

Hornbeck provides a process on how to design for the highway user with specific sections such as corridor selection and scenic experience along with steps for each of those. He also goes through a few case studies to see what works and what does not. Much of the book was not helpful as it was about finding an ideal location for a highway. However, Hornbeck provides a decent set of guidelines and process for figuring out where to start with design along a corridor and how to select sites based on visual values as well as designing certain components such as different ways to use the vegetation to manipulate the experience.

Jackson, Maggie. 2008. Distracted: the erosion of attention and the coming dark age. Amherst, N.Y.: Prometheus Books.

Maggie Jackson is an award-winning author and journalist who writes the popular "Balancing Acts" column in the Boston Globe. Her work also has appeared on National Public Radio and in the New York Times, among other national publications.

Jackson discusses how much the world has changed due to technology in the terms of distraction. We have become so submerged into technology. While society has become



Literature Reviews

great multi taskers with the use of technology, we have also become way more distracted, and the loss of attention to important things has risen greatly.

While technology has made cyber connections very easily accessible, we are becoming less and less connected in just about every other way possible. We no longer notice the people around us even if we know them well and made plans to meet them. The world we are surrounded in goes unnoticed. I imagined this book would be more helpful than what it is. Much of what Jackson discusses is evident in everyday lives, and I did not feel that I learned as much from her as I had anticipated.

Kamvasinou, Krystallia. 2006 "Reclaiming the obsolete in transitional landscapes: perception, motion, engagement." Journal of Landscape Architecture 2006/2: 16-27.

Krystallia Kamvasinou holds many degrees across the design disciplines, has made multiple public lectures, and has released several publications. She has done much research in the field of this article as her thesis for her PhD was "Transitional landscapes. An investigation into motion perception and its implications for landscape design".

This article is the core of what my project is. Kamasinou discusses how we can use the transitional spaces along a rail corridor to our advantage to take the passengers on a journey that allows them to change into participatory passengers. She also discusses how we see things while in motion on a train, and how certain elements affect our perception. She goes through a few studies that have used this idea of reclaiming the obsolete in transitional landscapes that show how design has been used and what it does for the experience. This article has given me new vocabulary and definitions that will help define my project as a whole.

Meyer, Elizabeth. 2008. "Sustaining beauty. The performance of appearance." Journal of Landscape Architecture 6-23.

Meyer is a landscape architect and leading landscape architectural theorist. Her career has taken her to several universities and highly regarded firms. Her education and career have narrowed her focus to modern landscape theory, practice of landscape criticism, and site interpretation. She has several publications that are used to educate aspiring landscape architects.

Meyer discusses the idea of creating sustainable landscapes that are not only sustainable but beautiful as well; Beautiful in the sense of aesthetics, which she describes as a full

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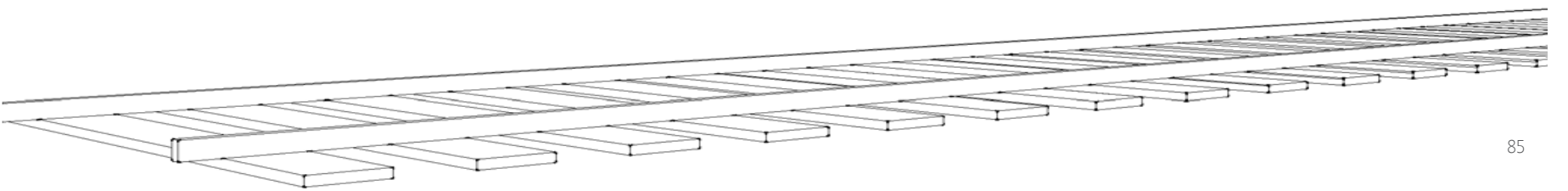
sensory experience as compared to a strictly visual aesthetic or appearance. Much of this article is quite opinionated, but she makes some well thought out points about people perceiving sustainable landscapes as beautiful when they are found in unexpected places. Otherwise, they are seen as messy, natural landscapes, which society tends to look right past.

Implementation along the rail line will be a combination of purely appearance pieces and pieces of appearance and aesthetics. Much of the work along the line will be for appearance only as they are intended as visual stimulation for the rail line commuters that are zooming by. However, some of the work will be actual places that are intended not only for the passing by commuters, but also for trail users. These users will either be passing through these spaces directly on the trail or have the option to stop and visit these spaces to have an aesthetic experience.

Omotayo Banjo, Yifeng Hu and S. Shyam Sundar. 2008. "Cell Phone Usage and Social Interaction with Proximate Others: Ringing in a Theoretical Model." The Open Communication Journal 2: 127-135

S. Shyam Sundar (PhD, Stanford University) is a distinguished professor and founding director of the Media Effects Research Laboratory at Penn State University's College of Communications. His research investigates social and psychological effects of technological elements unique to online communication, ranging from websites to newer social media. The article expresses the observational research of how cell phone usage impacts social equity. They discuss how it negatively affects people in different environments specifically private vs. public and interior vs. exterior. They observe how cell phone users interact with their static and social environment while using their cell phone along with its effect on their attention. They also conducted a study on what reaction cell phone users have to a stranger in need. The result was quite negative as most of those users did not notice a person in need of help, saw that someone was in need and chose not to help, or they waited to see if another patron would help them first.

This article is evidence that cell phones and other portable devices are major distracters not only from our surrounding environment, but also the people around us. Technology is only going to move forward making our accessibility to it even greater resulting in more distraction away from our surrounding reality. Technology is only going to move forward,



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and there will never be a way to get people off of their devices or to make them care about others, but by creating an app that forces riders to engage in their environment, users may or may not become more aware of their immediate surroundings.

Parmenter, Ross. 1968. The awakened eye. Middletown, Conn: Wesleyan University Press.

Ross Parmenter was the music editor for the New York Times, and author of twelve books many of which covered the topic of observation. While this book didn't offer any really valuable information as it was one man writing about his own observations, it did help me realize what I want to do and what I don't want to do. Ross focuses on how much we do not see in life. There seems to be more to just about everything. After reading the chapter about face cards, I realized that I do not want to implement a complicated visual design. I want it to be simple. Our lives are already so complicated, we don't need anything more to think about.

It seems that just about any kind of design, artwork, and representation has some sort of meaning. It becomes an endless cycle. This is what I do not want to portray through this experience. The installations will have no meaning whatsoever. Some of them will have relevance, such as the use of aquaponics to create a more sustainable community, but that is all. If people choose to find a meaning in the installments then so be it, but I am not intending there to be any meaning behind the work. They are simply there to make for a more enjoyable experience.

SEWRPC. 1998. "How Does Commuter Rail Differ from Light Rail and Heavy Rail?" SEWRPC newsletter 38-2.

The Southeastern Wisconsin Regional Planning Commission (SEWRPC) is the official metropolitan planning organization (MPO) and regional planning commission (RPC) for the seven county southeastern Wisconsin area.

This article of the newsletter compares commuter rail, light rail, and heavy rail including speed, which is a large element of creating a visual design. However, it still leaves me puzzled as to which is being proposed for the Rock Island Corridor. Commuter rail and light rail have both been mentioned, but after reading this article they seem to be quite similar, but differ in speed, length, and shared tracks.

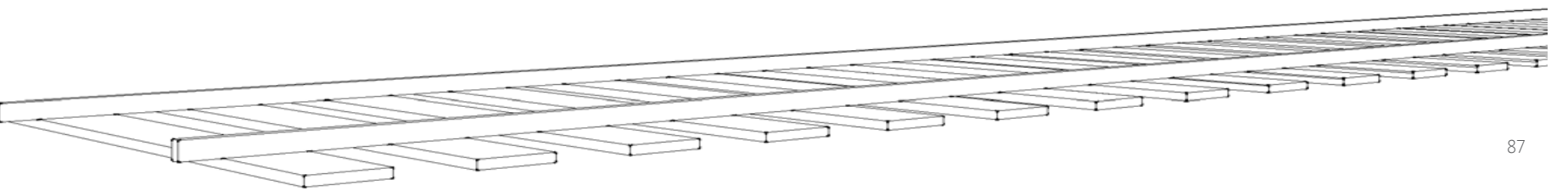
Literature Reviews

Thayer, Robert L. 1994. Gray world, green heart: technology, nature, and sustainable landscape. New York: Wiley.

As a well known name in landscape architecture, Robert Thayer has much experience in the field. As a licensed landscape architect and founder of the landscape architecture program at the University of California, Davis, he has done much research in the area of study concerned with technology, nature, and sustainable landscape.

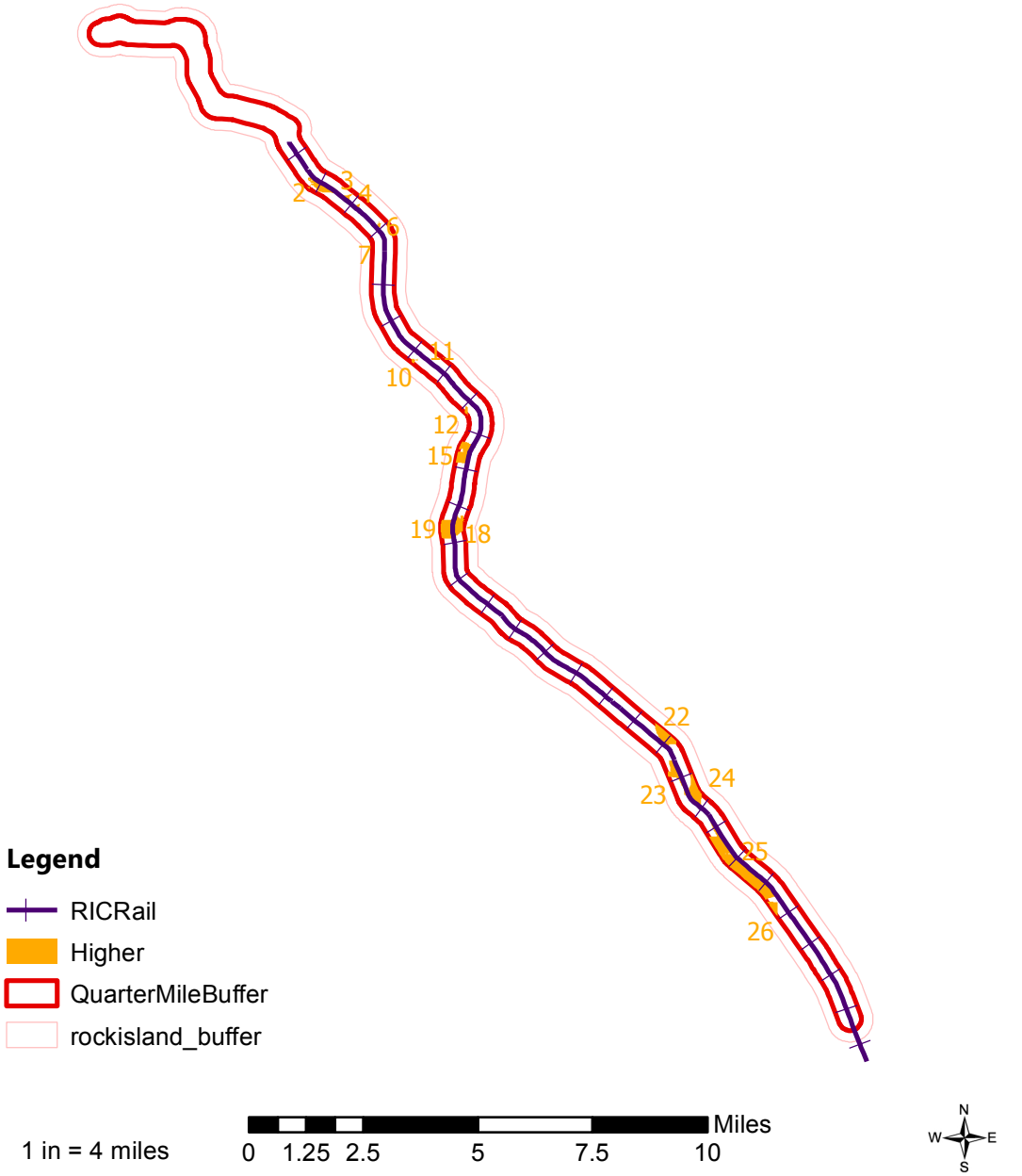
Thayer discusses topophilia, technophilia, and technophobia, and how they all interrelate with society. Generally, this book was not helpful as a whole. It seemed to be more about general technology and how it is helping the world, but also how it is negatively affecting our world. There are some key points in the first third of the book about how people react to natural landscapes as compared to artificial landscapes.

The last third of the book discusses sustainable practices, but they're relatively general and pertain to solar and wind energy along with storm water management. However, this book was written in 1994, and the world of sustainability has since moved forward.



Appendix C: Site Inventory & Analysis

Sites Higher Than 4’ Above Rail Line



Figures C.1-C.42 illustrate the sites with the attributes used to determine suitability for installation attributes. Figure C.1 identifies sites that are higher in elevation than the elevation of the rail. Figures C.3-C.16 illustrate the determination of whether the site is higher or lower than 4’ above the rail, as four feet is a general marker for where a passenger’s head is at in comparison to the rail line.

Fig. C.1 4’ Above Rail: Sites that are higher than 4’ feet above the rail line are distributed along the length of the corridor. Source: Adapted by author from MARC 2011

Sites Lower Than 4’ Above Rail Line

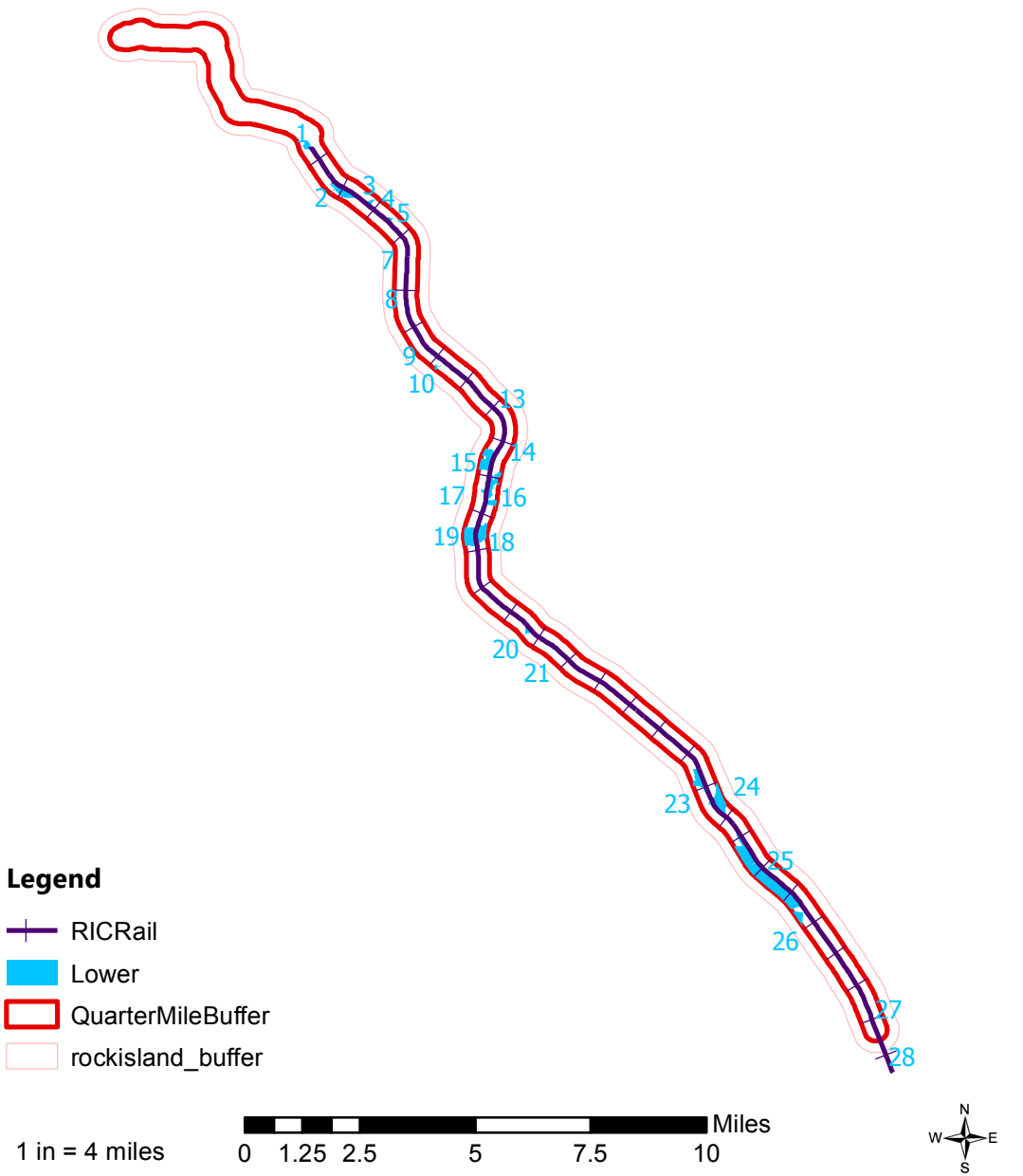


Figure C.2 identifies sites that are lower in elevation than the elevation of the rail.

Fig. C.2 4’ Below Rail: Sites that are lower than 4’ above the rail line are also distributed along the length of the corridor. Source: Adapted by author from MARC 2011

Profiles: Sites 1-6

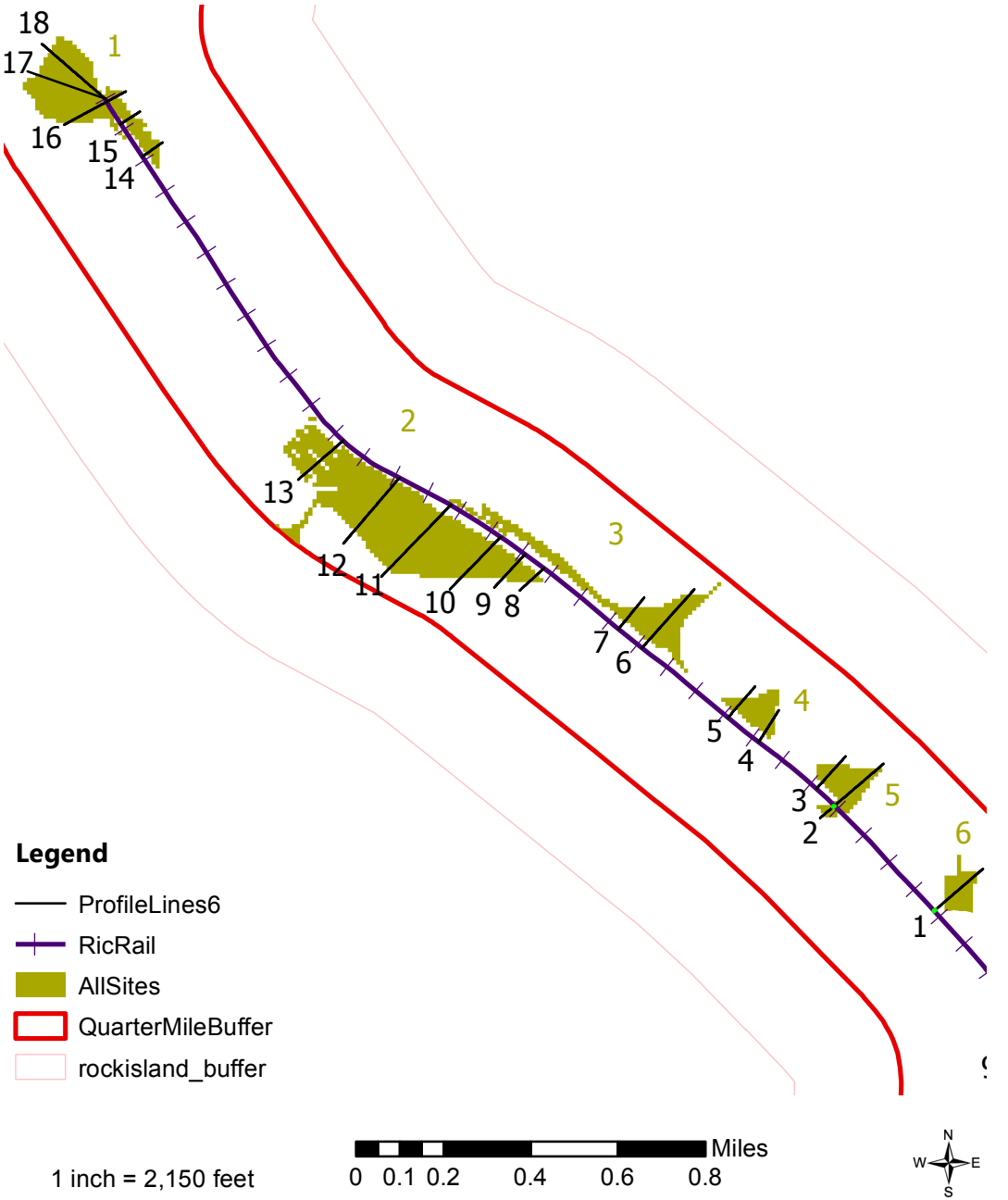


Fig. C.3 Sites 1-6 Profiles

Figures C.3-C.16 identify sample profiles taken through each site. Figure C.3 illustrates the location of the profiles taken through sites 1-6. The graphs in figure C.4 identify which areas of the profile are higher and lower than four feet above the rail.

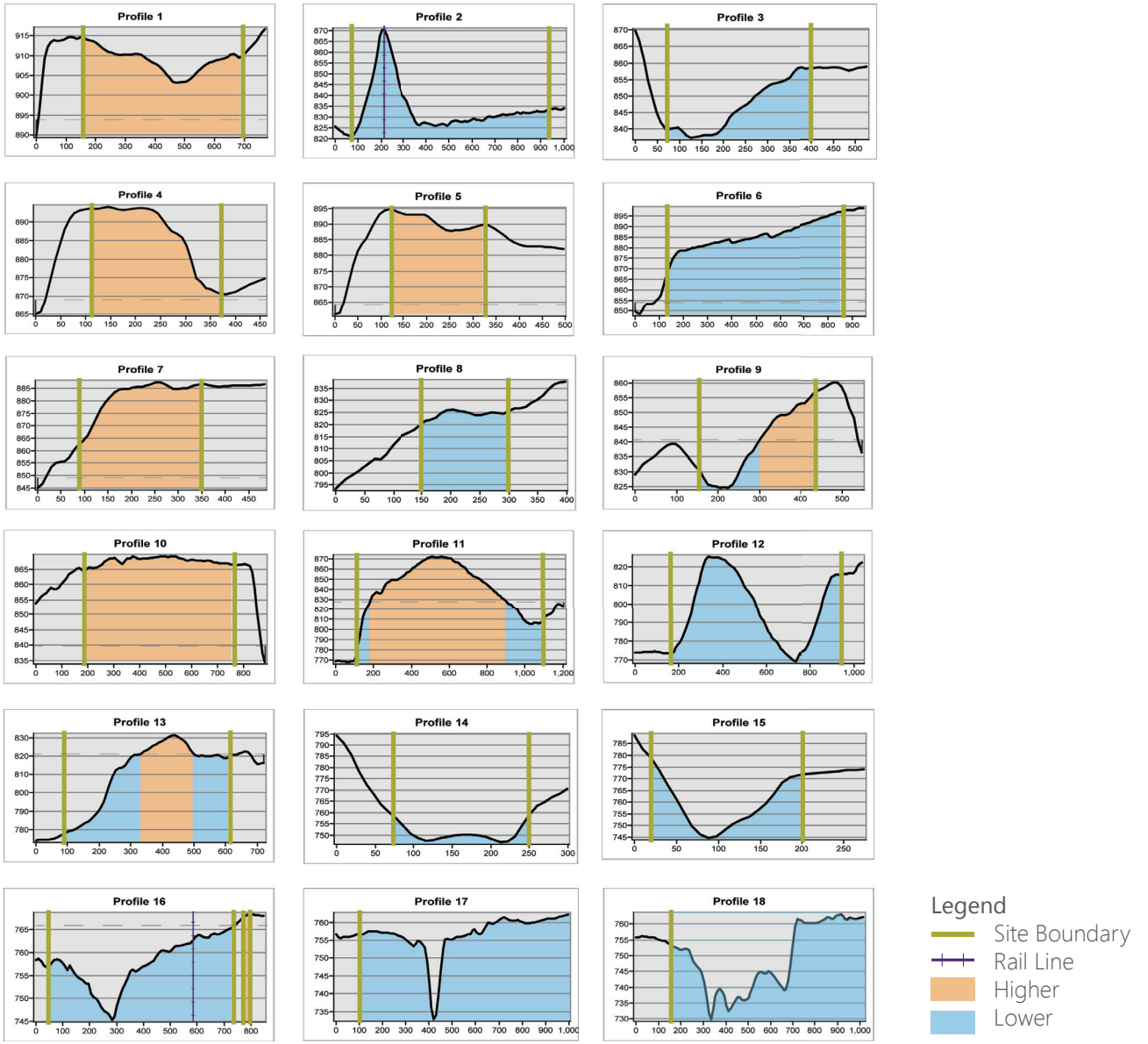


Fig. C.4 Sites 1-6 Profile Graphs: Sites 1-6 are a mix of sites that have topography that is lower and higher than 4' above the rail line.

Profiles: Sites 7-11

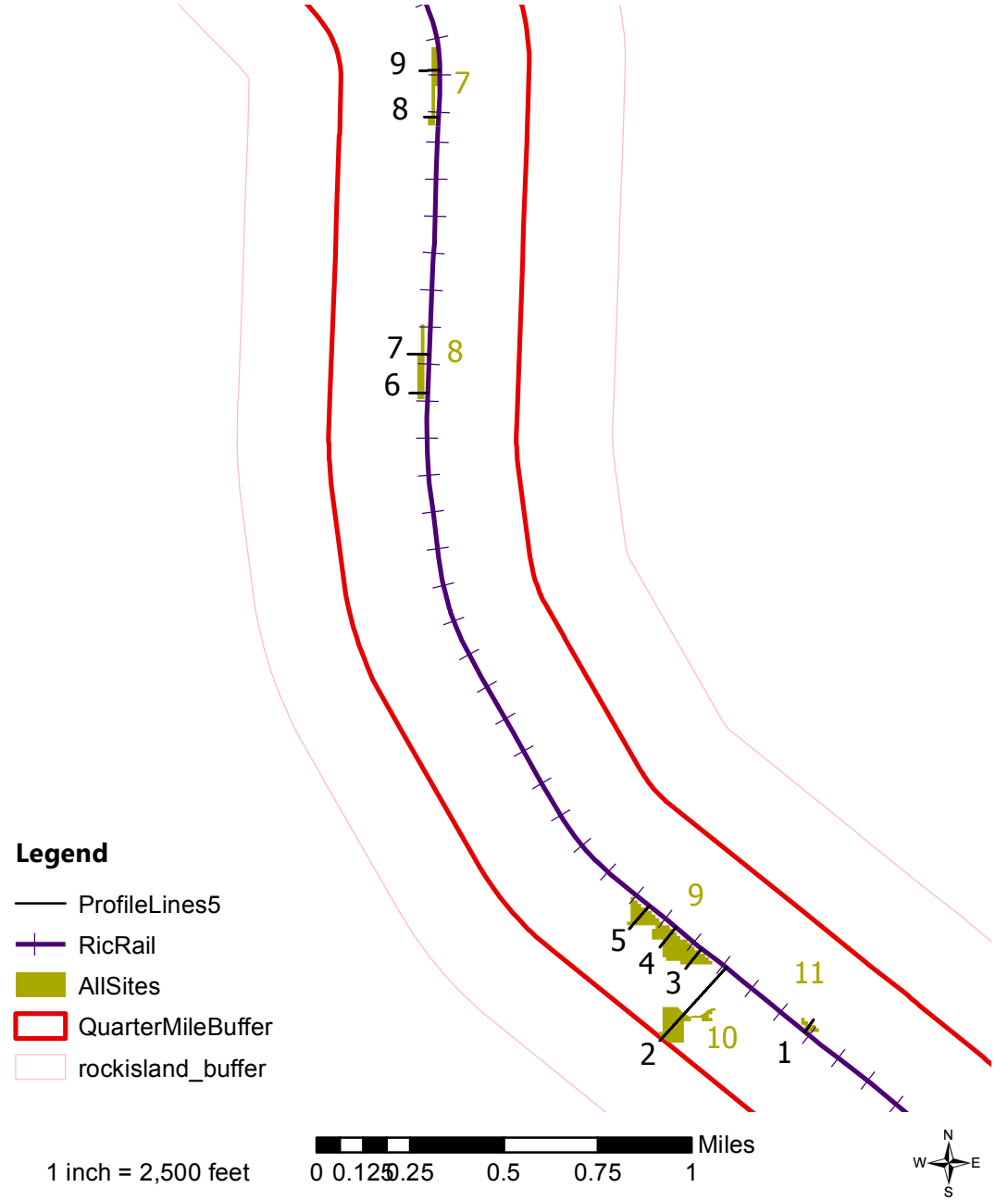


Figure C.5 illustrates the location of the profiles taken through sites 7-11. The graphs in figure C.6 identify which areas of the profile are higher and lower than four feet above the rail.

Fig. C.5 Sites 7-11 Profiles

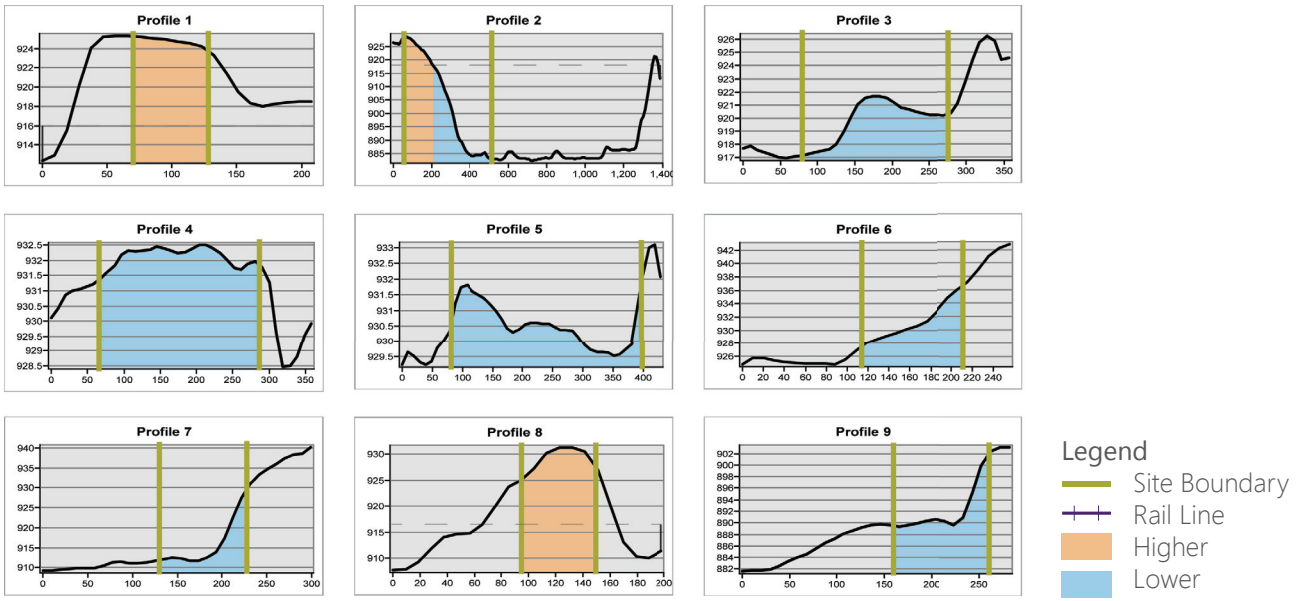


Fig. C.6 Sites 7-11 Profile Graphs: Sites 7-11 are a mix of sites that have topography that is lower and higher than 4' above the rail line.

Profiles: Sites 12-19

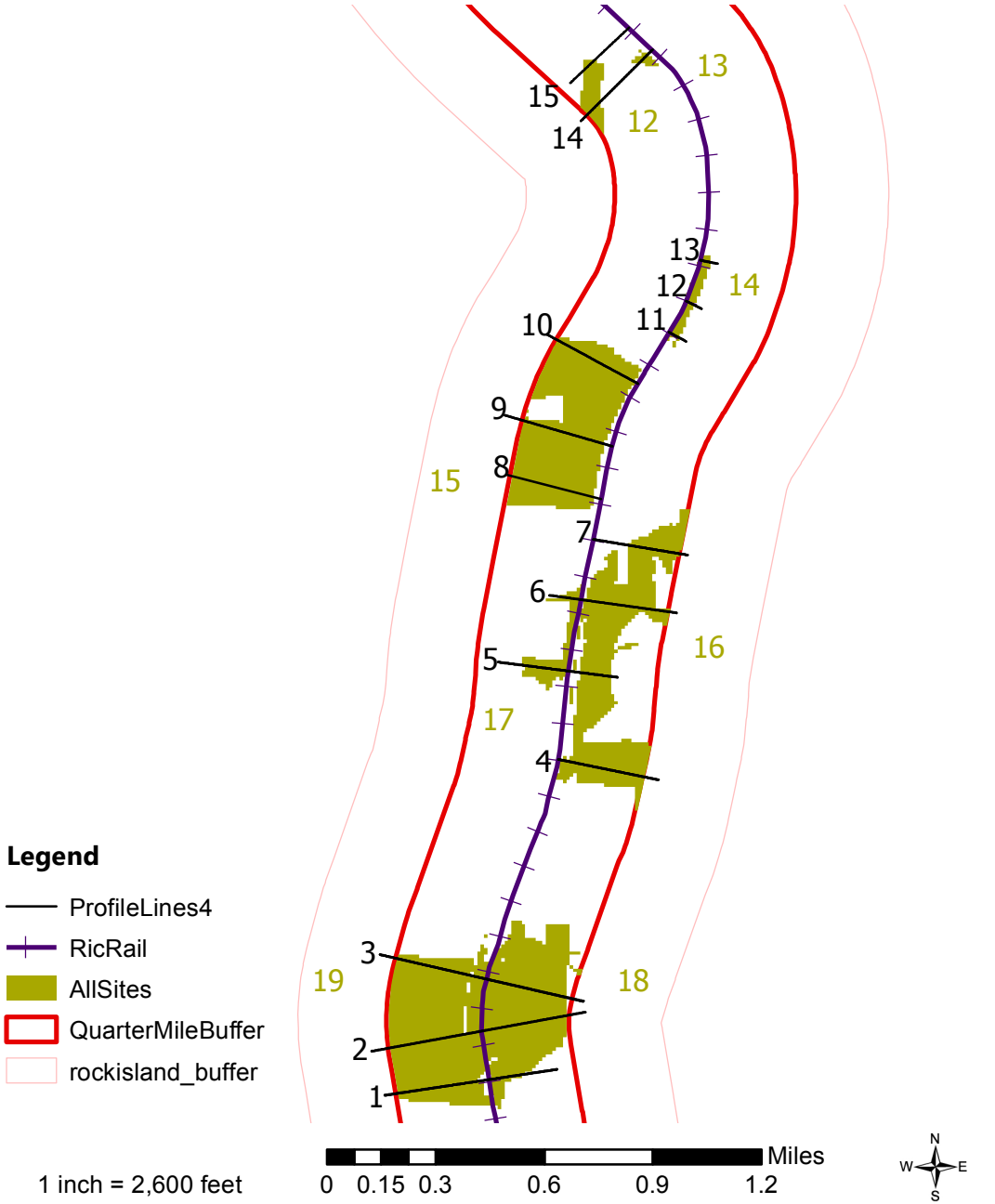


Figure C.7 illustrates the location of the profiles taken through sites 12-19. The graphs in figure C.8 identify which areas of the profile are higher and lower than four feet above the rail.

Fig. C.7 Sites 12-19 Profiles

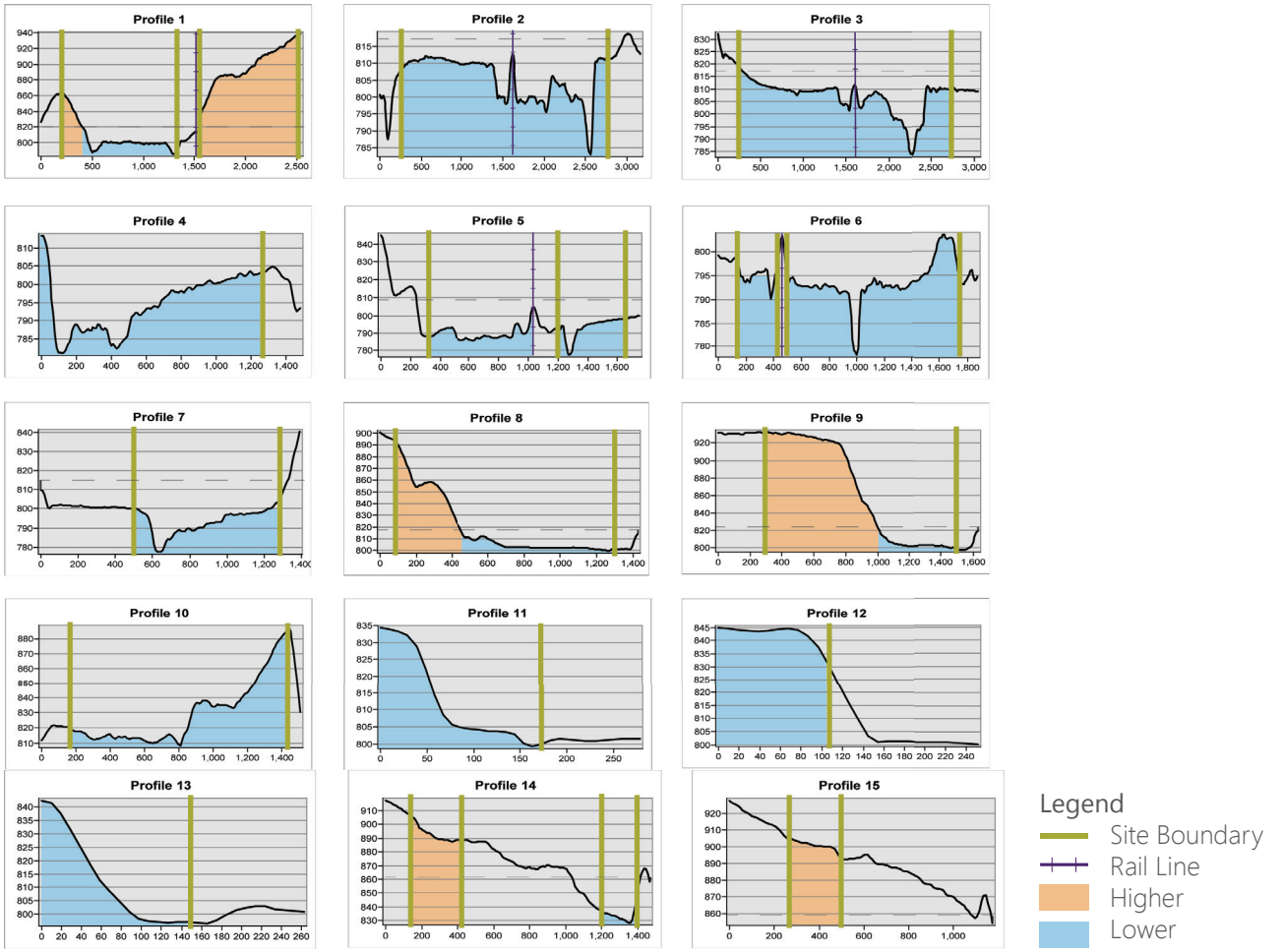


Fig. C.8 Sites 12-19 Profile Graphs: Sites 12-19 are a mix of sites that have topography that is lower and higher than 4' above the rail line.

Profiles: Sites 20-21

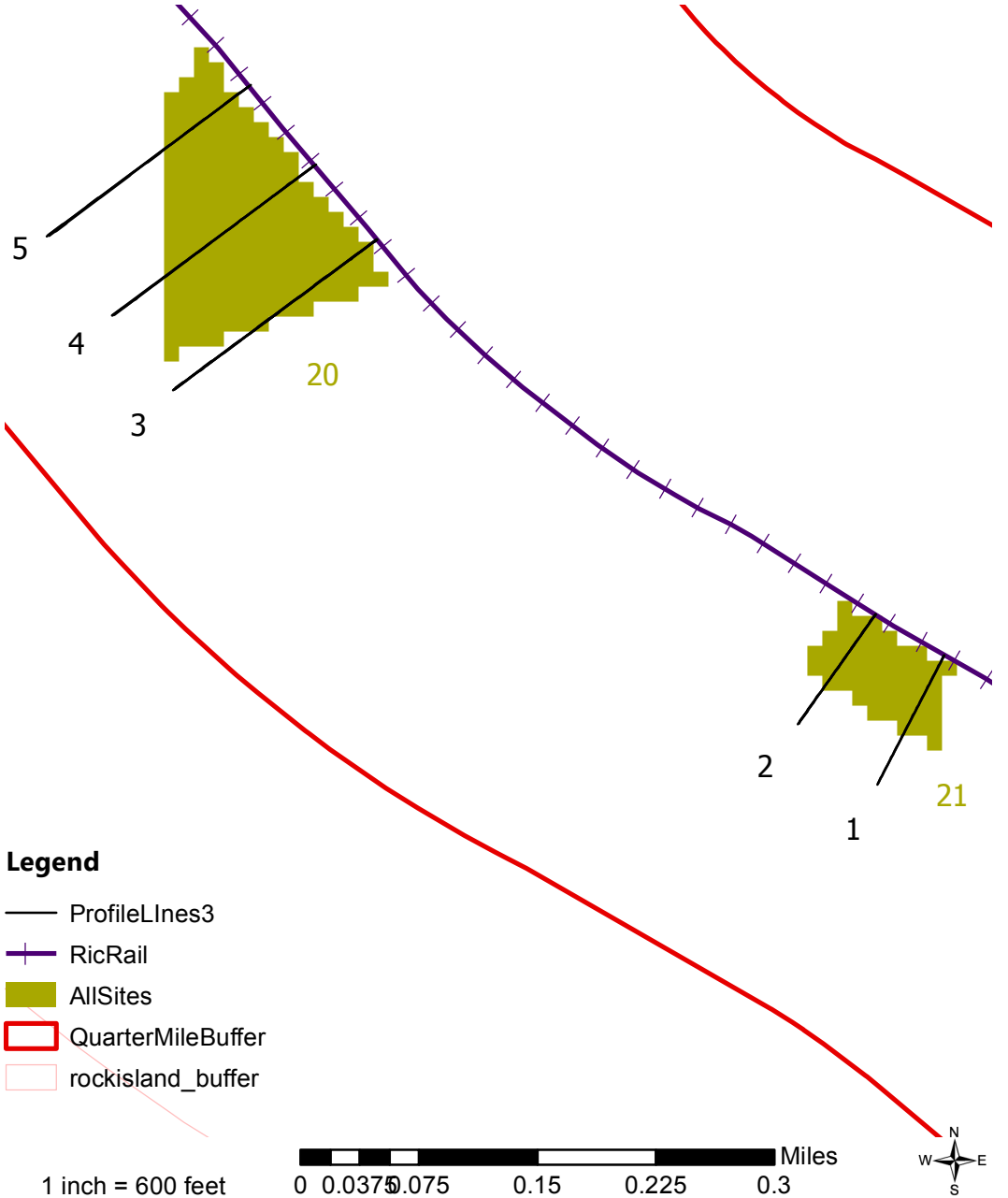


Figure C.9 illustrates the location of the profiles taken through sites 20-21. The graphs in figure C.10 identify which areas of the profile are higher and lower than four feet above the rail.

Fig. C.9 Sites 20-21 Profiles

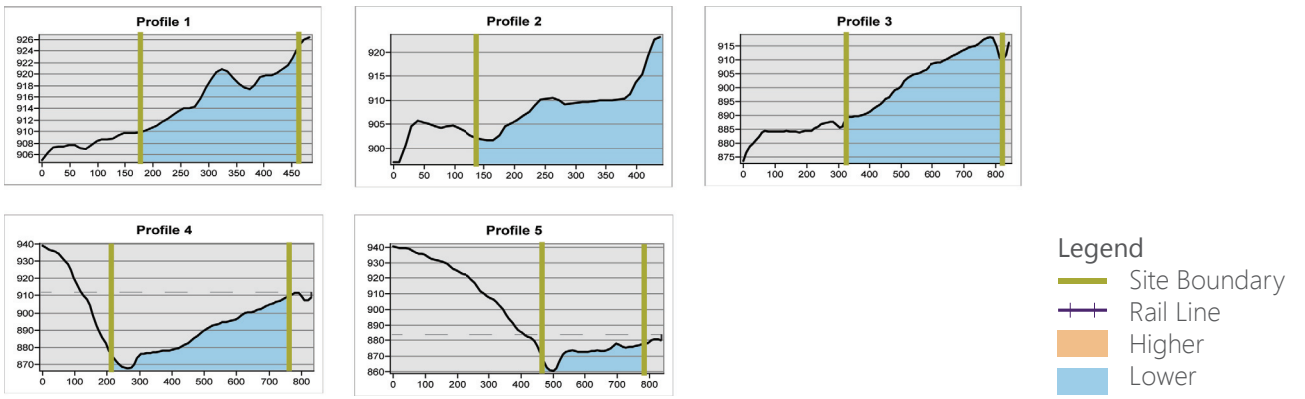


Fig. C.10 Sites 20-21 Profile Graphs: Sites 20-21 are sites that have topography that is lower than 4' above the rail line.

Profiles: Sites 22-24

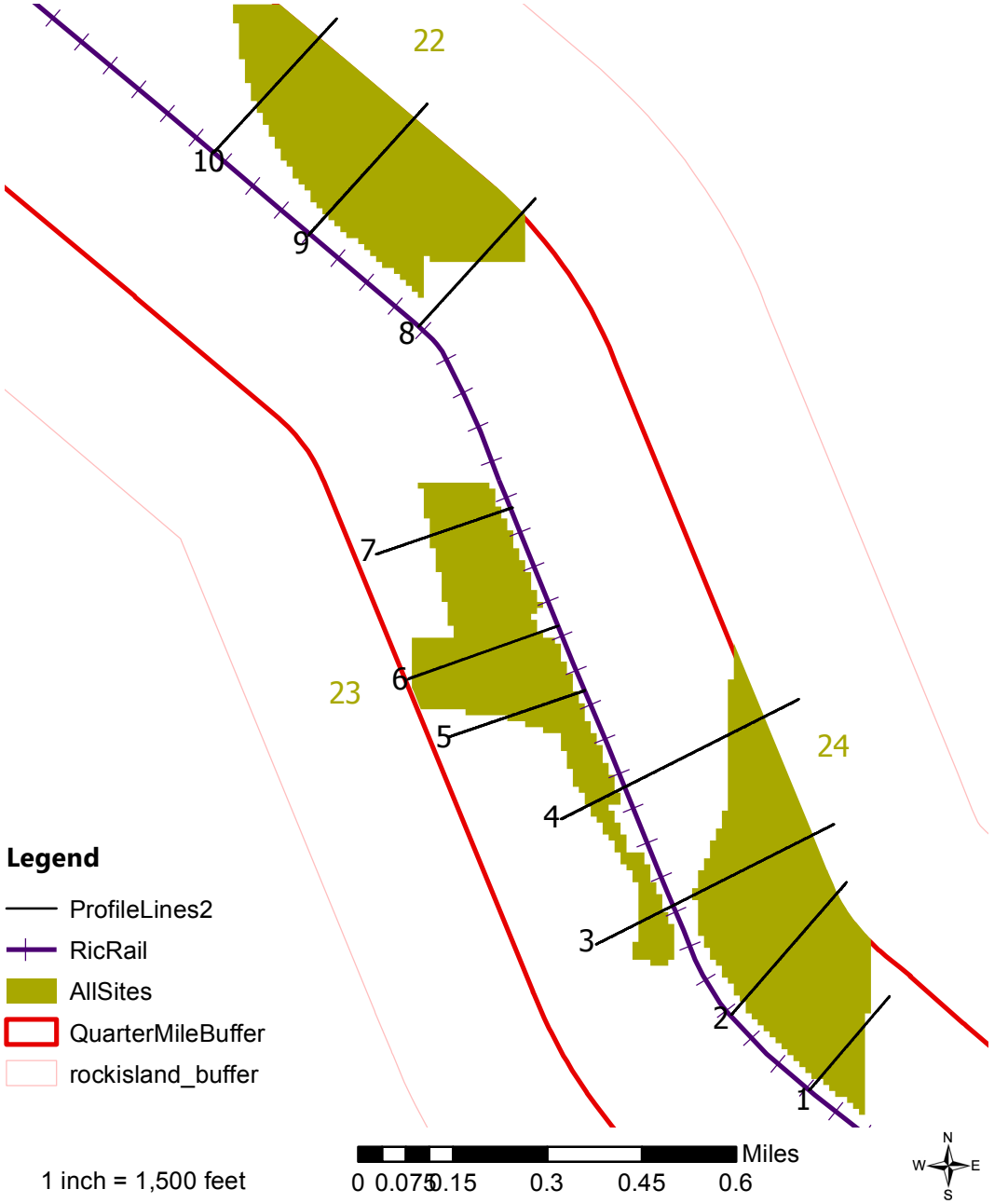


Figure C.11 illustrates the location of the profiles taken through sites 22-24. The graphs in figure C.12 identify which areas of the profile are higher and lower than four feet above the rail.

Fig. C.11 Sites 22-24 Profiles

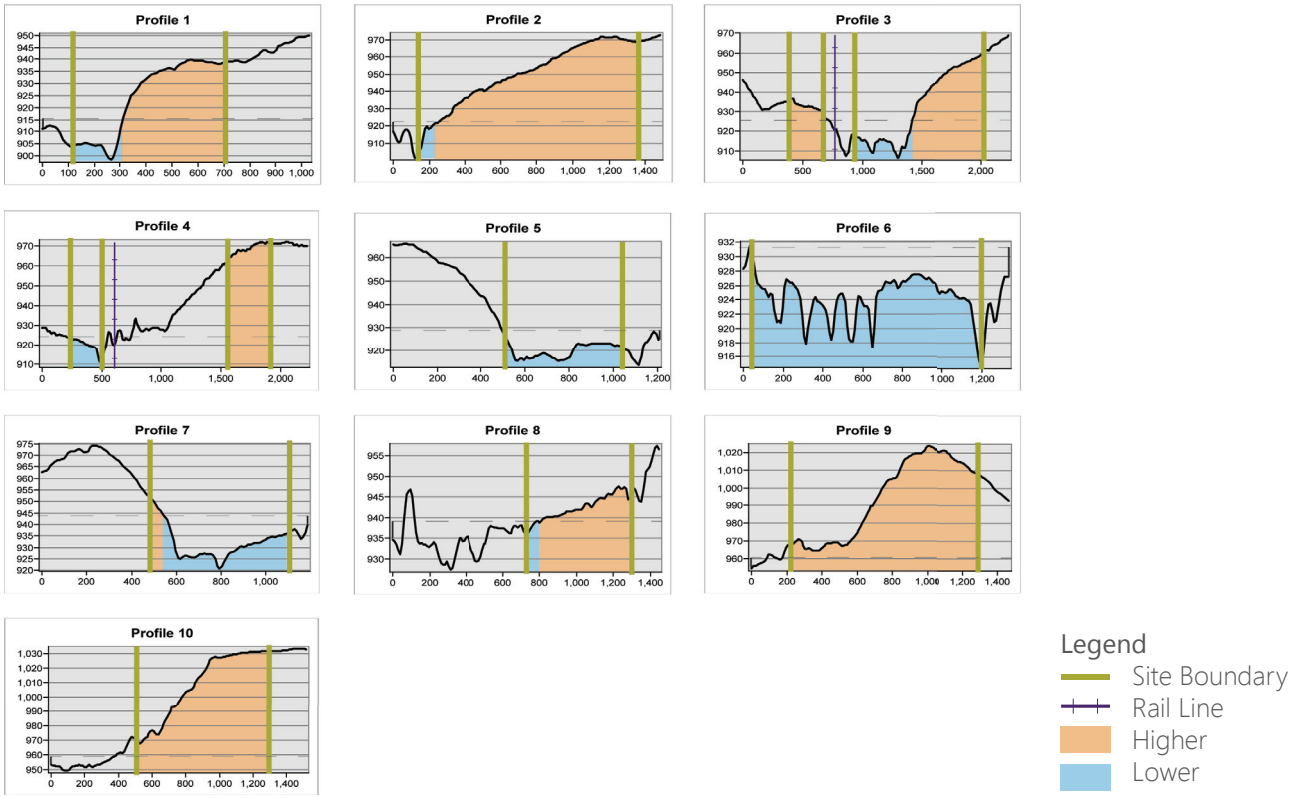


Fig. C.12 Sites 22-24 Profile Graphs: Sites 22-24 are a mix of sites that have topography that is lower and higher than 4' above the rail line.

Profiles: Sites 25-26

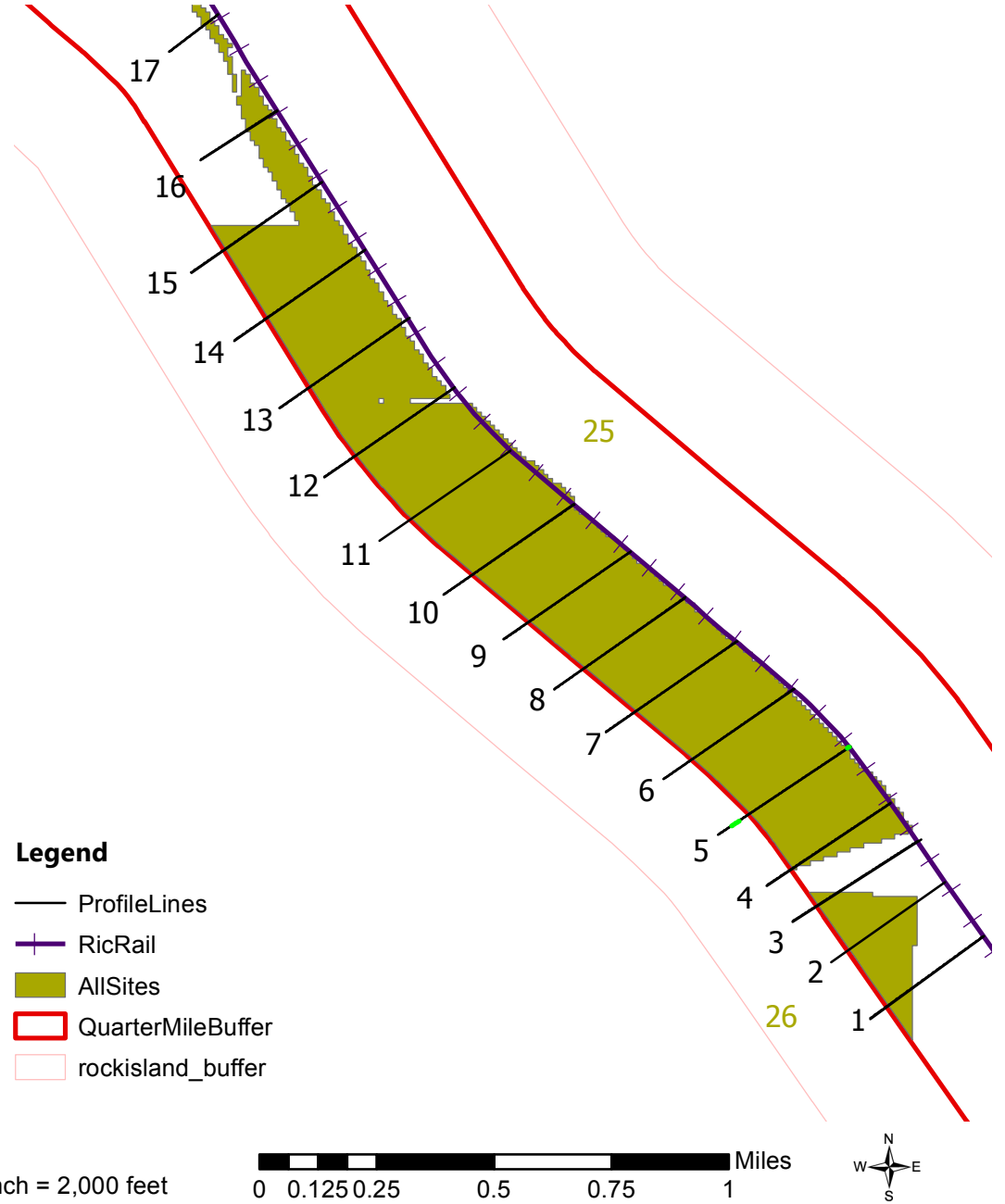


Figure C.13 illustrates the location of the profiles taken through sites 25-26. The graphs in figure C.14 identify which areas of the profile are higher and lower than four feet above the rail.

Fig. C.13 Sites 25-26 Profiles

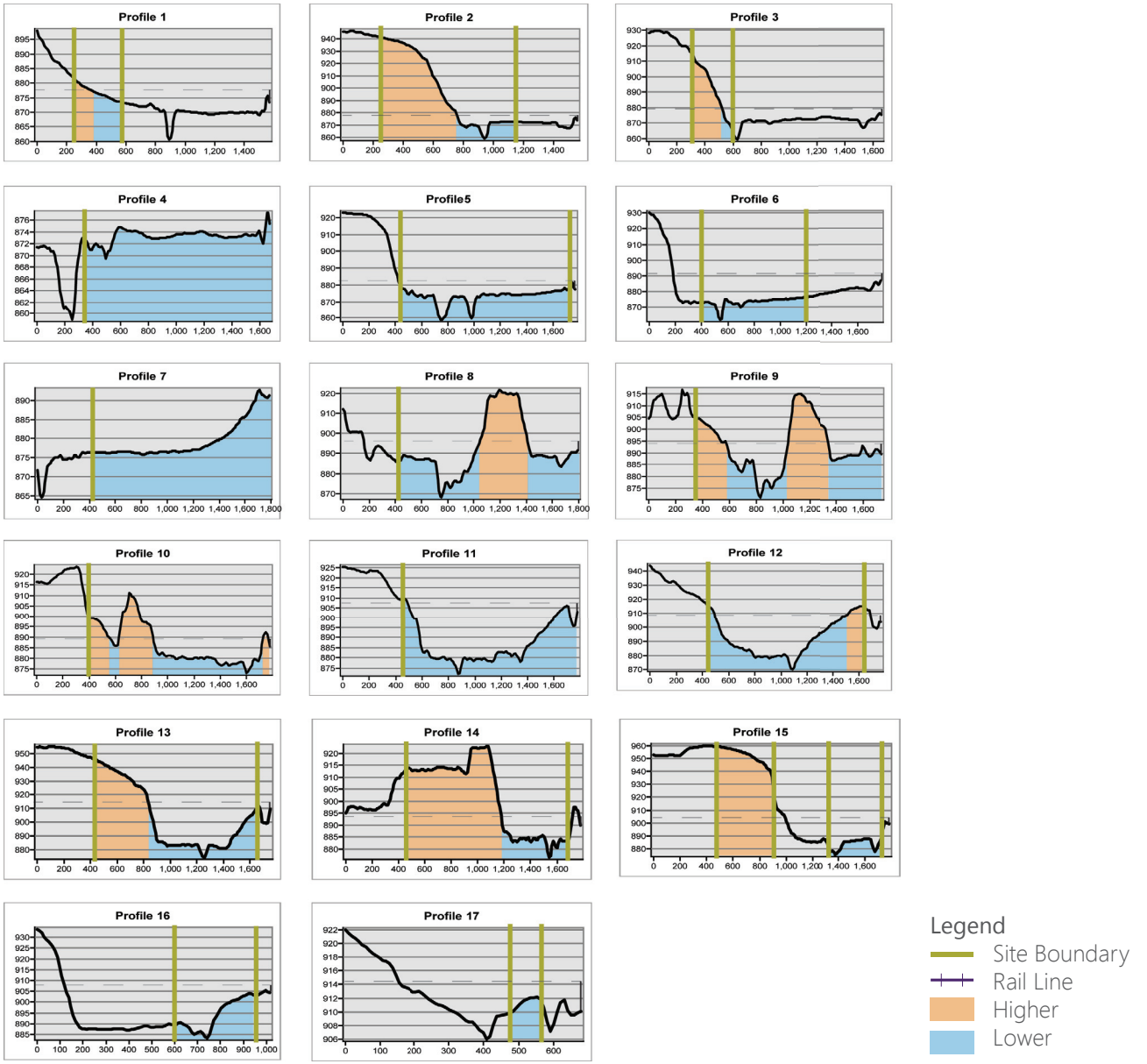


Fig. C.14 Sites 25-26 Profile Graphs: Sites 25-26 are a mix of sites that have topography that is lower and higher than 4' above the rail line.

Profiles: Sites 27-28

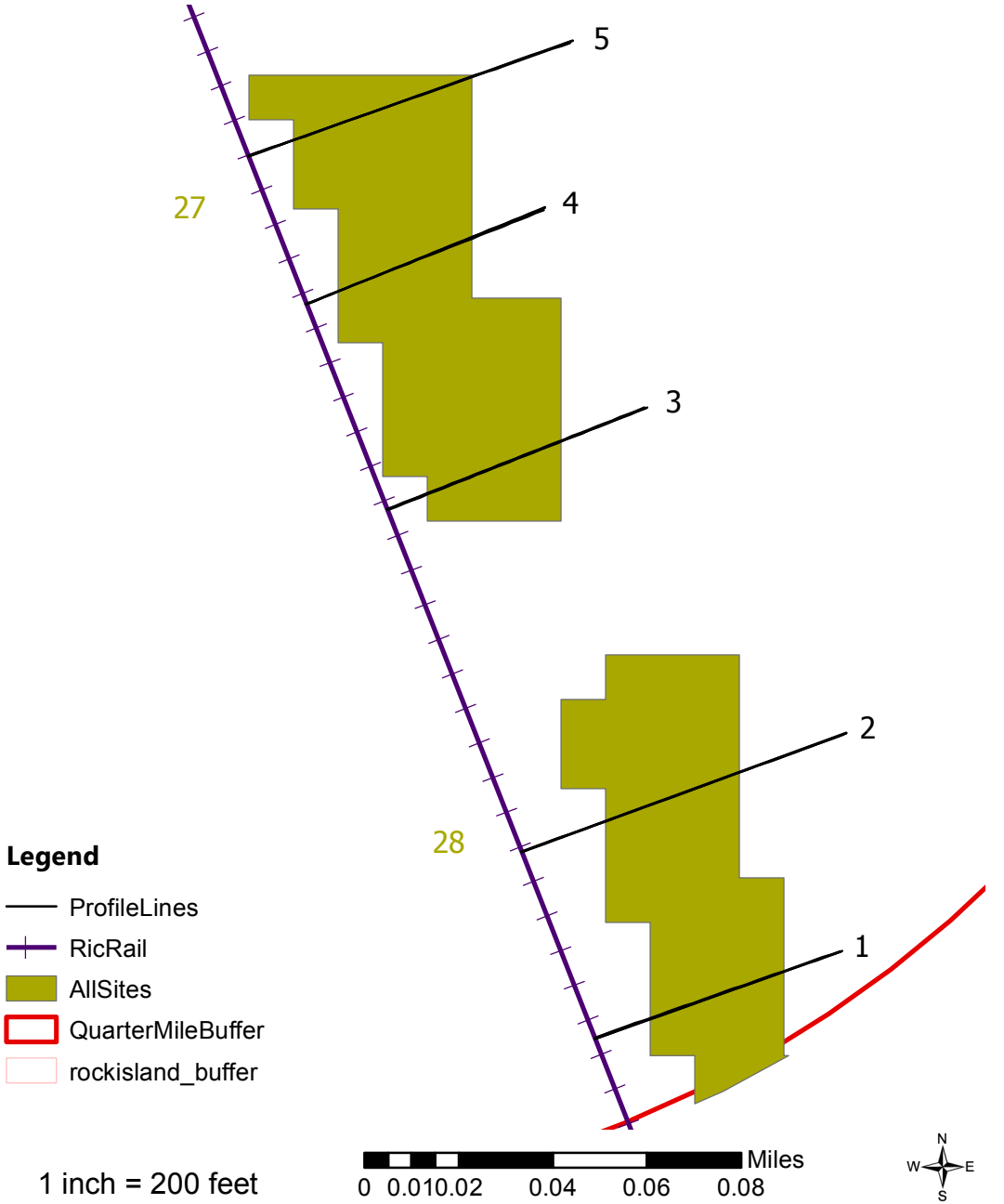


Figure C.15 illustrates the location of the profiles taken through sites 27-28. The graphs in figure C.16 identify which areas of the profile are higher and lower than four feet above the rail.

Fig. C.15 Sites 27-28 Profiles

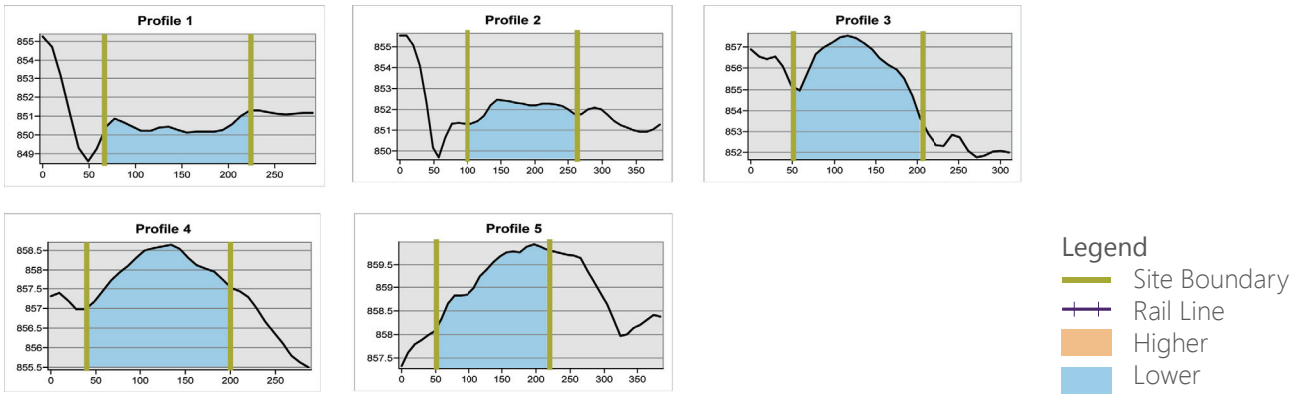
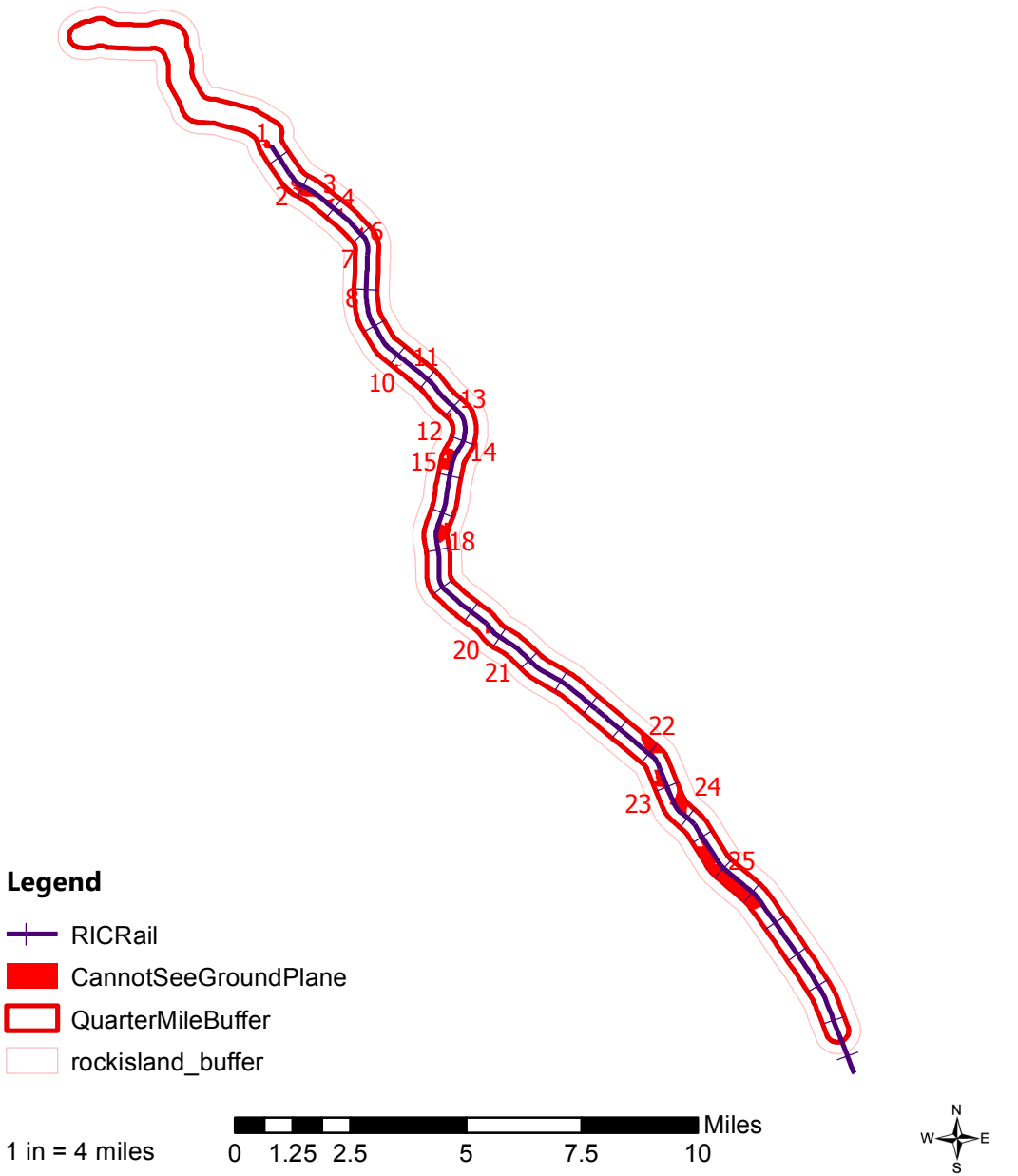


Fig. C.16 Sites 27-28 Profile Graphs: Sites 27-28 are sites that have topography that is lower than 4' above the rail line.

Ground Plane Not Visible From 4’ Above Rail Line



Based on the information gathered through a sight line exploration seen in Figures C.19-C.25, Figure C.17 identifies sites with ground planes that are not visible from four feet above the rail, as four feet is a general marker for where a passenger’s head is at in comparison to the rail line.

Fig. C.17 Ground Plane Not Visible: Sites with topography that cannot be seen from 4’ above the rail line are distributed along the length of the corridor.

Ground Plane Visible From 4’ Above Rail Line

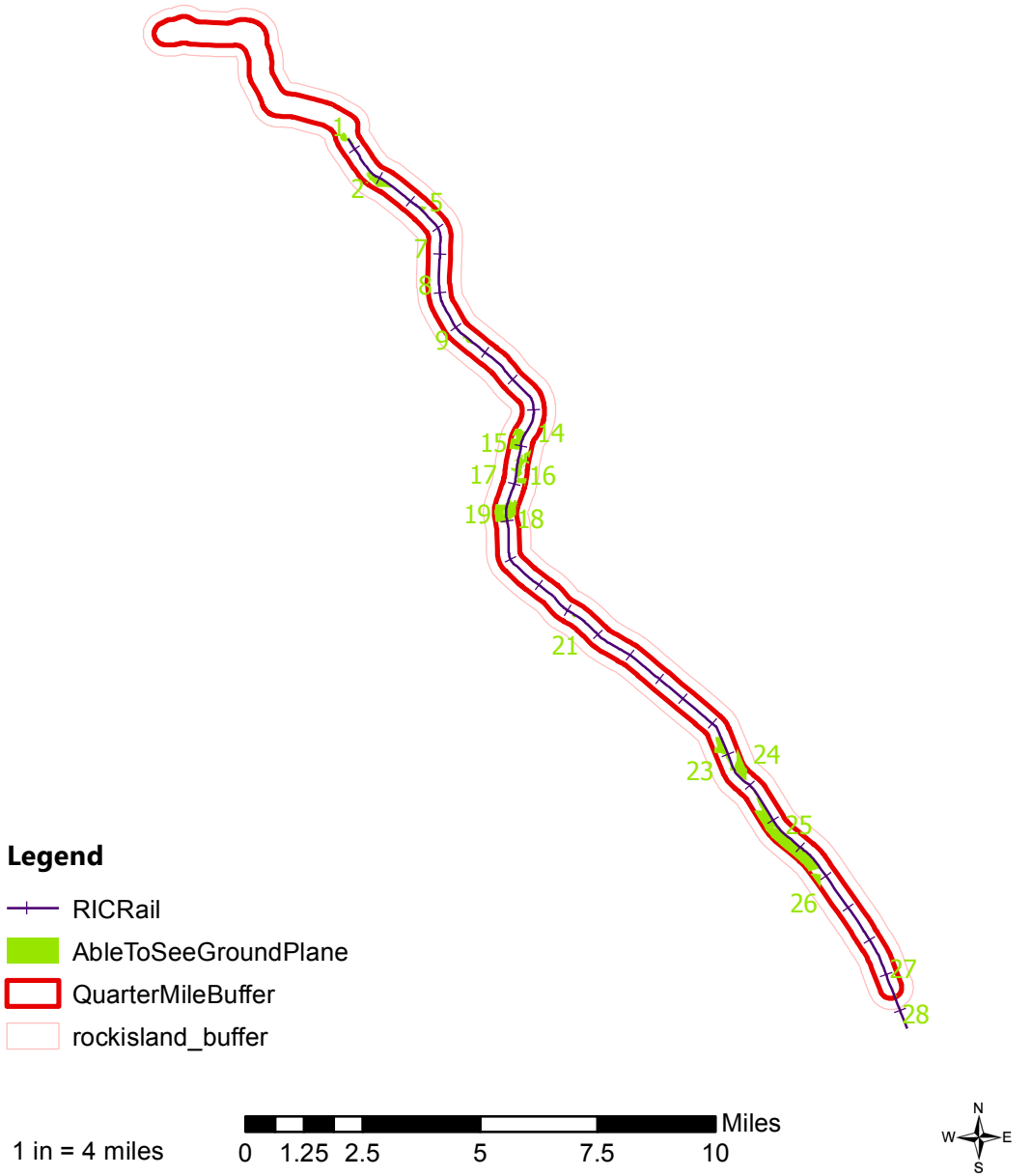
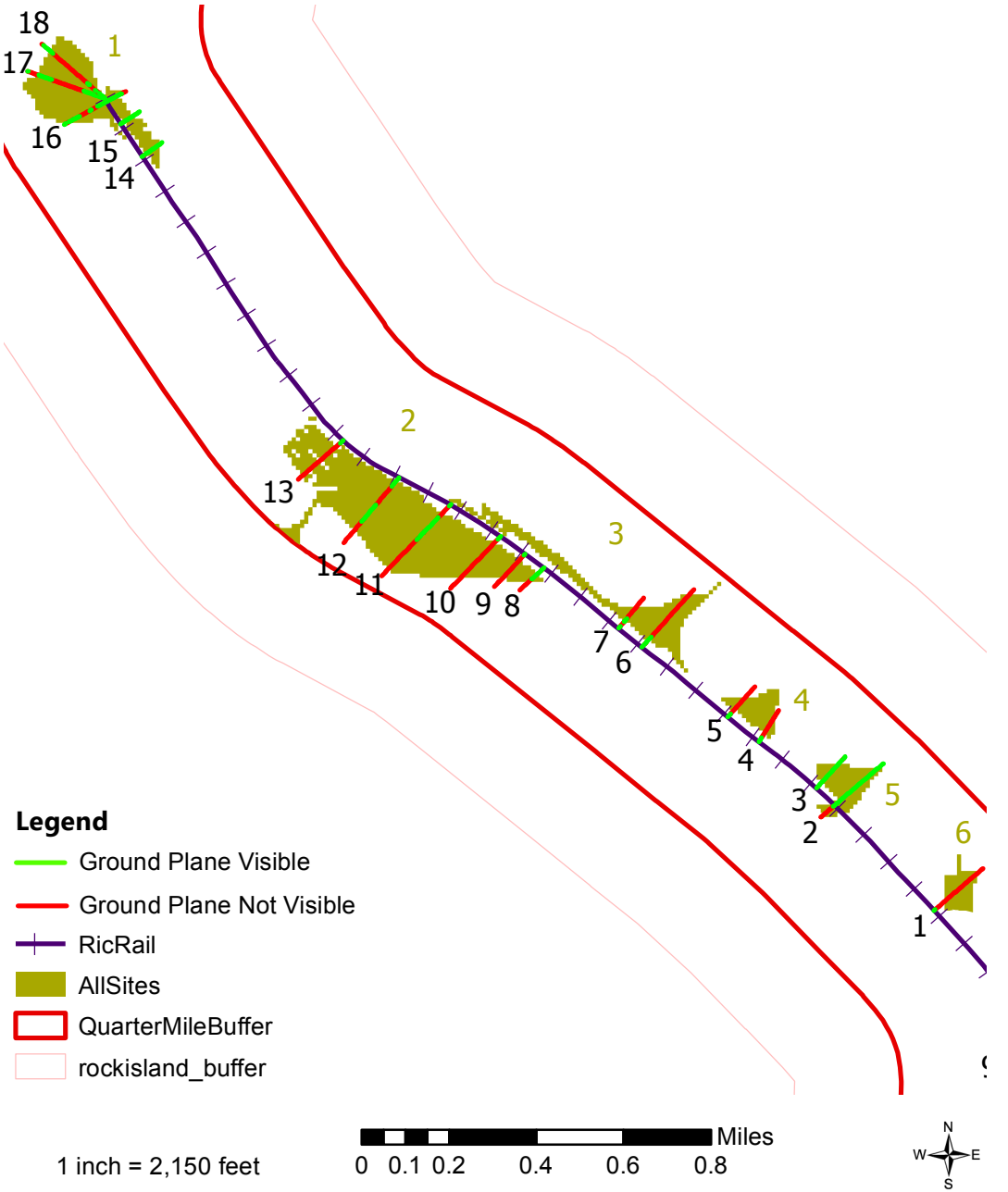


Figure C.18 identifies sites with ground planes that are visible from four feet above the rail.

Fig. C.18 Visible Ground Plane: Sites with topography that can be seen from 4’ above the rail line are distributed along the length of the corridor.

Sight Lines: Sites 1-6



By using the same sample, profile lines used to determine the elevation difference of sites in comparison to the rail, conducting a sight line exploration identifies areas of the site that are visible from the rail line as well as those areas that are not visible. Figure C.19 identifies which areas of sites 1-6 a passenger can and cannot see while riding the rail.

Fig. C.19 Sites 1-6 Sight Lines: Sites 1-6 are a mix of sites that have topography that can and cannot be seen from 4' above the rail line.

Sight Lines: Sites 7-11

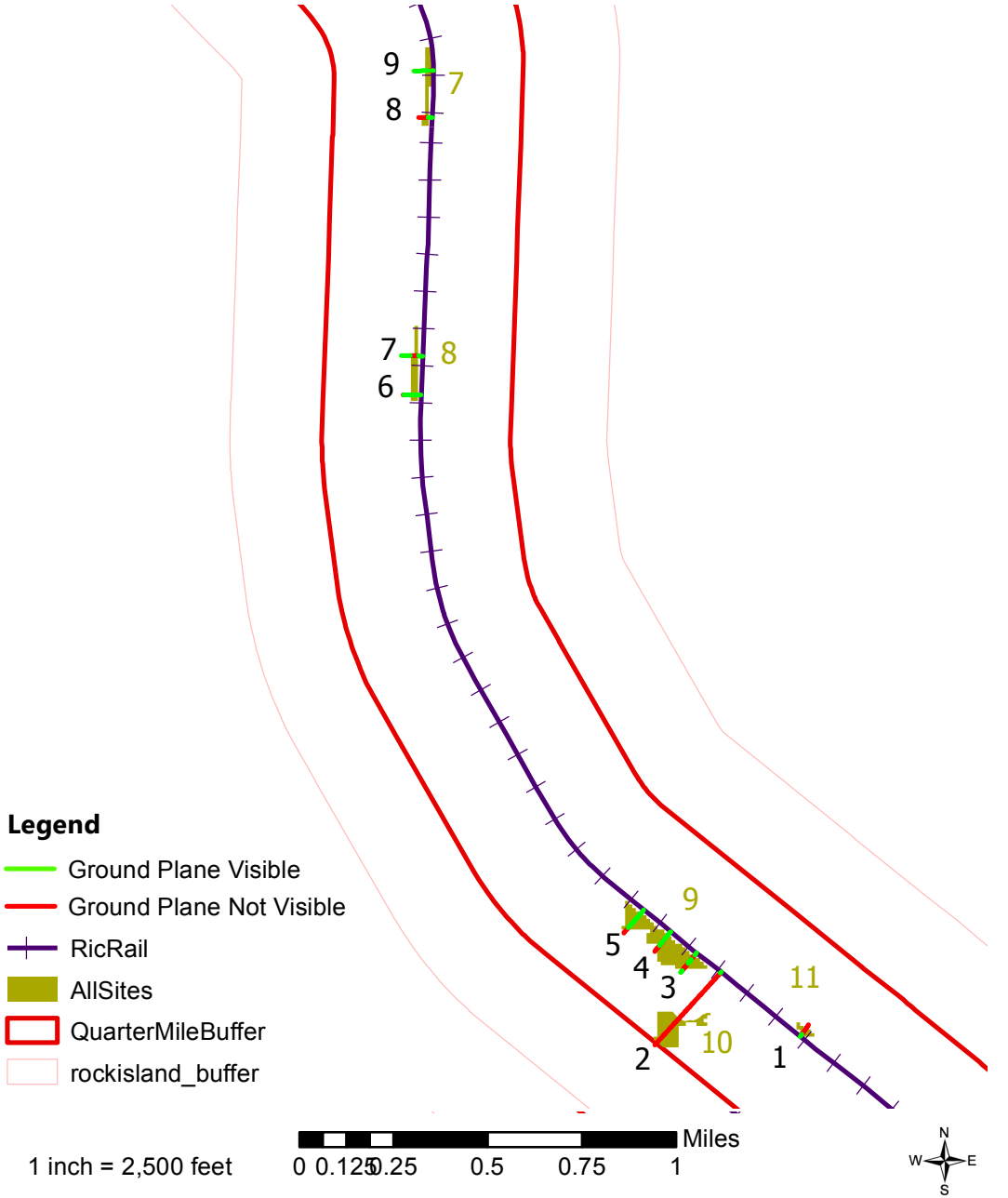


Figure C.20 identifies which areas of sites 7-11 a passenger can and cannot see while riding the rail.

Fig. C.20 Sites 7-11 Sight Lines: Sites 7-11 are a mix of sites that have topography that can and cannot be seen from 4' above the rail line.

Sight Lines: Sites 12-19

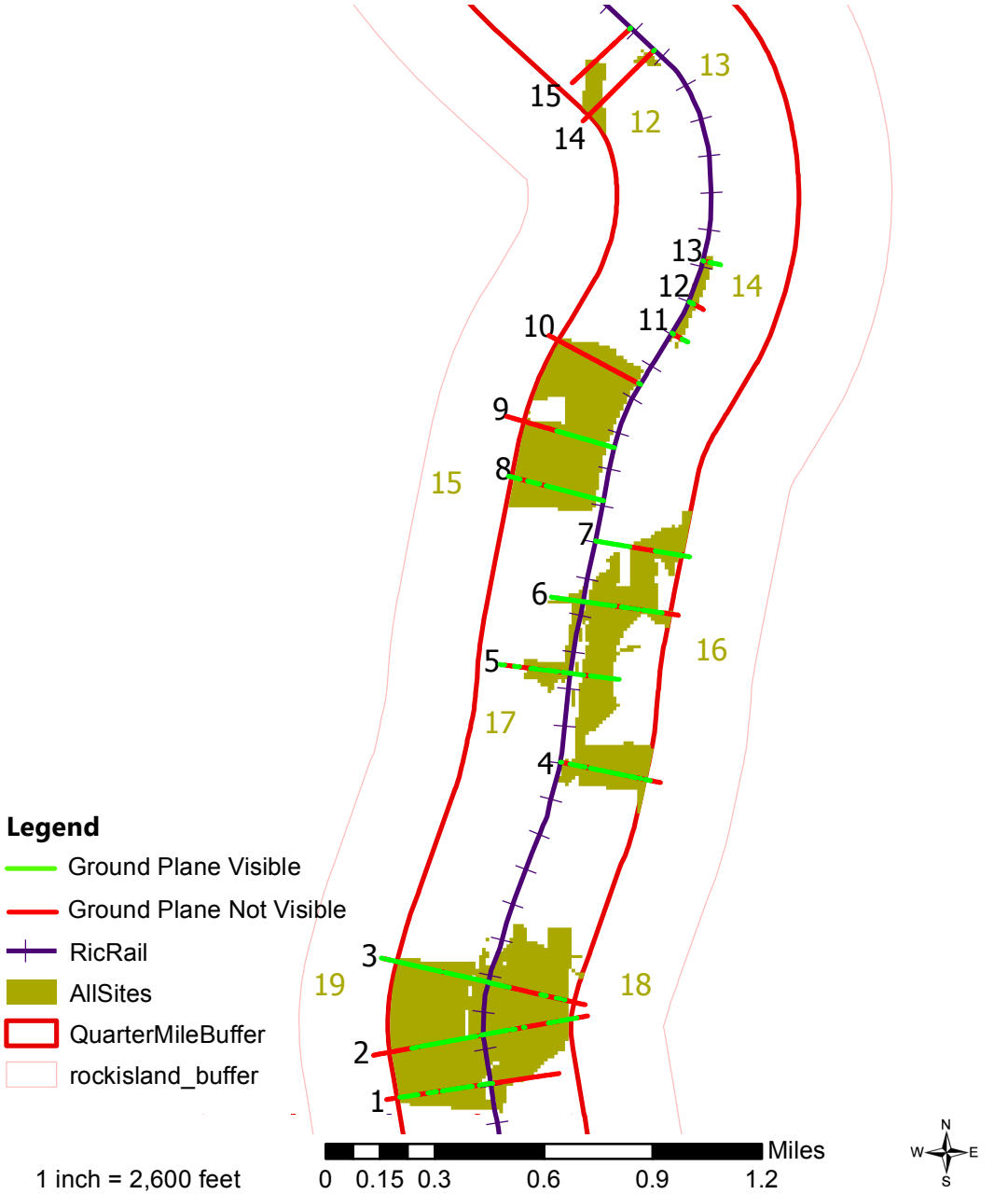


Figure C.21 identifies which areas of sites 12-19 a passenger can and cannot see while riding the rail.

Fig. C.21 Sites 12-19 Sight Lines: Sites 12-19 are a mix of sites that have topography that can and cannot be seen from 4' above the rail line. Most of the topography is visible from the rail line.

Sight Lines: Sites 20-21

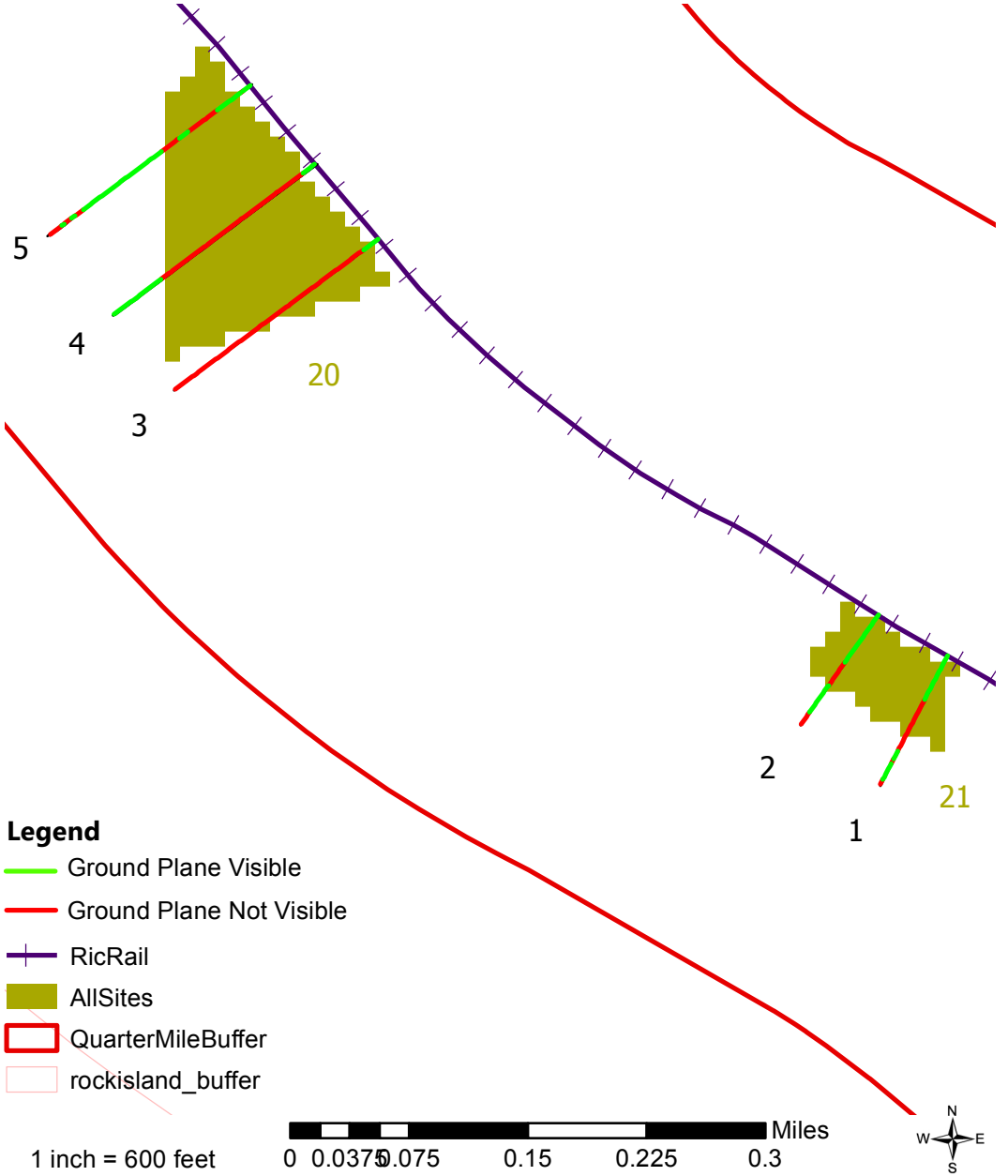


Figure C.22 identifies which areas of sites 20-21 a passenger can and cannot see while riding the rail.

Fig. C.22 Sites 20-21 Sight Lines: Sites 20-21 are two sites that have topography that can and cannot be seen from 4' above the rail line.

Sight Lines: Sites 22-24

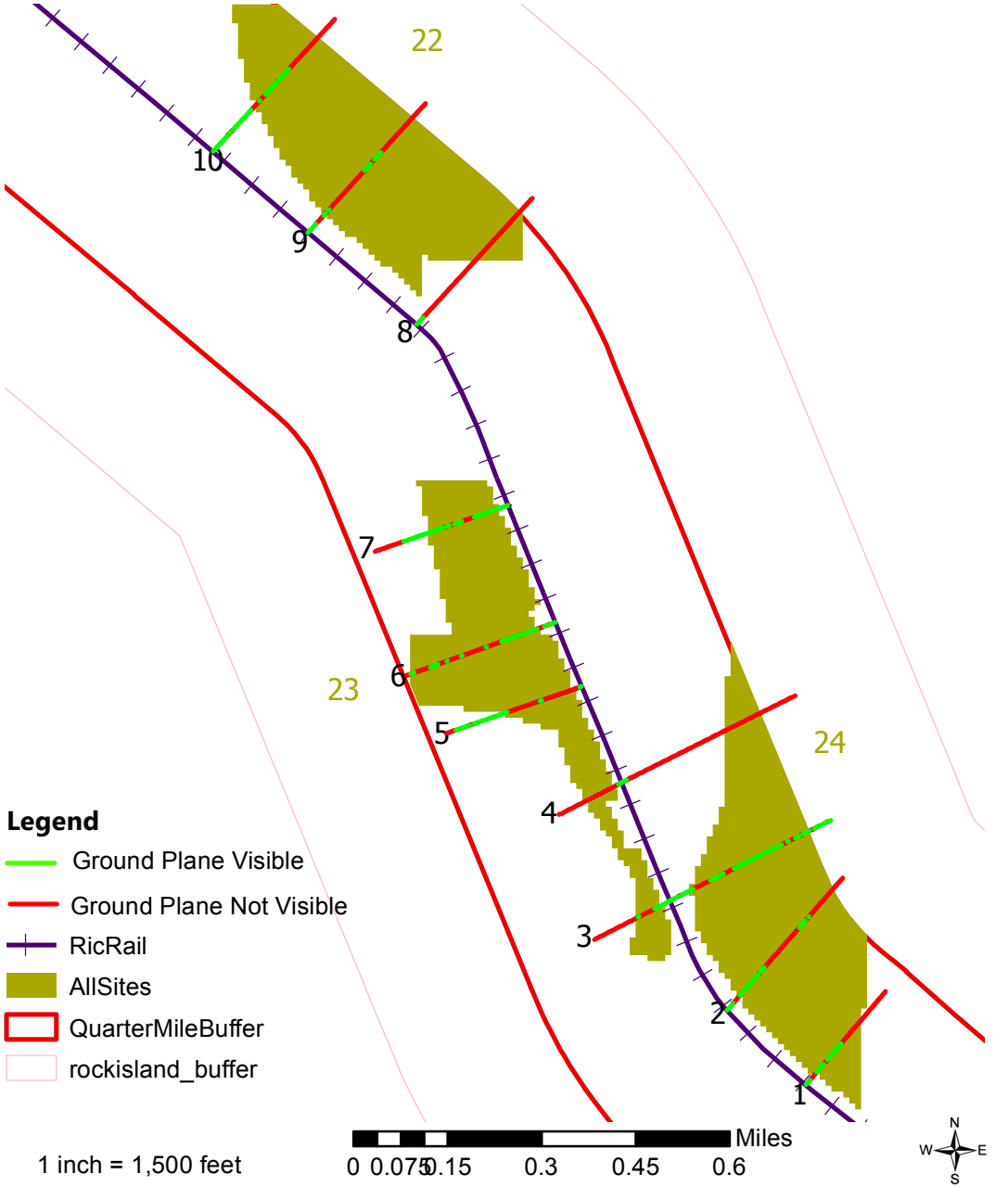


Figure C.23 identifies which areas of sites 22-24 a passenger can and cannot see while riding the rail.

Fig. C.23 Sites 22-24 Sight Lines: Sites 22-24 are a mix of sites that have topography that can and cannot be seen from 4' above the rail line.

Sight Lines: Sites 25-26

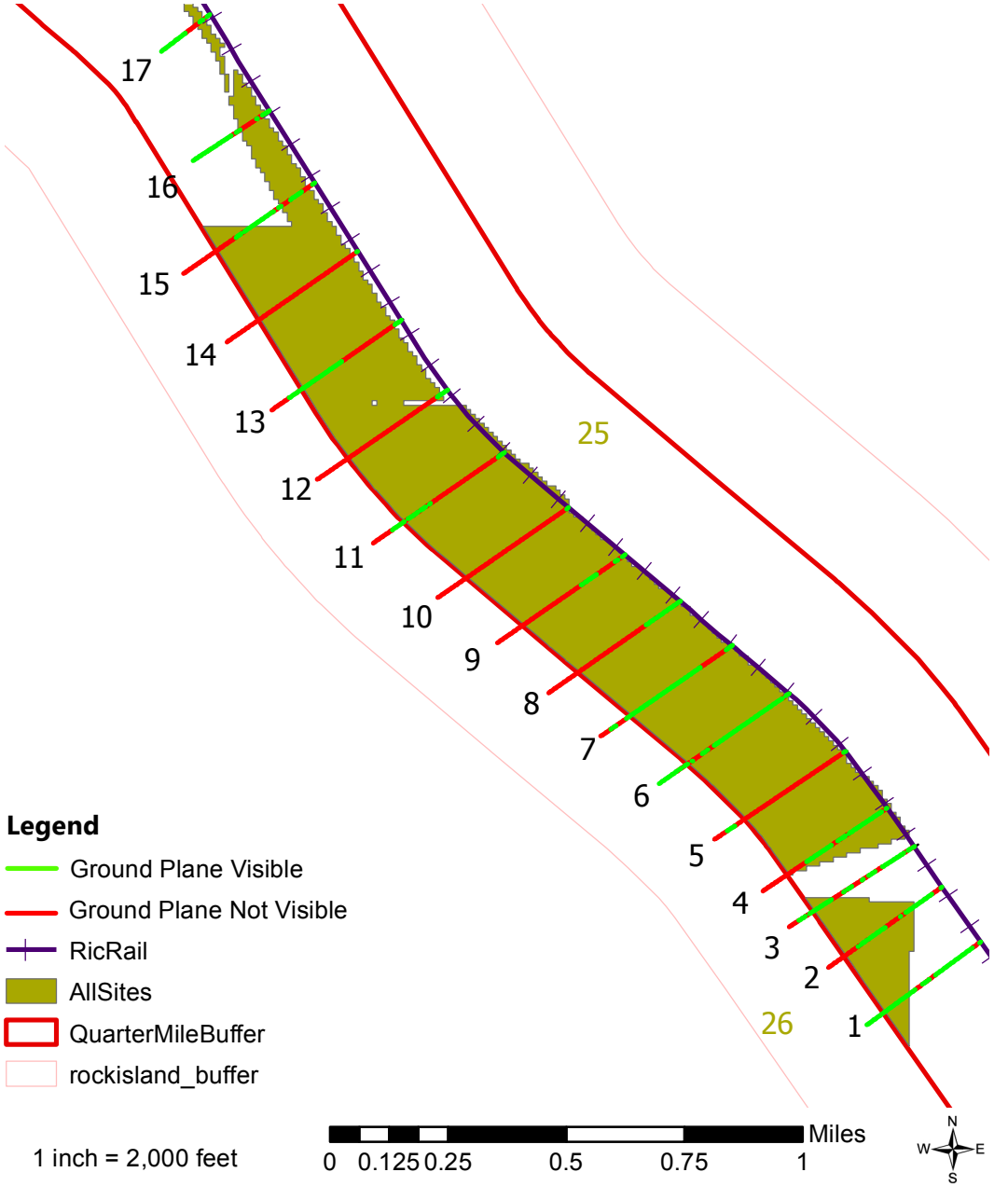


Figure C.24 identifies which areas of sites 25-26 a passenger can and cannot see while riding the rail.

Fig. C.24 Sites 25-26 Sight Lines: Sites 25-26 are two sites that have topography that can and cannot be seen from 4' above the rail line. A majority of the topography of site 25 cannot be seen from the rail line.

Sight Lines: Sites 27-28

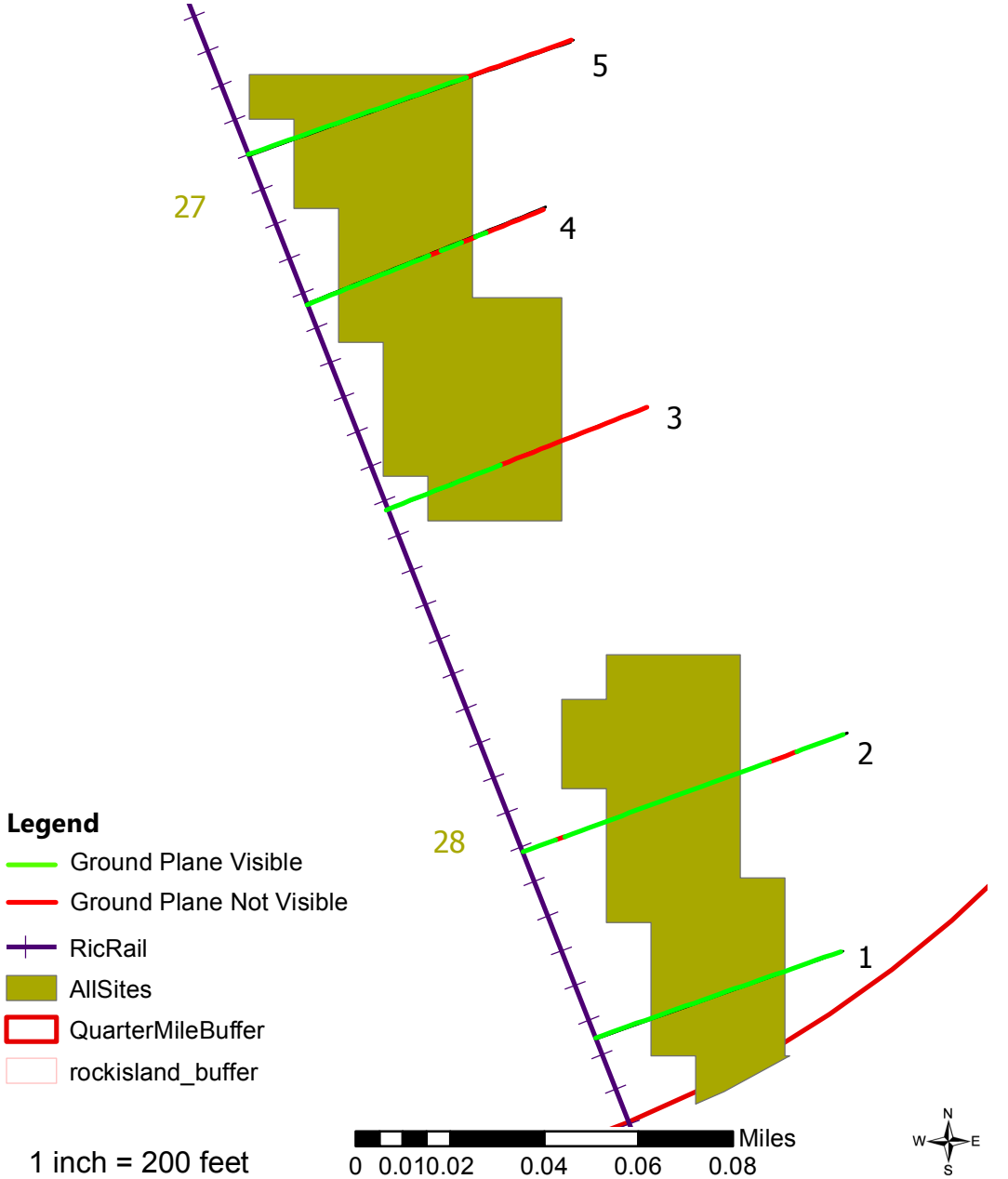


Figure C.25 identifies which areas of sites 27-28 a passenger can and cannot see while riding the rail.

Fig. C.25 Sites 27-28 Sight Lines: Sites 27-28 are two sites that have topography that can mostly be seen from 4' above the rail line.

Adjacent Sites

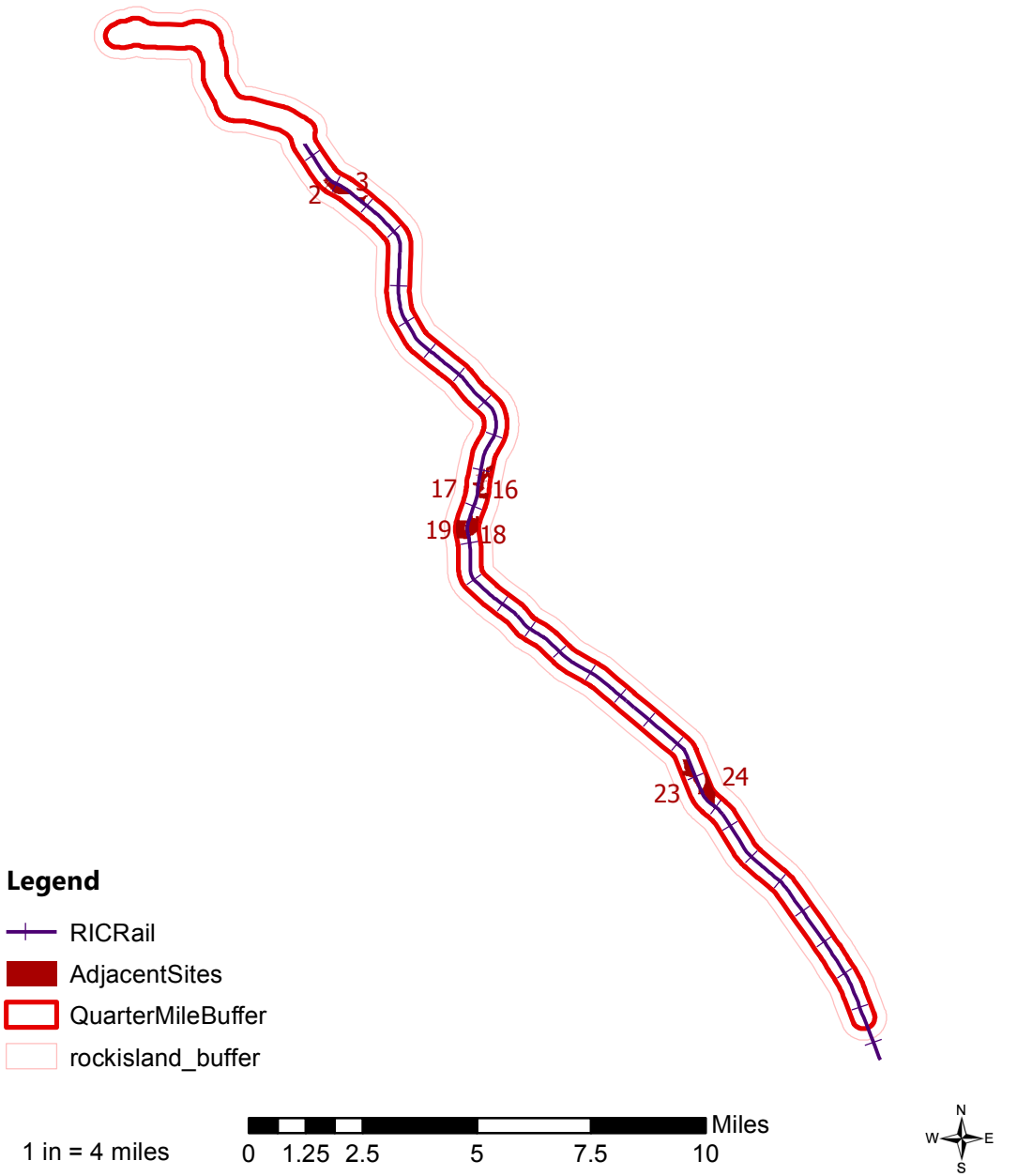


Figure C.26 identifies the sites along the RIC that are adjacent to each other across the rail line.

Fig. C.26 Adjacent Sites: There are four sets of adjacent sites distrubuted evenly along the corridor.

Sites Within 75’ of Rail

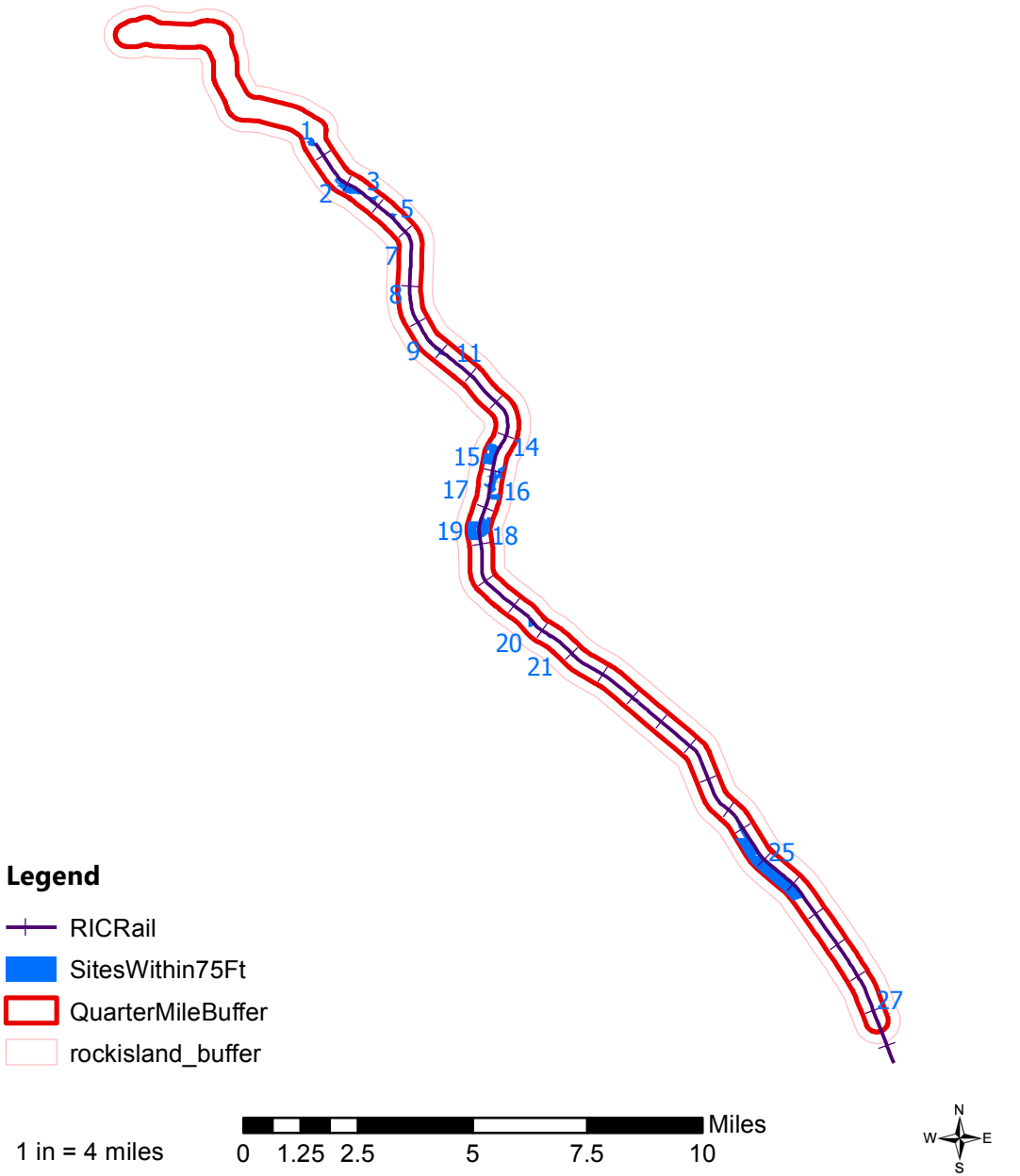


Figure C.27 identifies sites that are within 75’ of the rail line.

Fig. C.27 Sites Within 75’ of Rail Line: A majority of sites within 75’ of the rail line are found in the northern half of the corridor.

Sites With Considerable Amounts of Forest

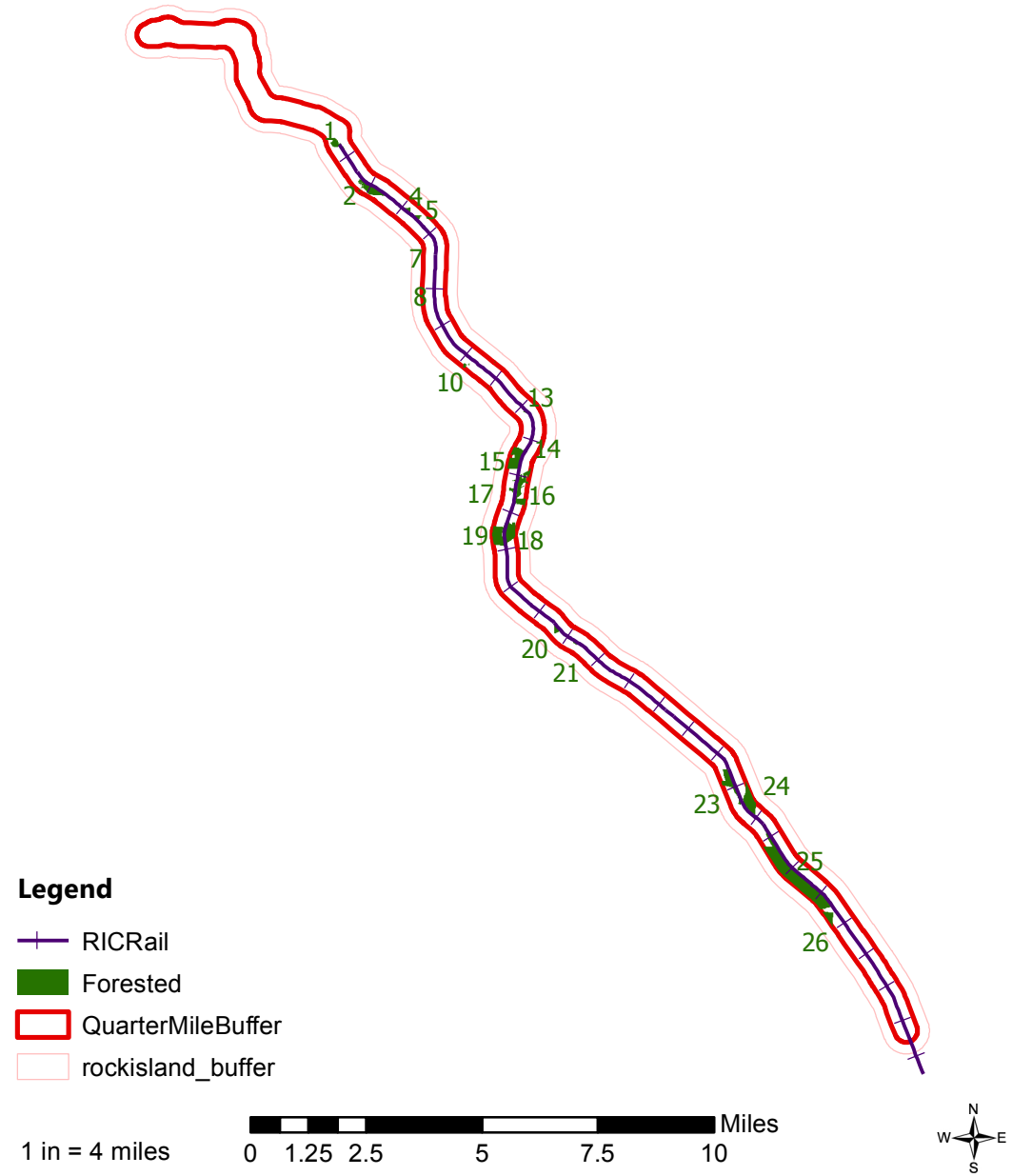


Figure C.28 identifies sites that have a considerable amount of forest.

Fig. C.28 Considerable Forest: Sites with a considerable amount of forest are found along the entire length of the corridor.

Sites With Considerably Less Forest

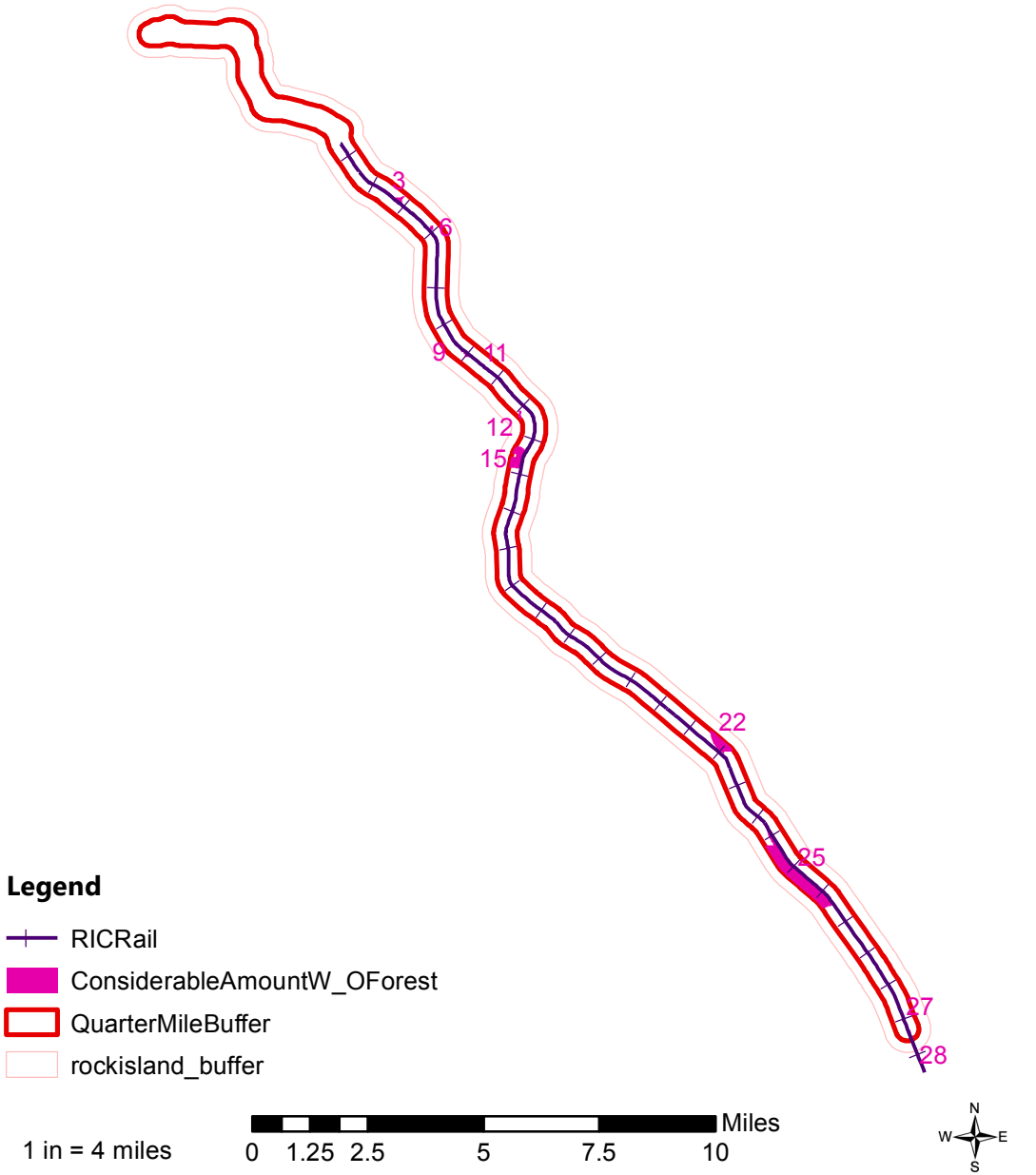


Figure C.29 identifies sites that have considerably less forest. However, many of these sites also have a considerable amount of forest.

Fig. C.29 Considerably Less Forest: Less than half of the sites have considerably less forest.

MetroGreen Intersections

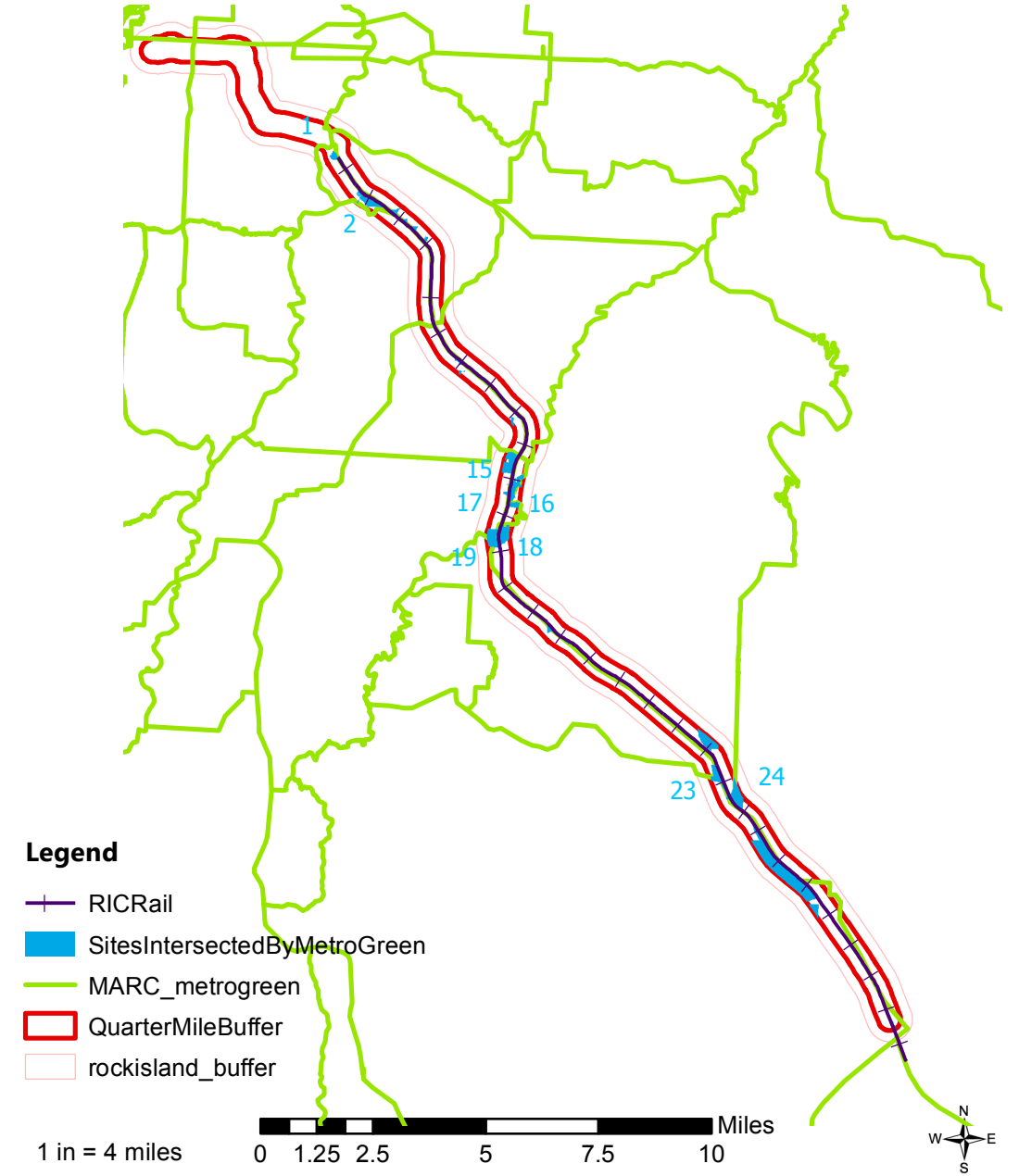


Figure C.30 identifies sites that intersect with MetroGreen trails that run perpendicular from the rail.

Fig. C.30 MetroGreen Intersects: MetroGreen intersects sites in clusters along the corridor.

Visible, Clustered, South Facing Slopes

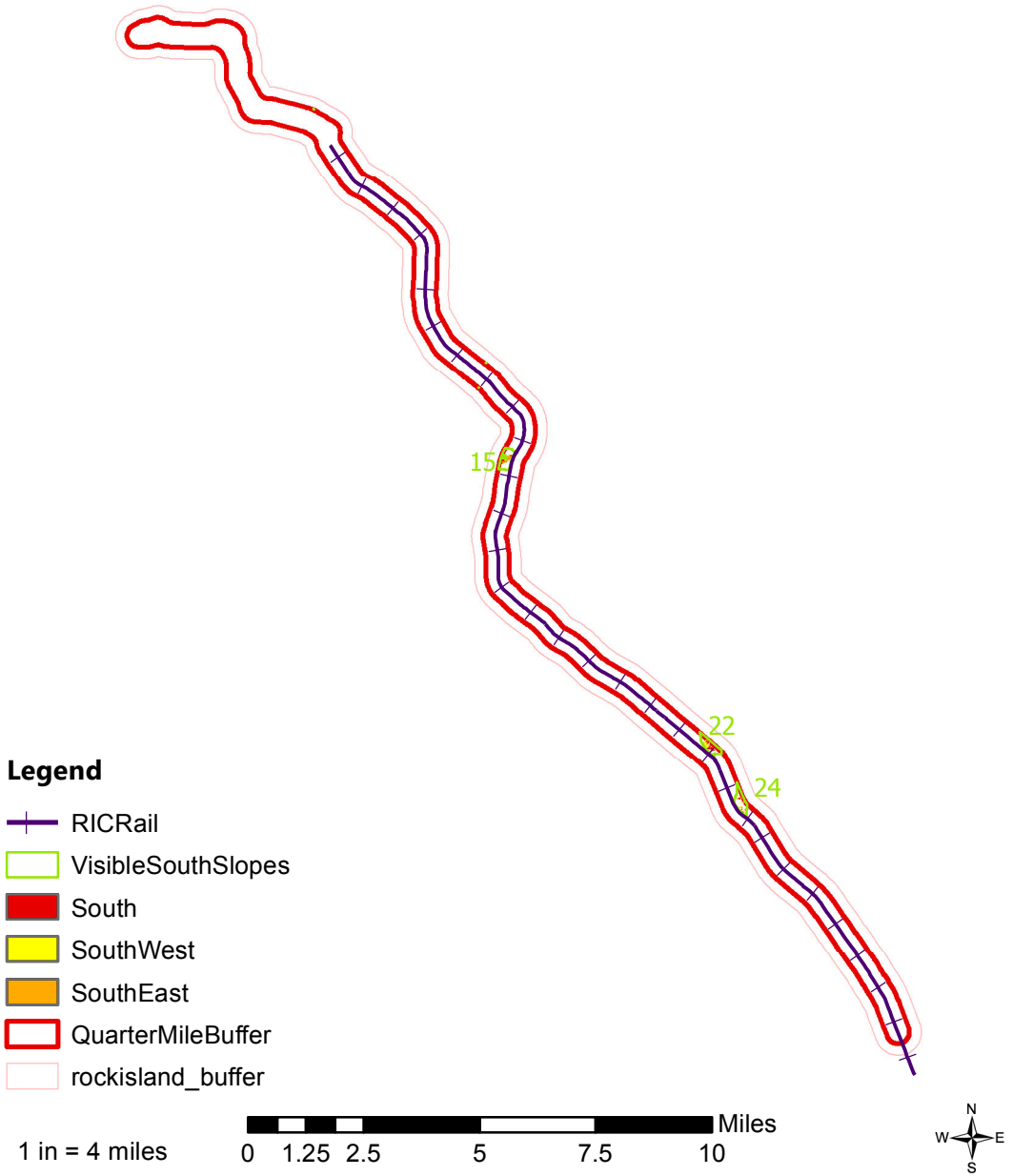


Figure C.31 identifies sites that have clustered, south facing slopes that are visible from the rail line.

Fig. C.31 South Facing Slopes: Only a small portion of sites consist of visible, clustered, south facing slopes.

Vertical

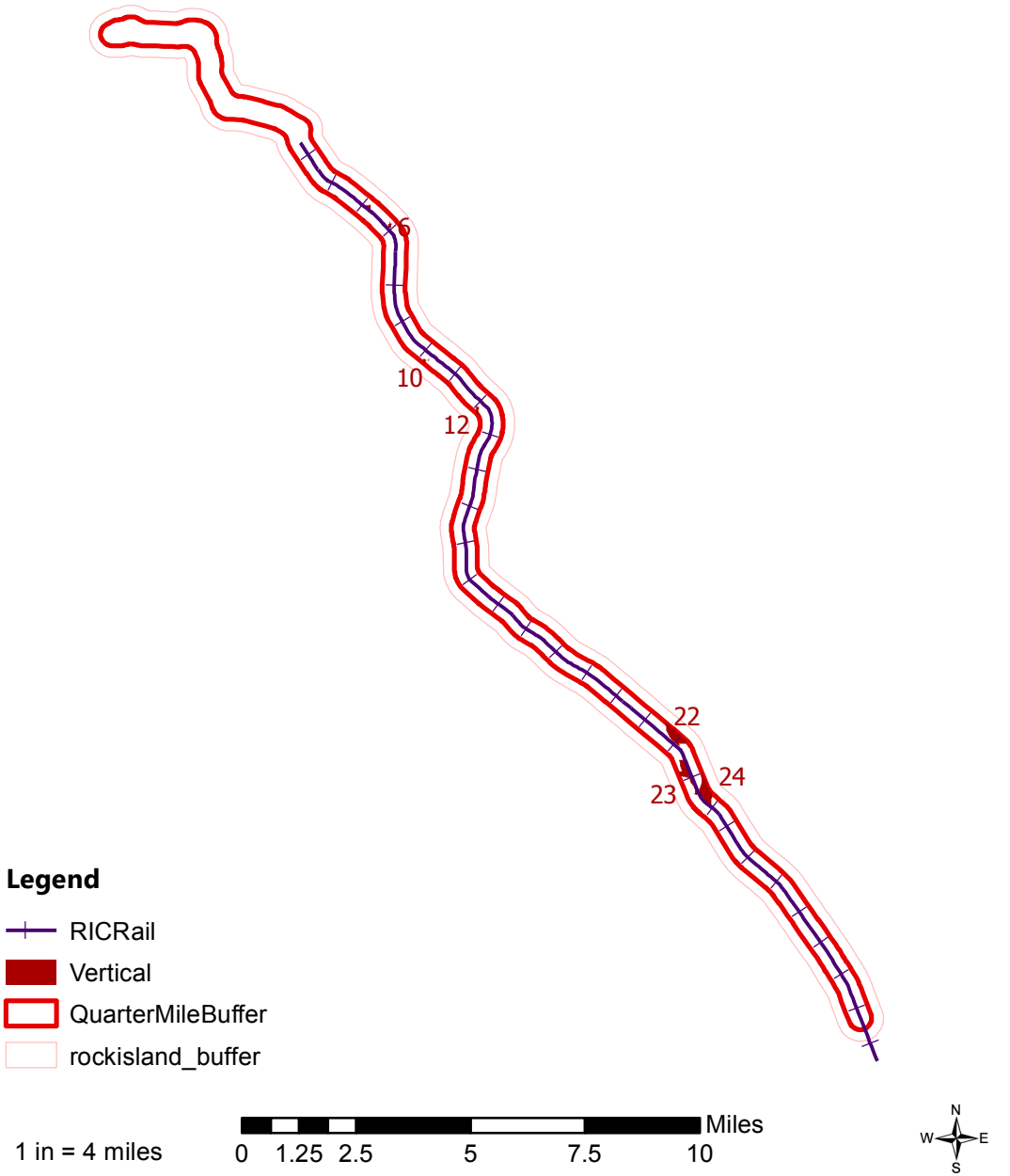


Figure C.32 identifies sites that are both higher in elevation than four feet above the rail and have ground planes that are not visible from the rail, but are not within seventy-five feet of the rail. The lack of visibility and distance from the rail requires vertical design elements to allow for visibility.

Fig. C.32 Vertical: Only a few sites along the corridor require vertical installations.

Flat

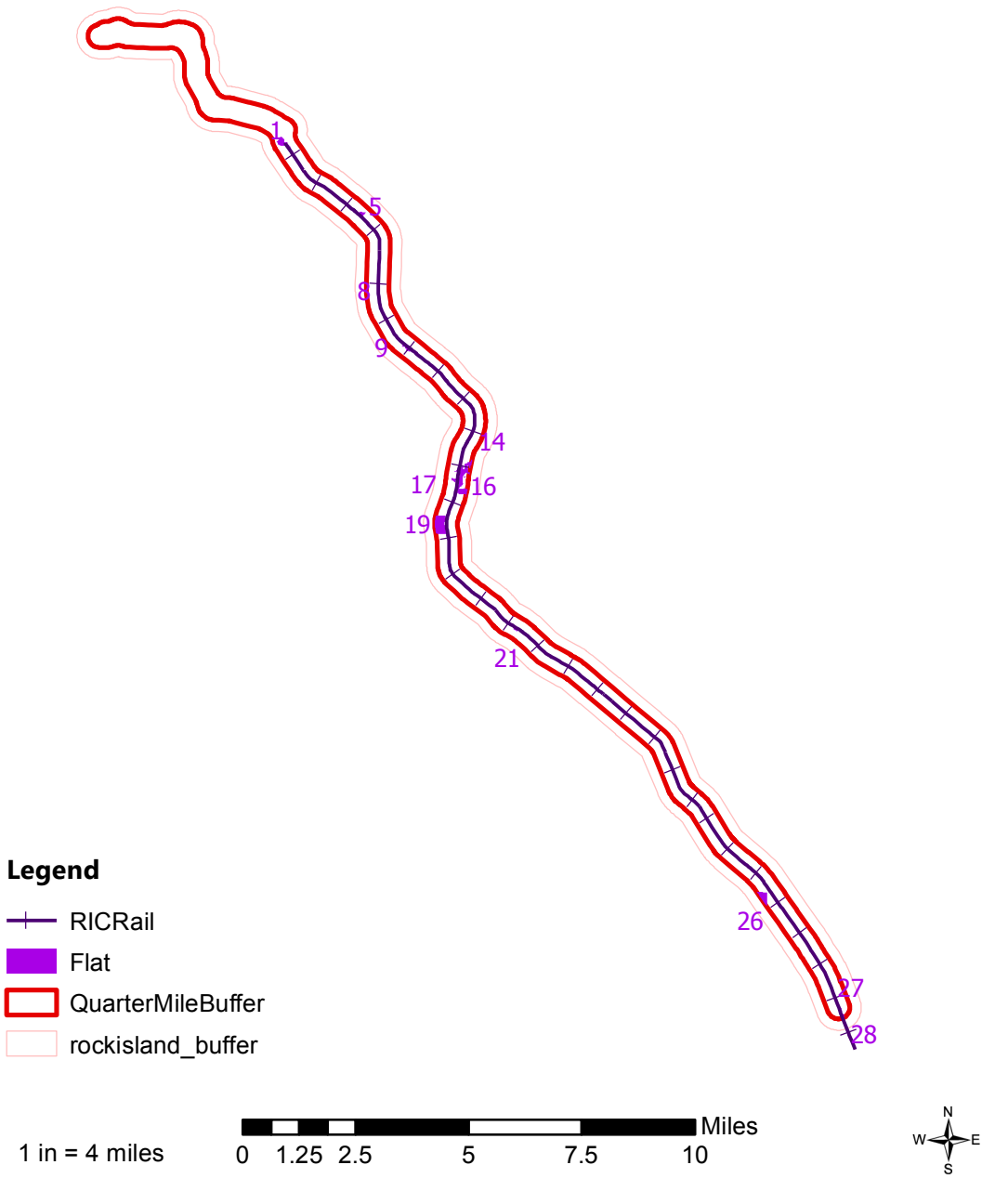


Figure C.33 identifies sites that are both lower in elevation than four feet above the rail and have visible ground planes from the rail, but are not higher in elevation than four feet above the rail in combination with ground planes not visible from the rail. The visibility of ground planes at a lower elevation allow for rather flat installations that cannot be utilised with other conditions.

Fig. C.33 Flat: Sites in the northern portion of the corridor are more suitable for flat installations.

Patterns

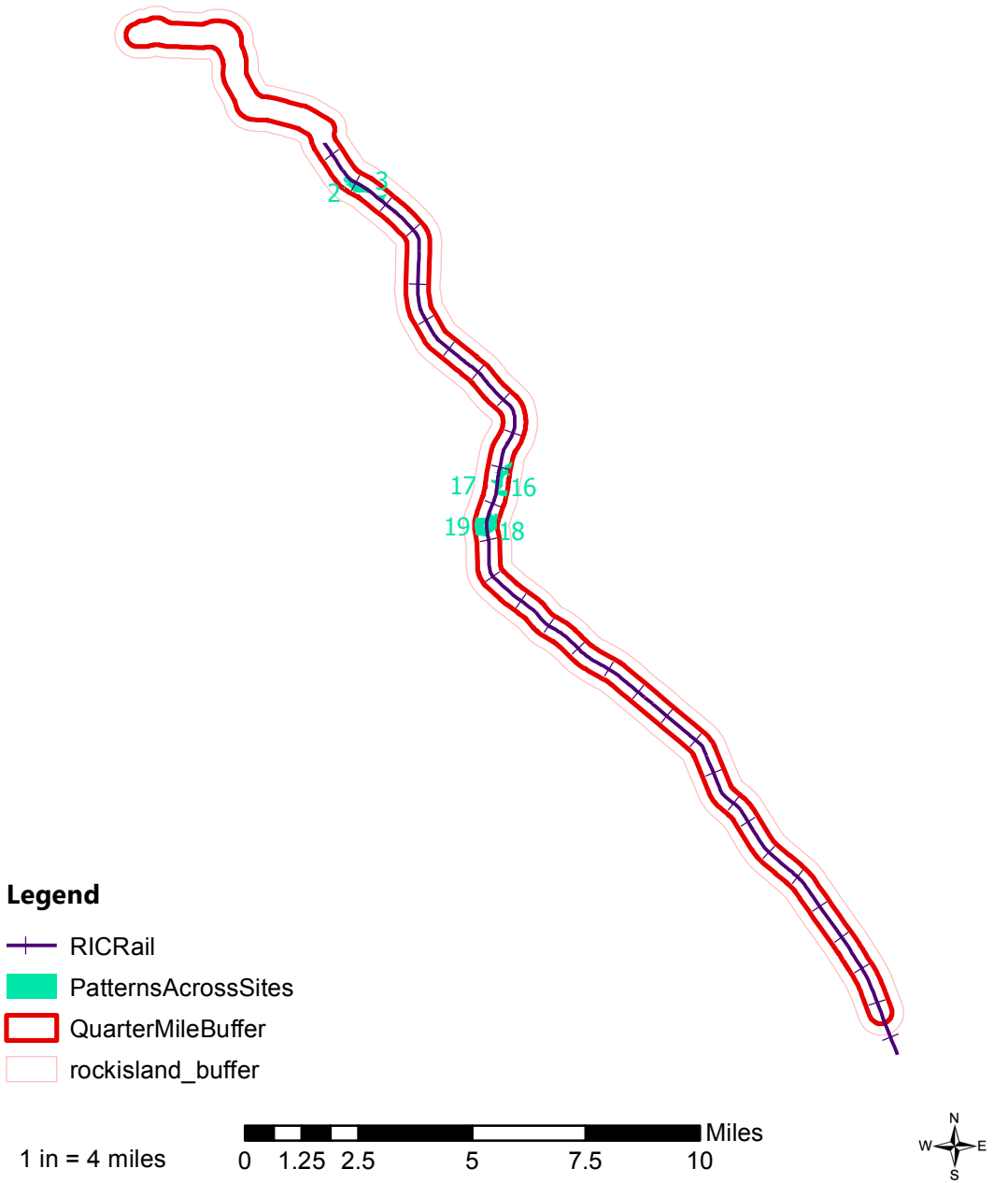


Figure C.34 identifies sites that are within seventy-five feet of the rail and have an adjacent site across the rail. The combination of these two attributes determines site suitable for installations that could have patterns that cross the rail from site to site.

Fig. C.34 Patterns: Adjacent sites in the northern half of the corridor are suitable for patterns that continue across the rail line.

Foreground Blurring Elements

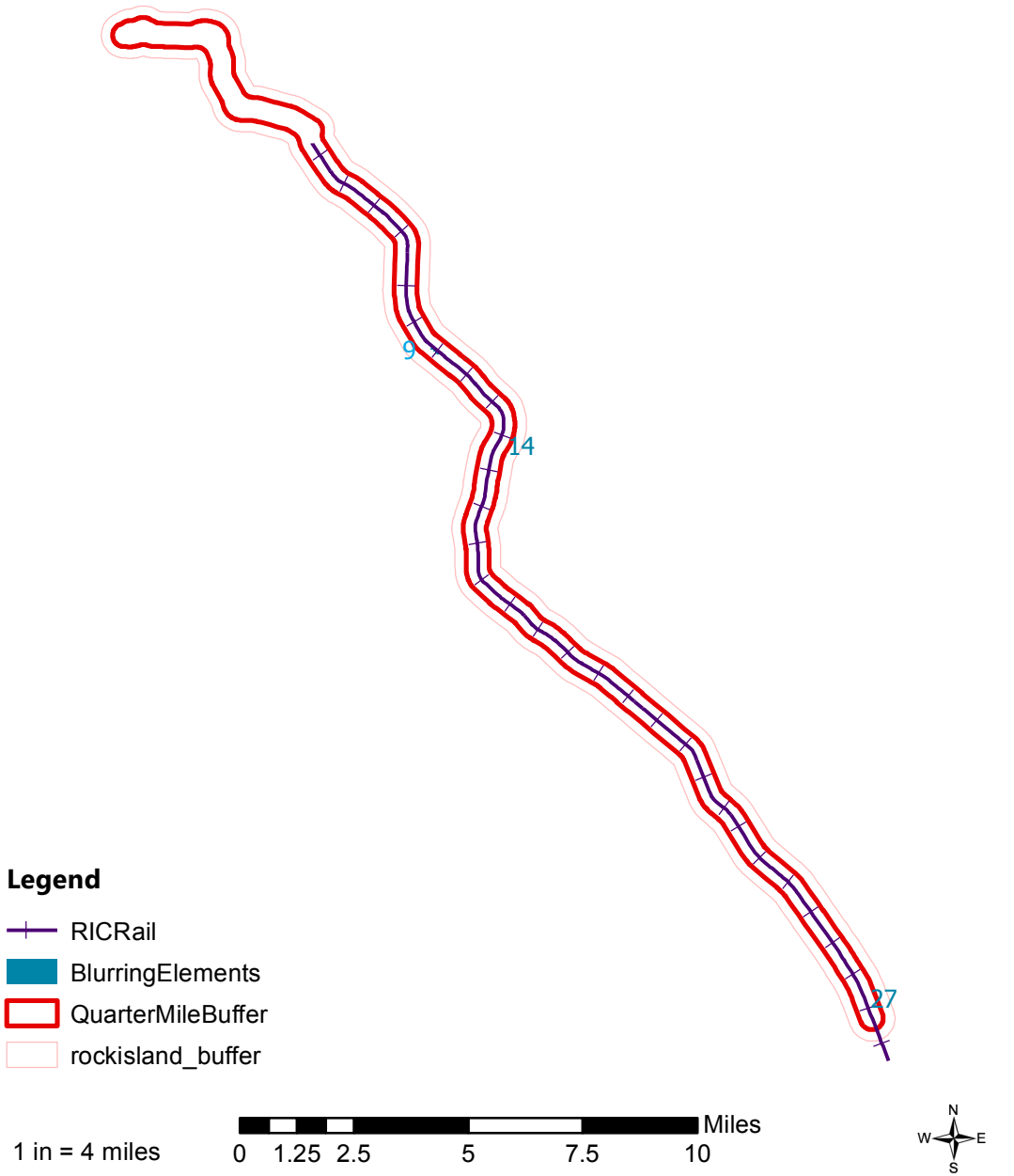


Figure C.35 identifies sites that are lower in elevation than the rail, have a visible ground plane from the rail, are within seventy-five feet of the rail, and have a considerable amount of landcover without forest, but do not have a higher elevation than the rail in combination with a ground plane that is not visible from the rail. The visibility and close proximity allow for design elements in the foreground to create a blurring effect.

Fig. C.35 Foreground Blur: There are few sites suitable for blurring elements.

Human Scale

Figure C.36 identifies sites that are within seventy-five feet of the rail and have a considerable amount of forest. Installations that are human scale and can stand out in the forest are suitable for these conditions.

Fig.C.36 Human Scale: Sites most suitable for human scale installations are found in the middle and northern portion of the corridor.

Large

Figure C.37 identifies sites that are considerably less covered with forest. These sites are generally open, which leaves plenty of room for large installations that can vary in design.

Fig. C.37 Large: Less than half of the sites are suitable for large installations.

Physical

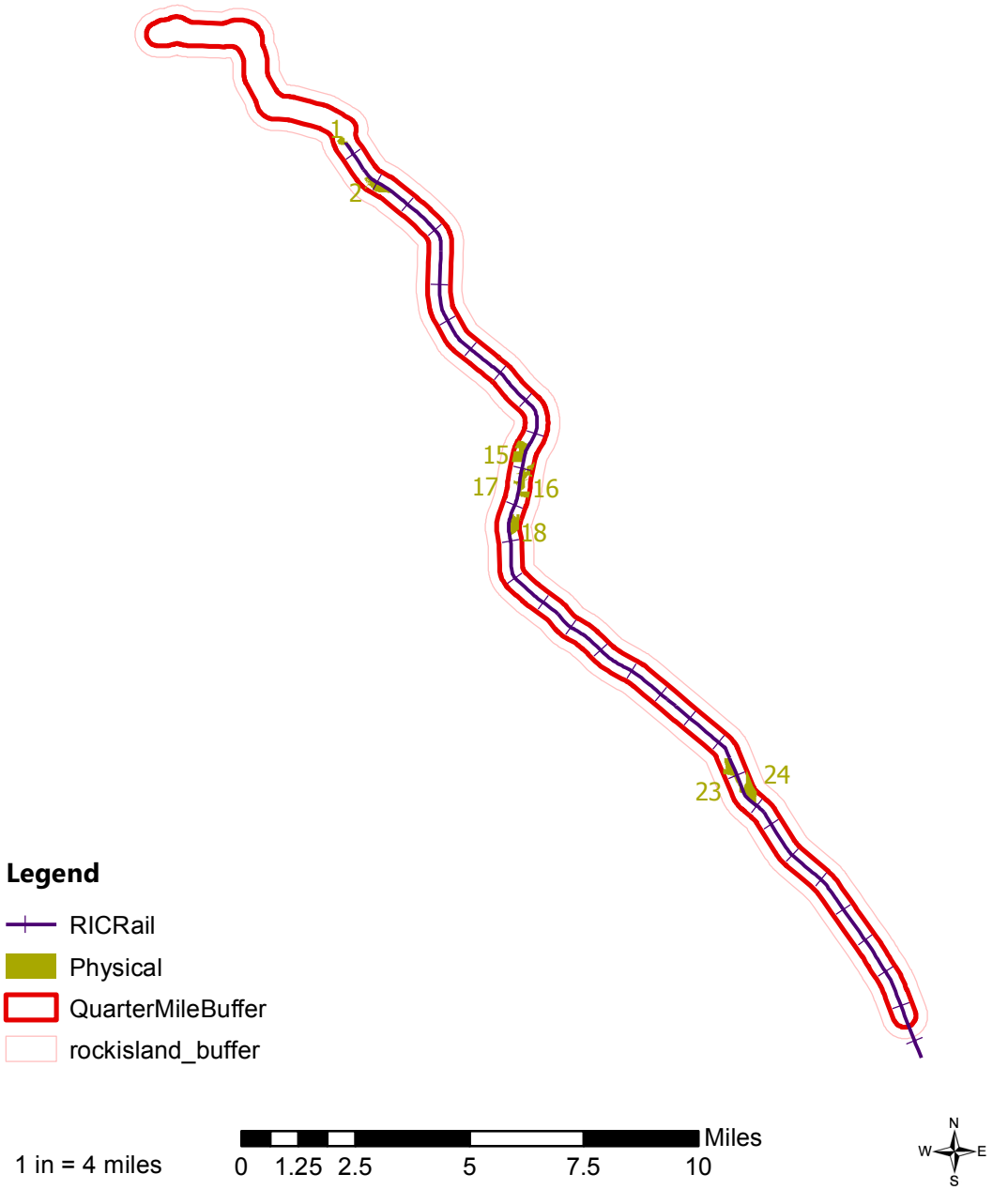


Figure C.38 identifies sites that intersect with MetroGreen. These sites have the opportunity to be developed into physical programs that MetroGreen users can enjoy. These sites will have much different installments in comparison to those that are purly visual elements for the rail experience.

Fig. C.38 Physical: Sites suitable for physical installations are found in clusters along the rail line.

Landform

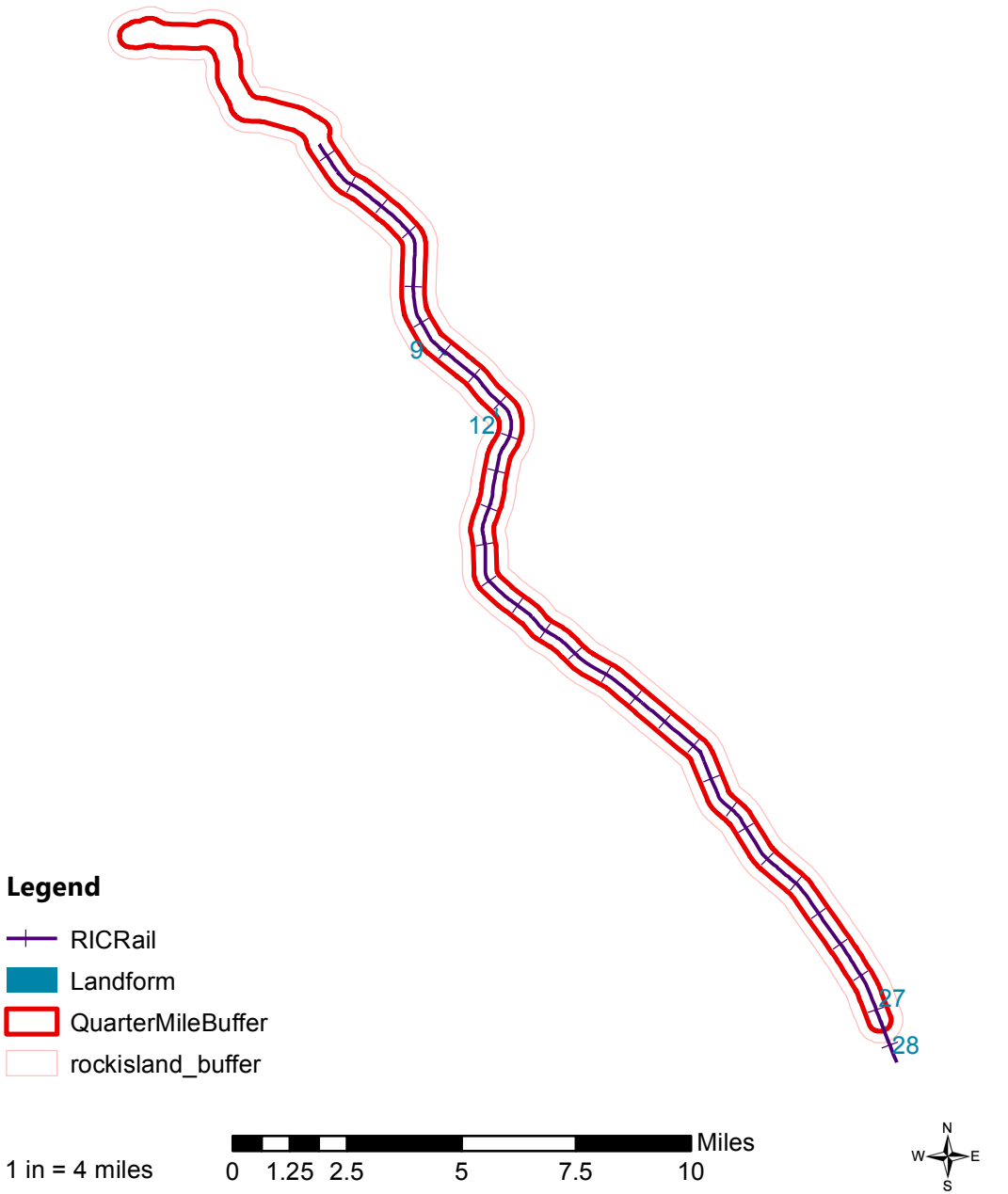


Figure C.39 identifies sites that are considerably less covered with forest, but are not higher in elevation than four feet above the rail. The combination of these attributes allows for creative design with the use of landforms that are visible from the rail.

Fig. C.39 Landform: Only a few sites are suitable for landform installations.

Aquaponics

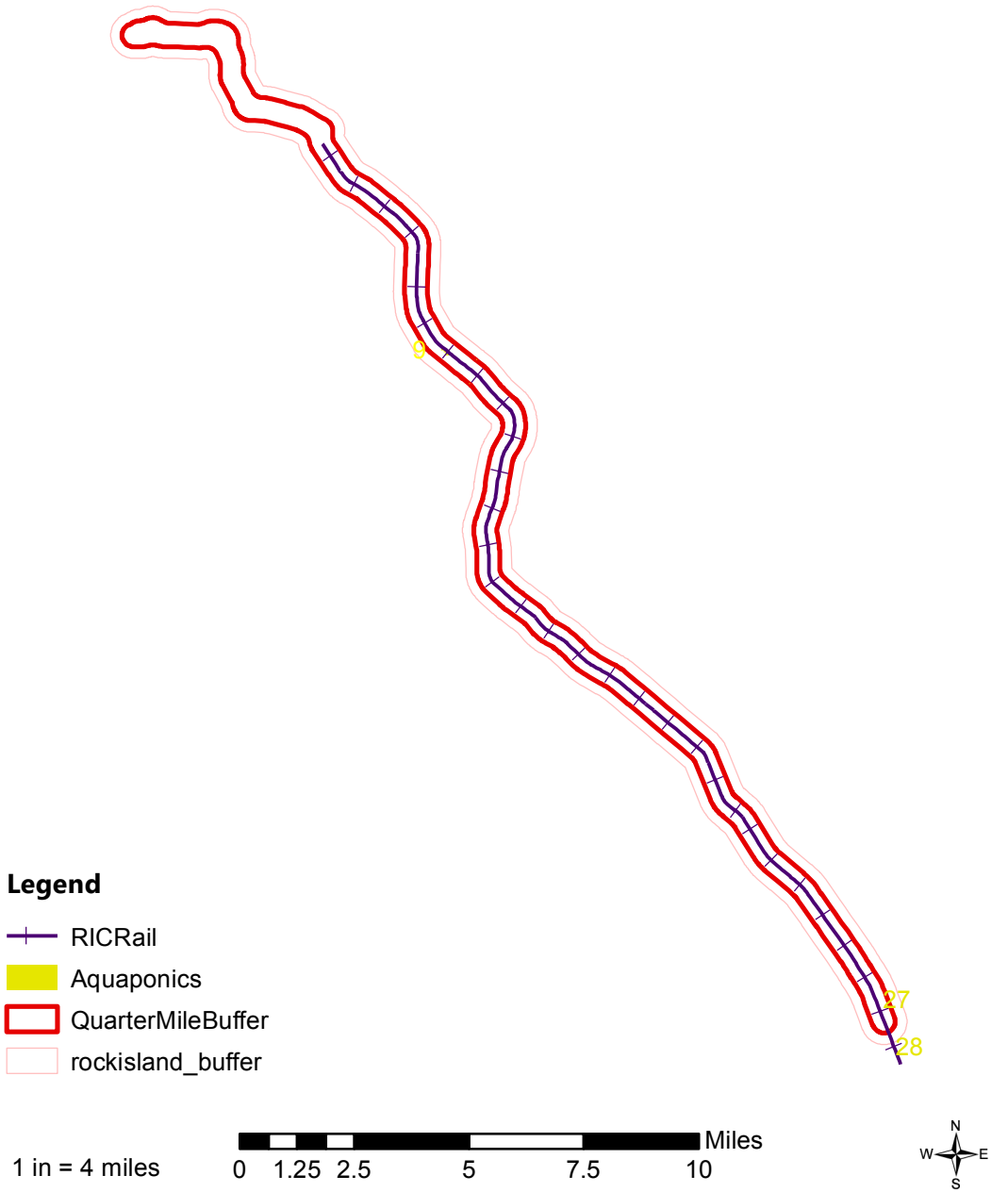


Figure C.40 identifies sites that are lower in elevation than four feet above the rail, have a visible ground plane from the rail, have a considerable amount of landcover without forest, but are not higher than four feet above the rail, and do not intersect with MetroGreen. Aquaponics requires design elements that are flat and protrude into the ground. Low lying visibility is necessary to enjoy aquaponics.

Fig. C.40 Aquaponics: Only a few sites along the corridor are suitable for aquaponics.

Solar Art

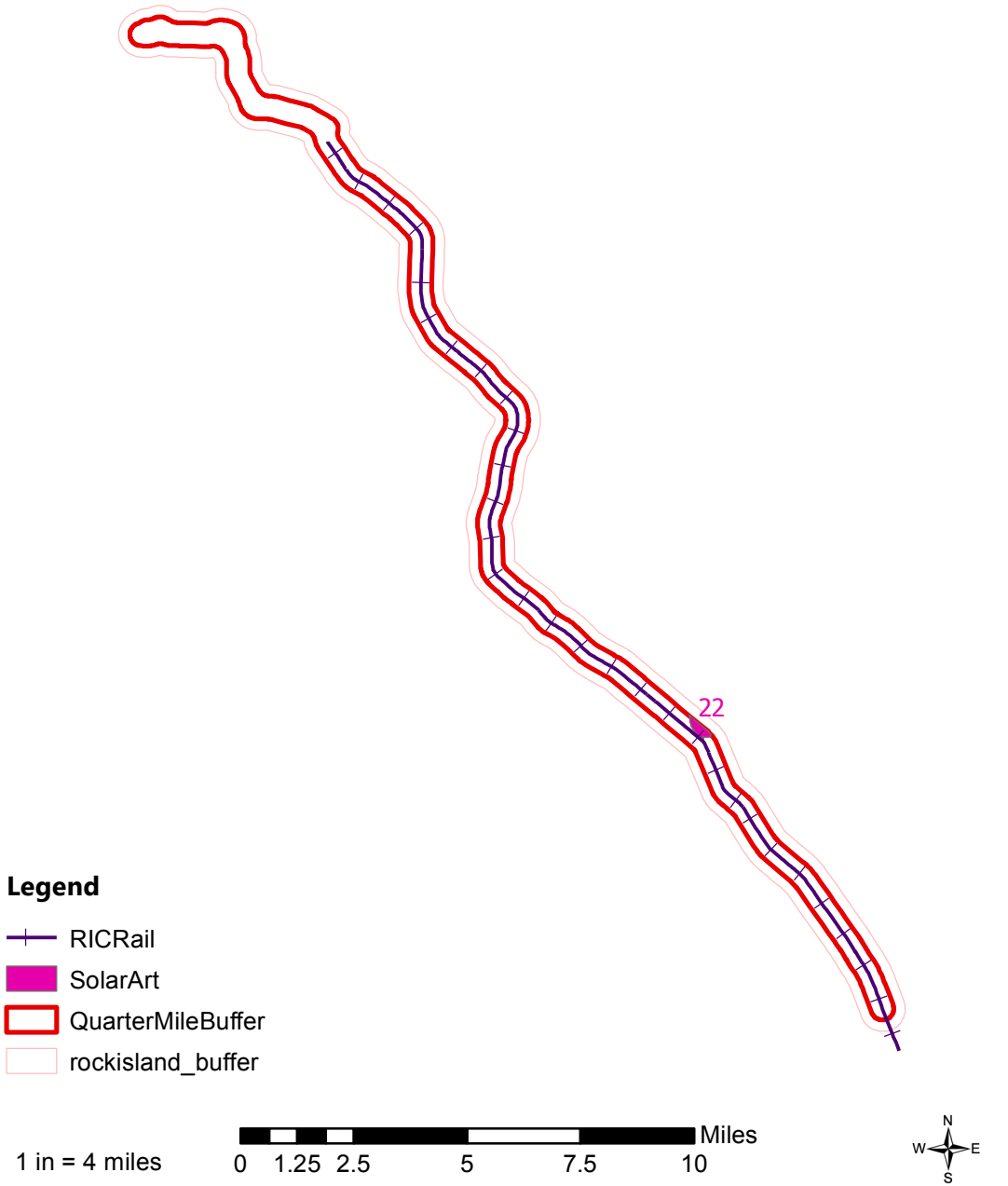


Figure C.41 identifies sites that have visible, clustered, south facing slopes, considerably less forested landcover, and do not contain considerable amounts of forest. The open, south slopes are best for solar energy, but need to be visible from the rail line. Sites with large amounts of forest were eliminated as the slopes tended to be shaded by the adjacent forests.

Fig. C.41 Solar Art: Only one site along the corridor is suitable for a solar art installation.

Xylochimes

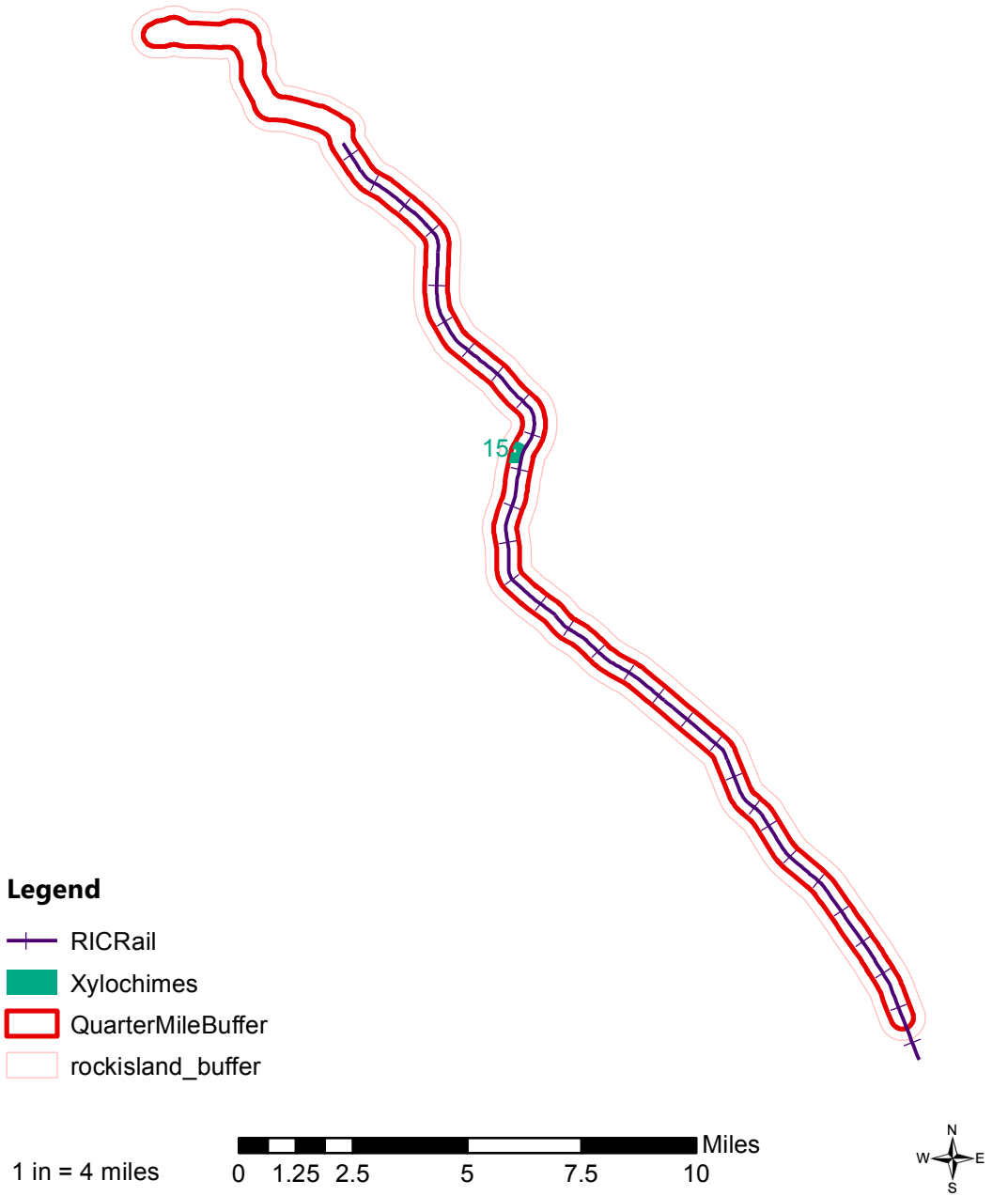
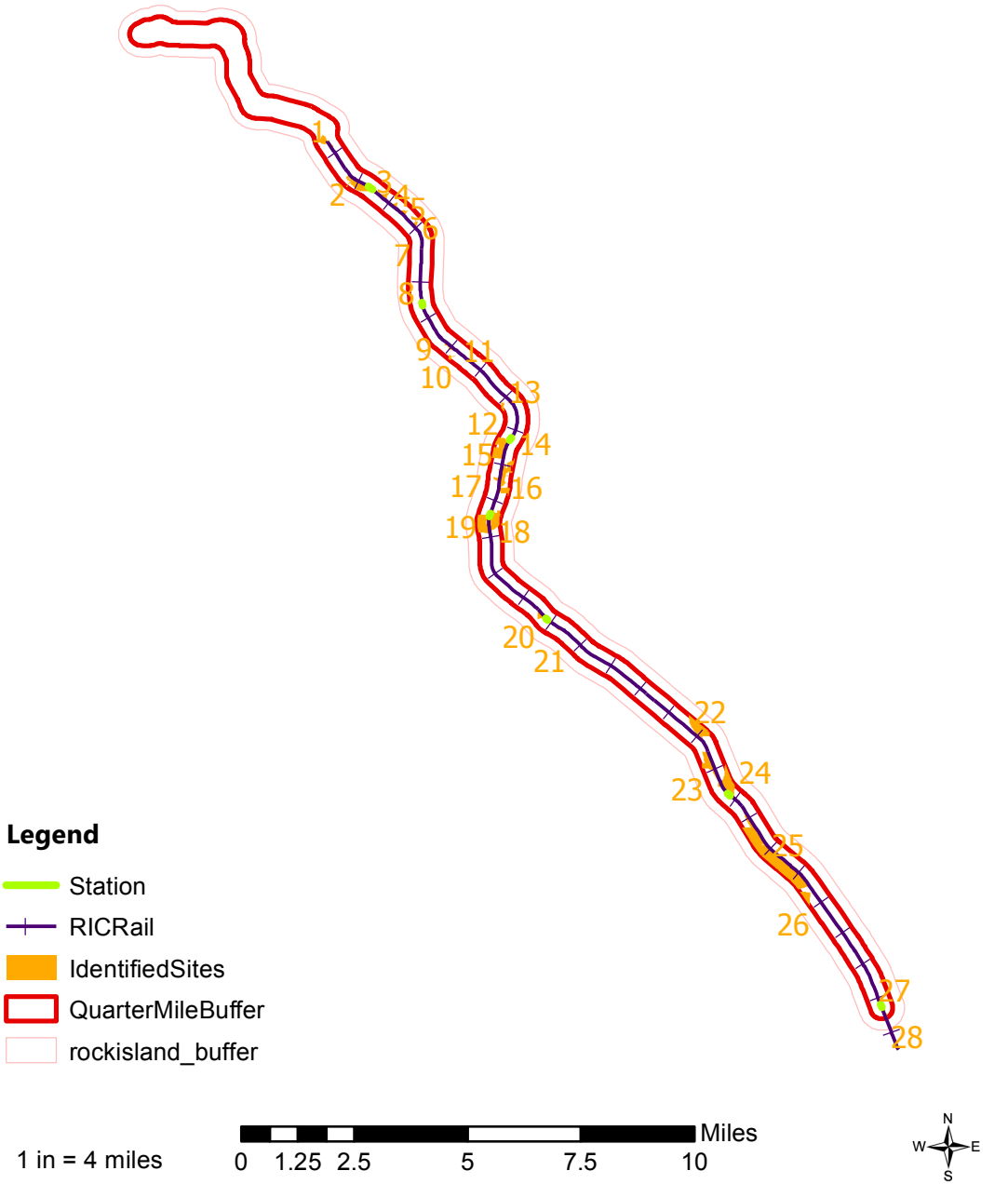


Figure C.42 identifies sites that are in lower in elevation than four feet above the rail, have visible ground planes from four feet above the rail, have considerably less forest cover, and intersect with MetroGreen, but do have ground planes that are not visible from the rail. Xylochimes is a physical program that needs people to use it. However, it is also a visual installation that needs full visual access in an open space.

Fig. C.42 Xylochimes: Only one site along the corridor is suitable for a xylochimes installation.

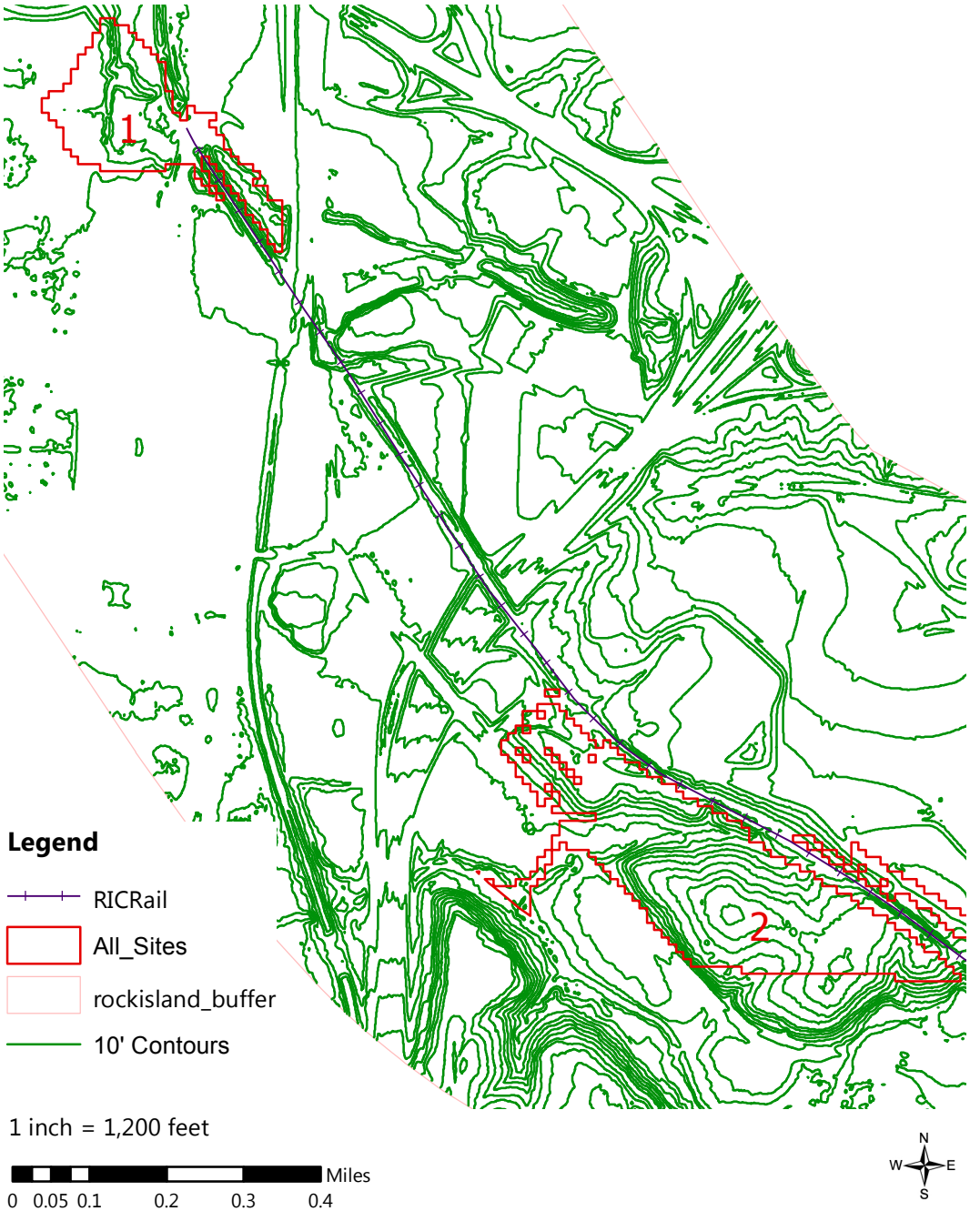
Station Locations



Identifying the location of all of the commuter rail stations allows for the elimination of site unique installations for sites containing a station. This way it does not appear that installations are implemented at some stations and others are disregarded. While there are stations set adjacent to some sites, site 24 is the only site containing a station.

Fig. C.43 Station Locations: Site 24 requires no individualized installation as there is a station located there.

Sites 1-2 Topography



Figures C.44-C.54 illustrate the topography of each site with 10’ contours.

Fig. C.44 Sites 1-2 Topography: Sites 1 and 2 have some dramatic topographic change.

Sites 3-6 Topography

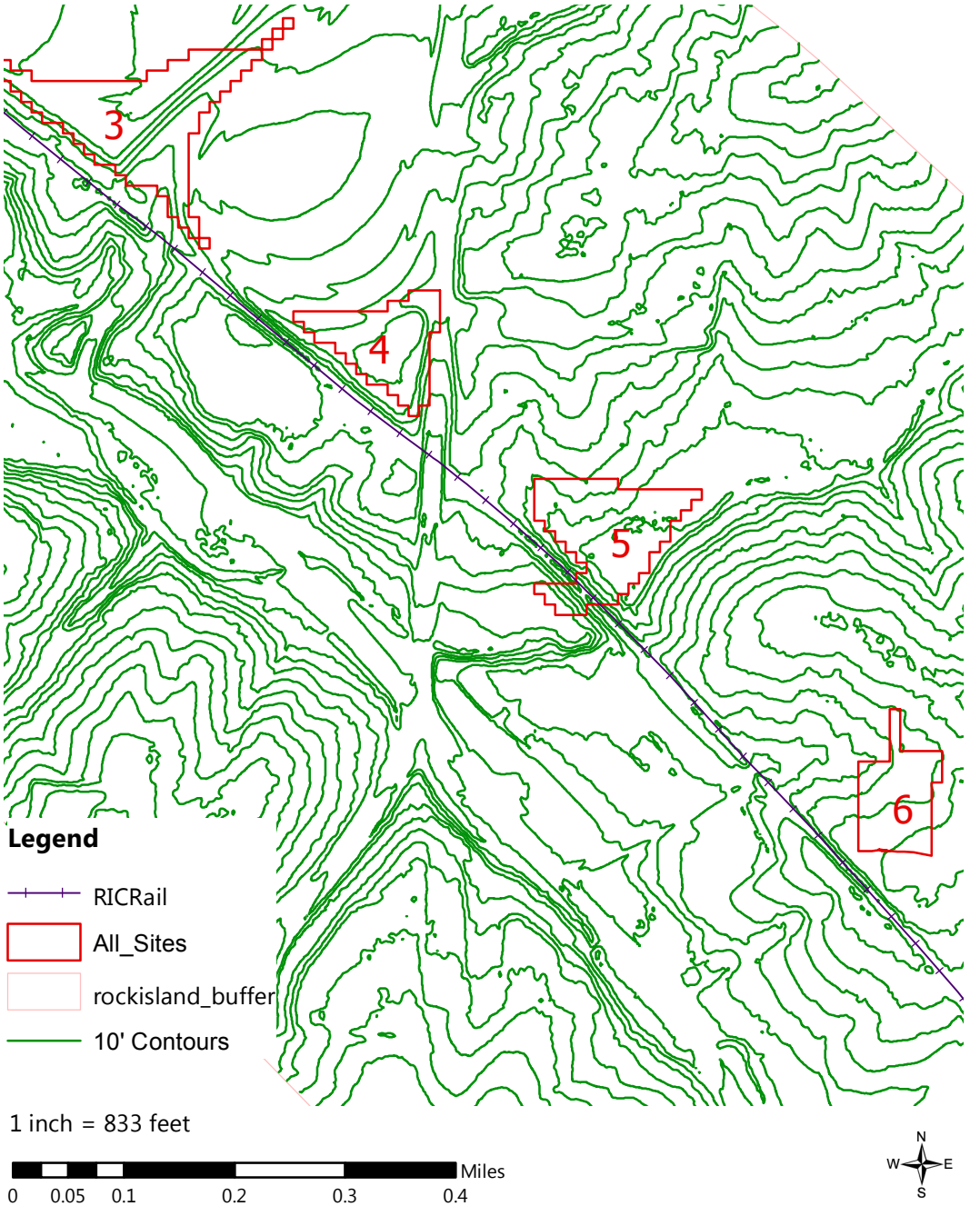


Fig. C.45 Sites 3-6 Topography: Sites 3-6 are all relatively flat, but sites 4-6 slope down to the northwest.

Sites 7-8 Topography

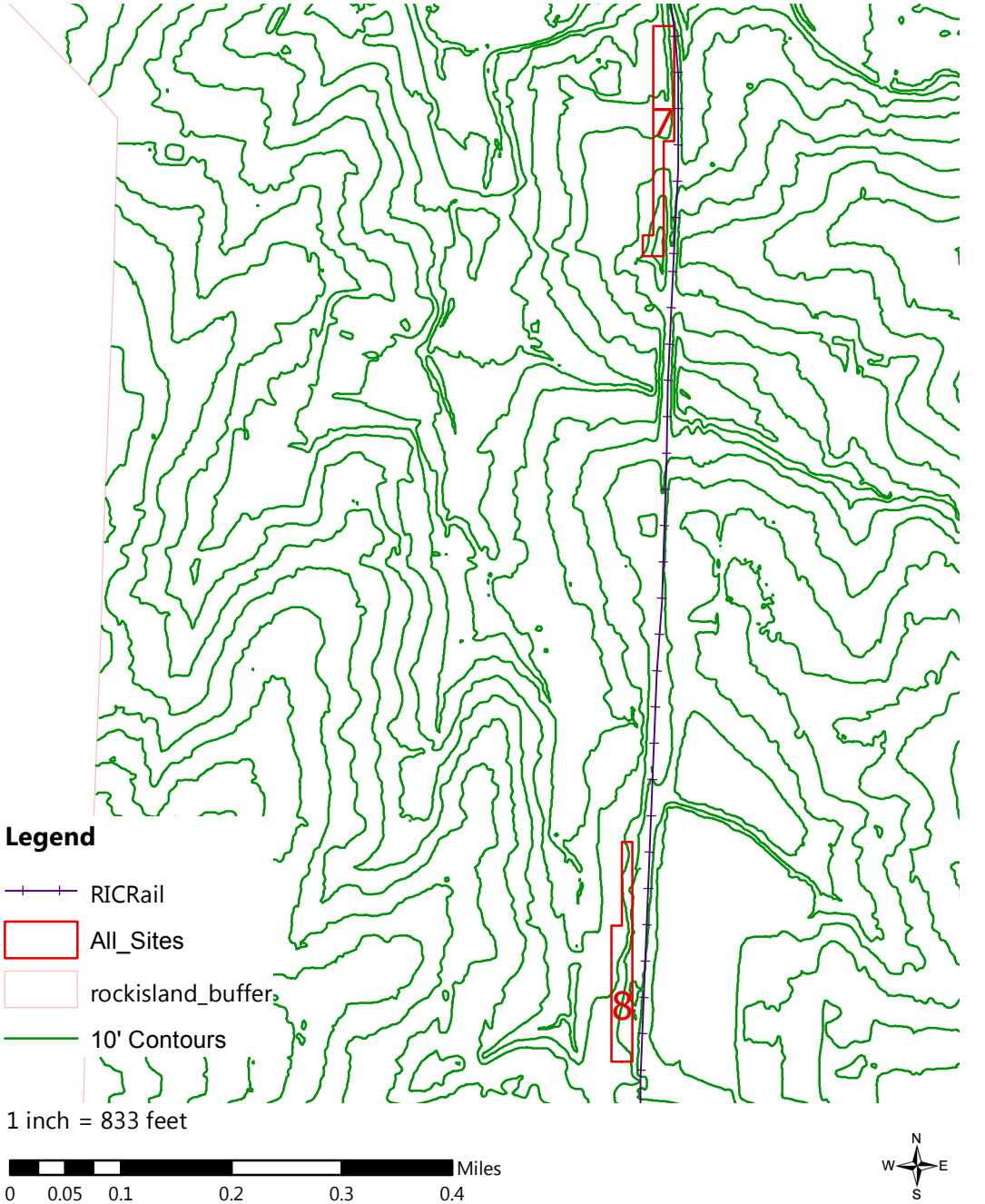


Fig. C.46 Sites 7-8 Topography: Sites 7 and 8 are relatively flat in relation to the surrounding terrain.

Sites 9-11 Topography

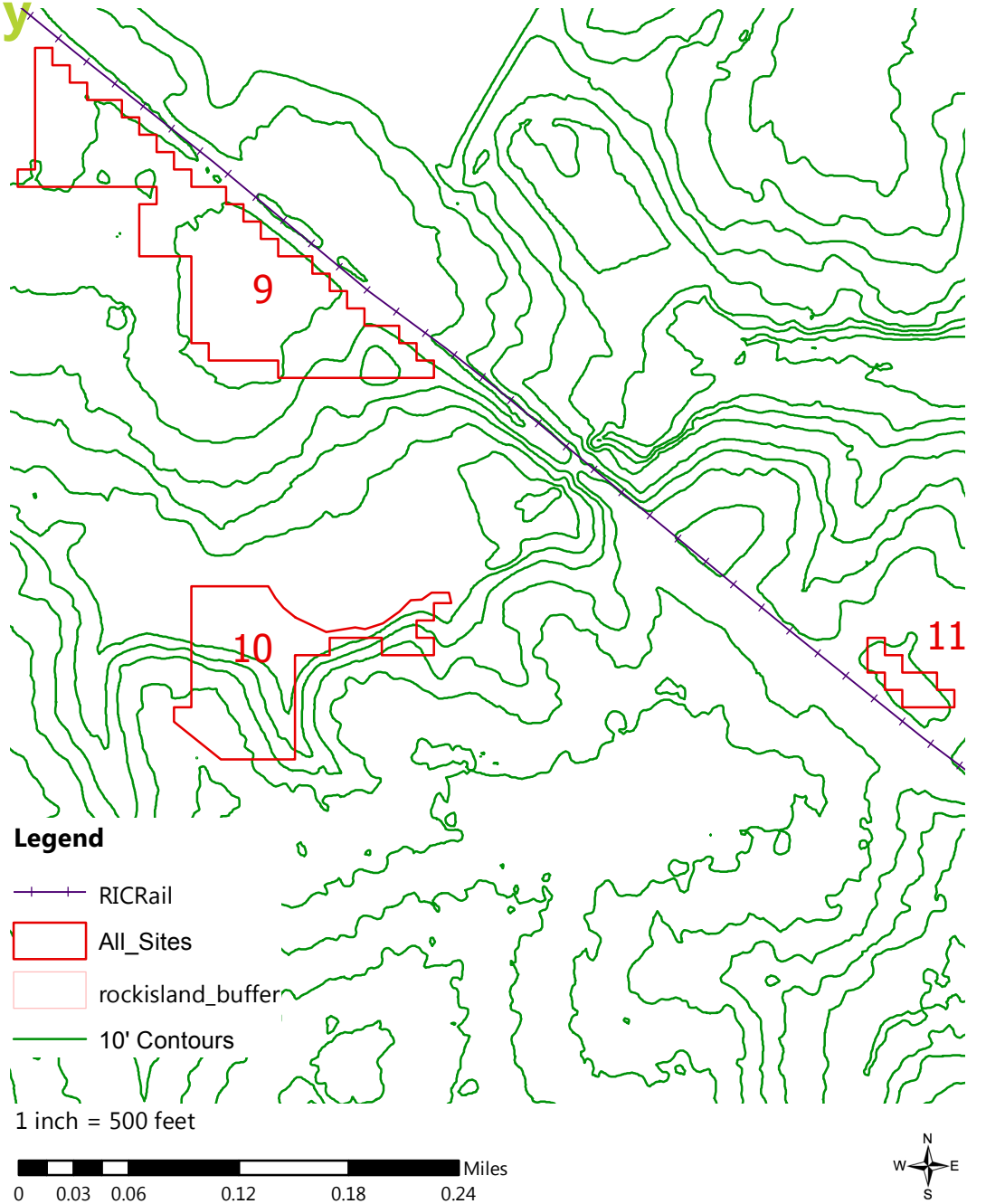


Fig. C.47 Sites 9-11 Topography: Sites 9 and 11 are very flat, while site 10 is partially flat as well as very steep coming off of a ridge.

Sites 12-15 Topography

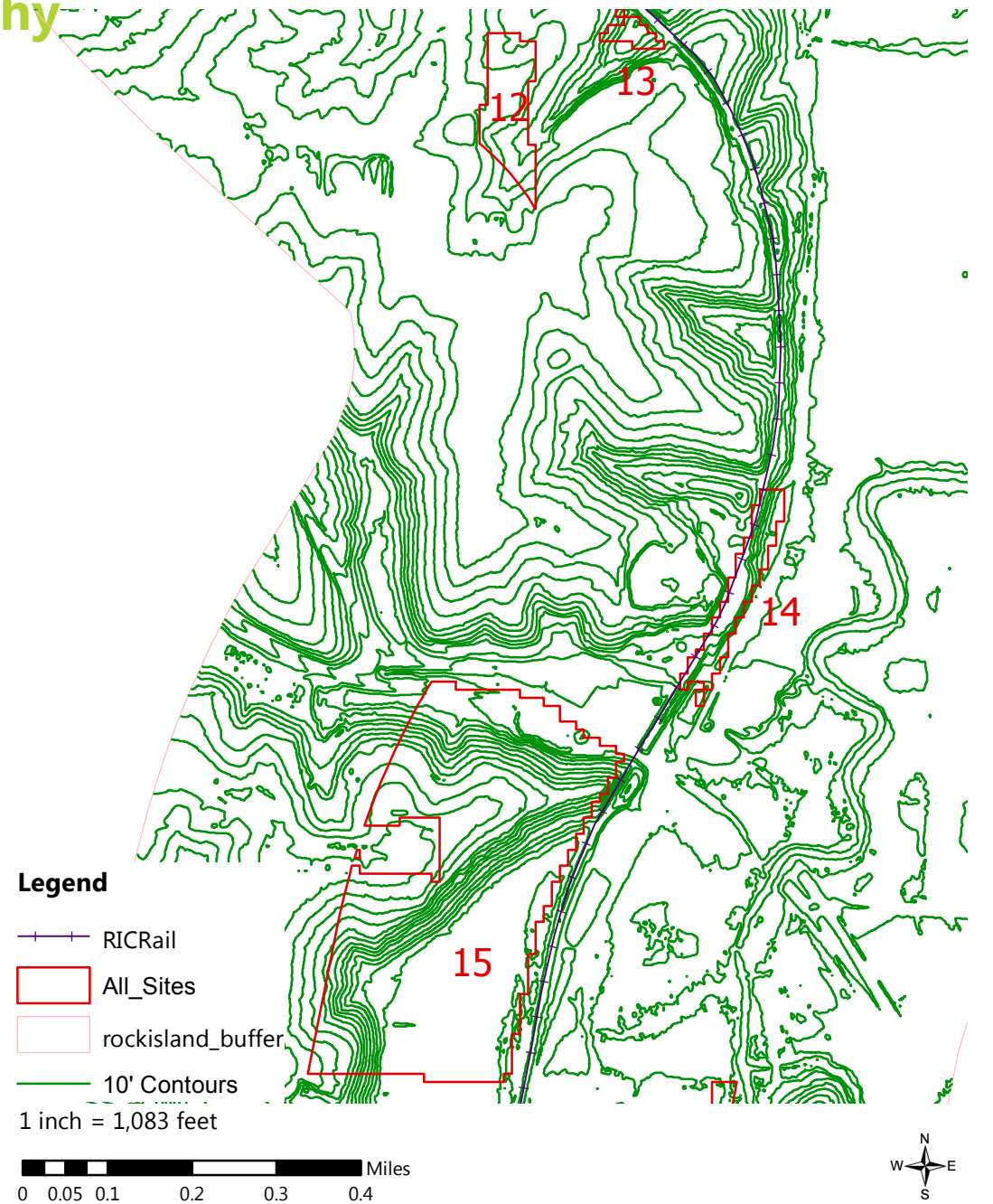


Fig. C.48 Sites 12-15 Topography: Sites 12-15 all have quite a bit of topography change with dramatic slopes.

Sites 16-17 Topography

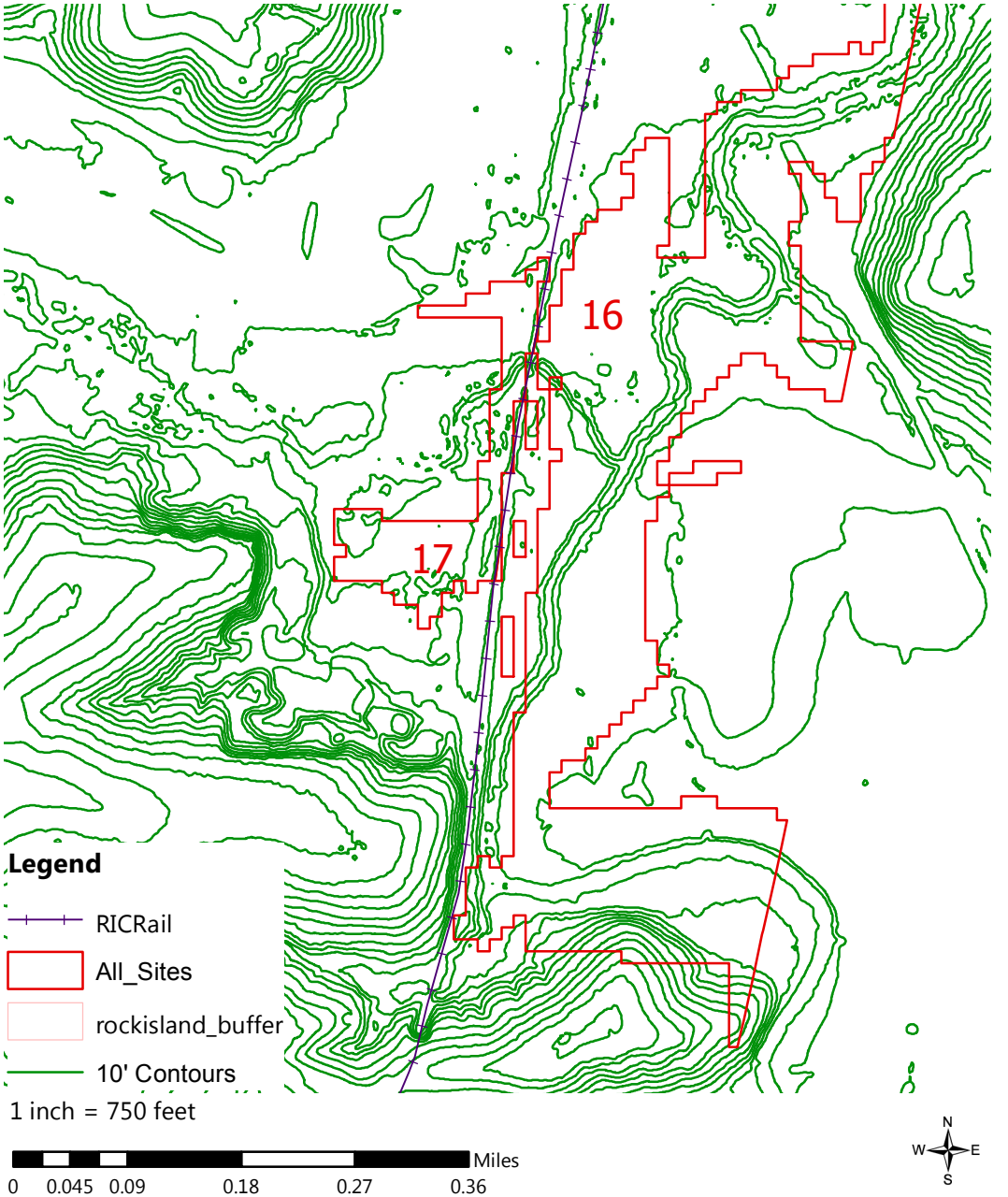


Fig. C.49 Sites 16-17 Topography: Sites 16 and 17 are very flat, but 16 does have a stream running through that influences the topography.

Sites 18-19 Topography

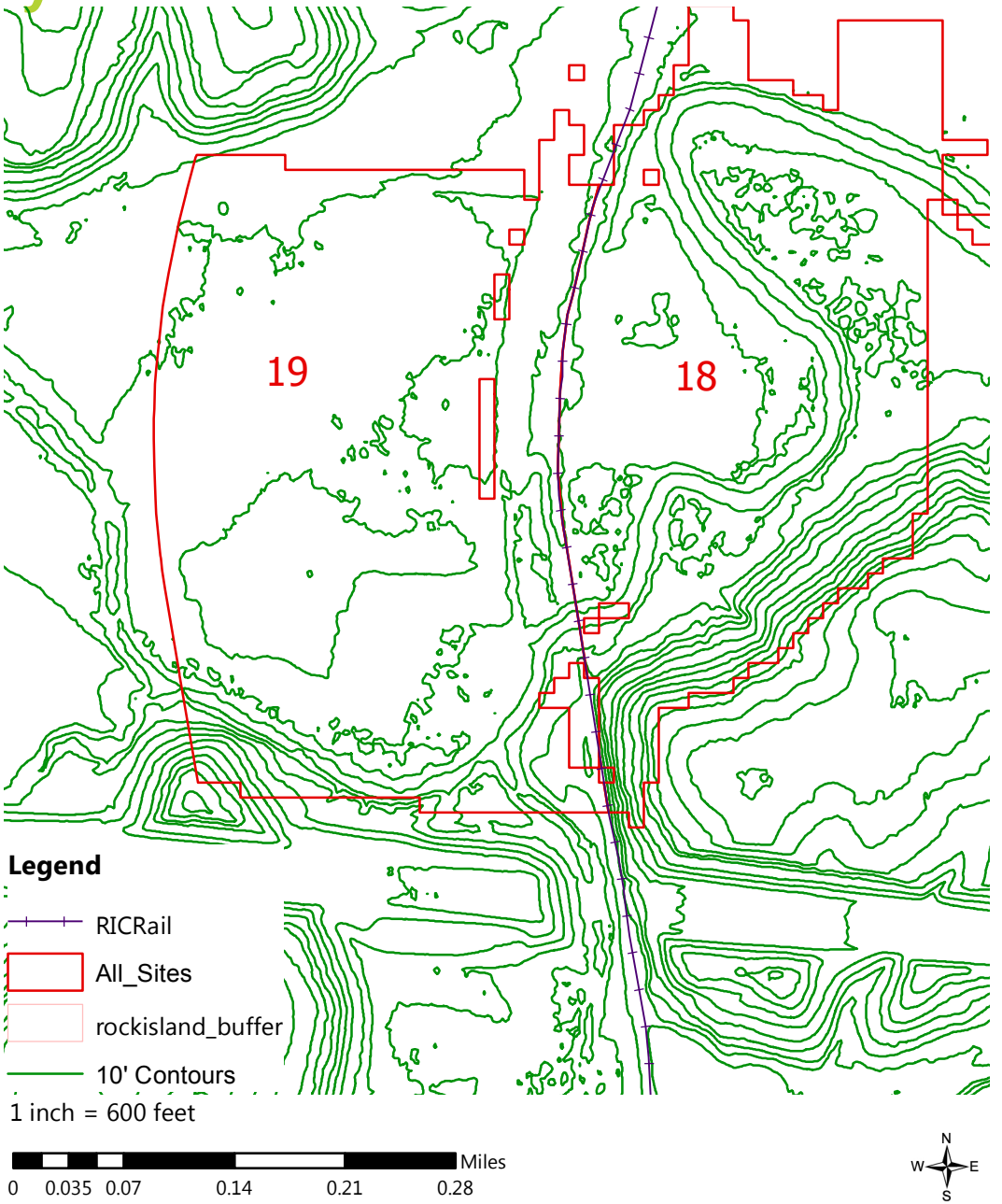


Fig. C.50 Sites 18-19 Topography: The topography of Sites 18 and 19 vary greatly. Site 19 is generally flat, but slopes down to a stream at the south end, while Site 18 is generally flat, but then has a dramatic hill to the south.

Sites 20-21 Topography

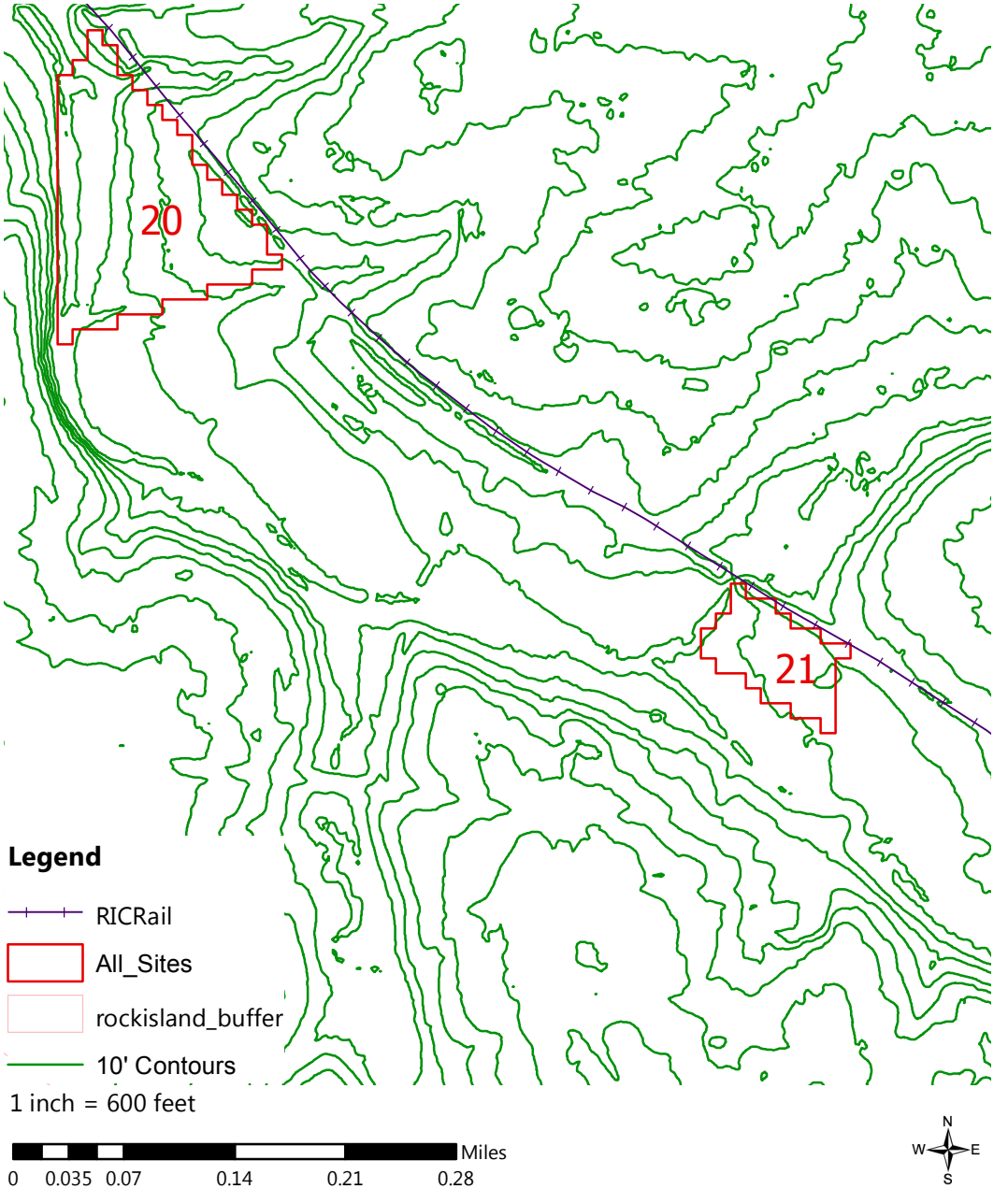


Fig. C.51 Sites 20-21 Topography: Sites 20 and 21 both slope down away from the rail line, but ite 20 has a much more dramatic change.

Sites 22-24 Topography

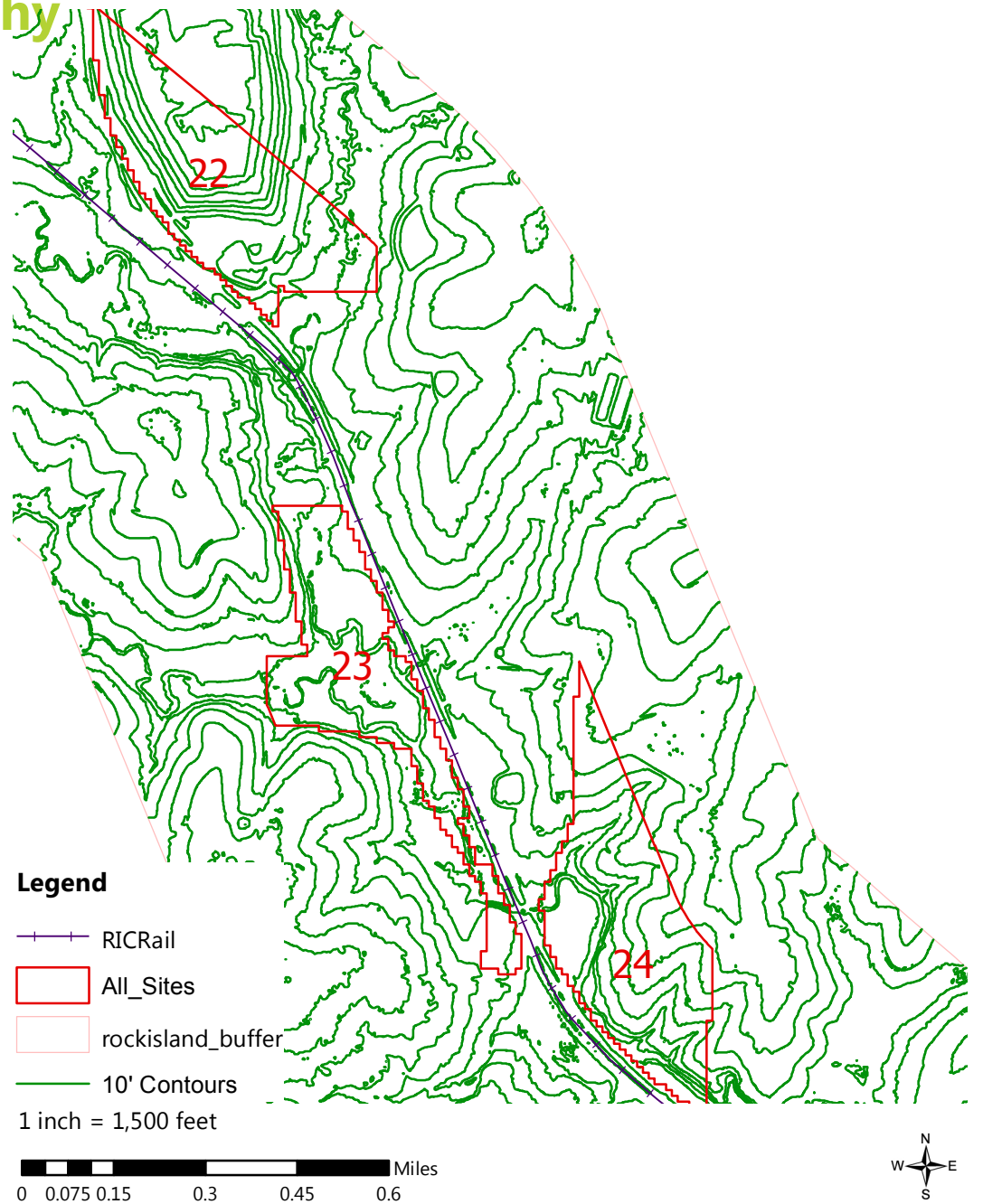


Fig. C.52 Sites 22-24 Topography: Sites 22 and 24 have quite a bit of topographic change, while Site 23 is very flat with dramatic change at the west edge.

Site 25-26 Topography

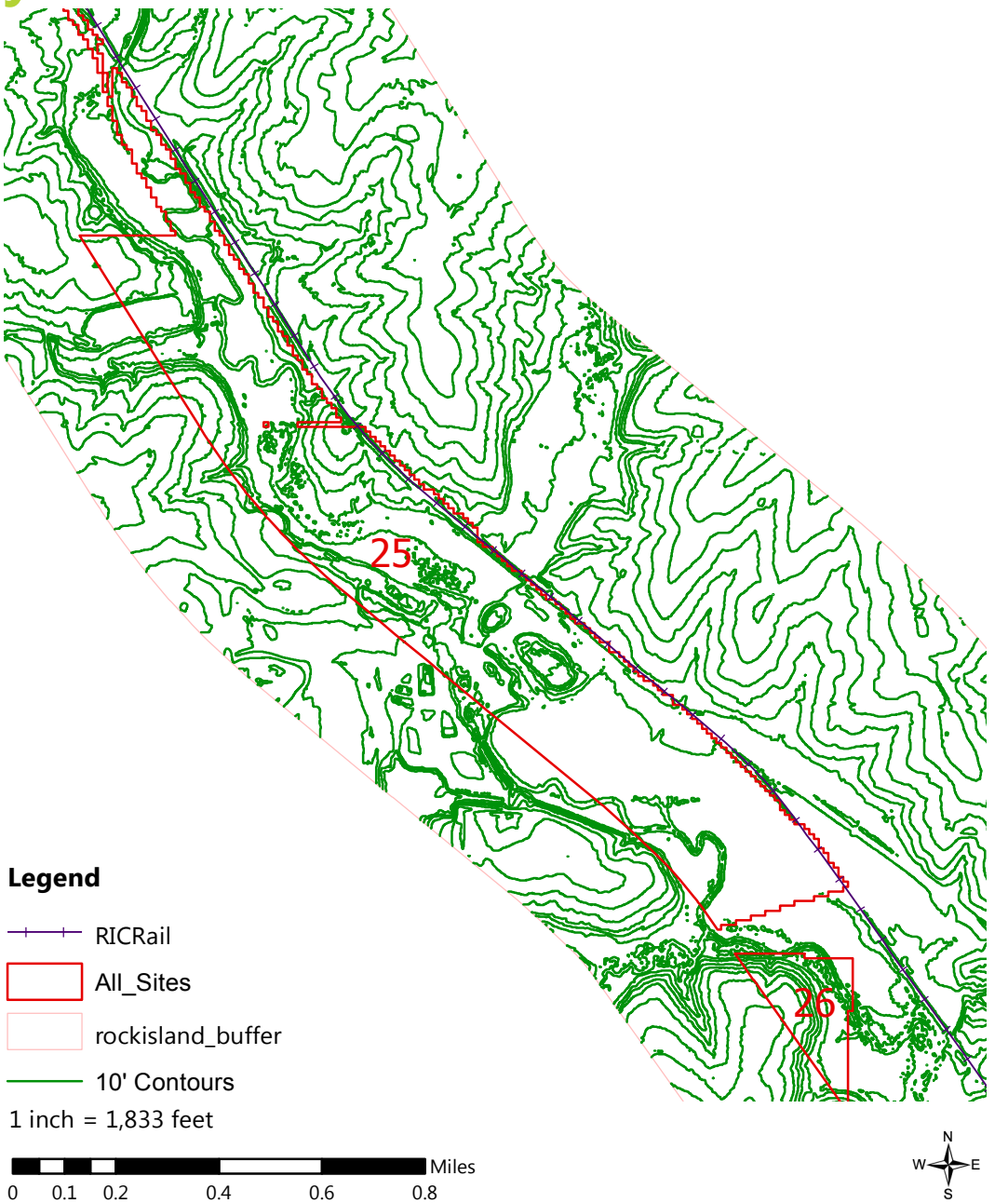


Fig. C.53 Sites 25-26 Topography: The topography of Site 25 varies across the site, while Site 26 sits on the side of a hill.

Site 27-28 Topography

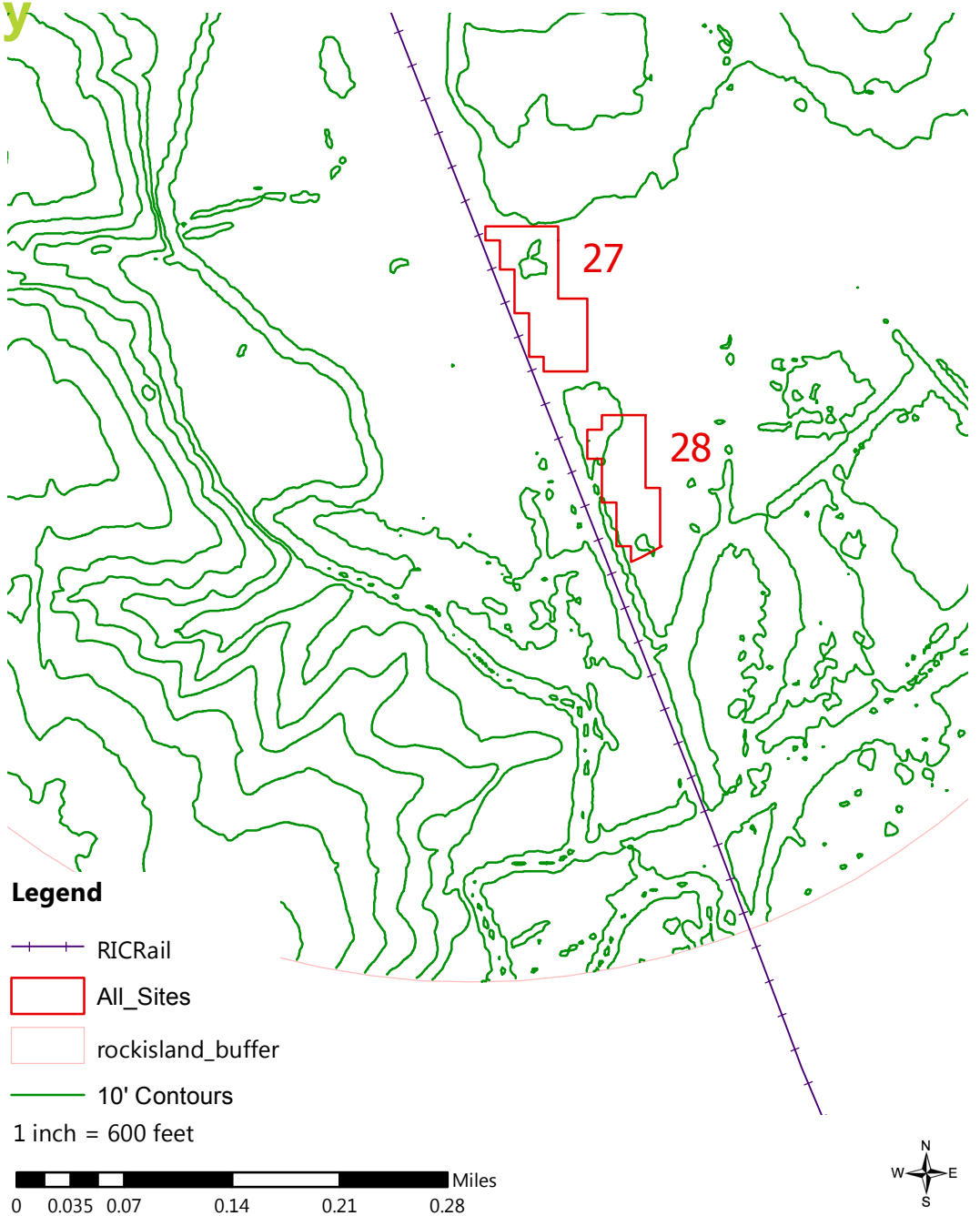
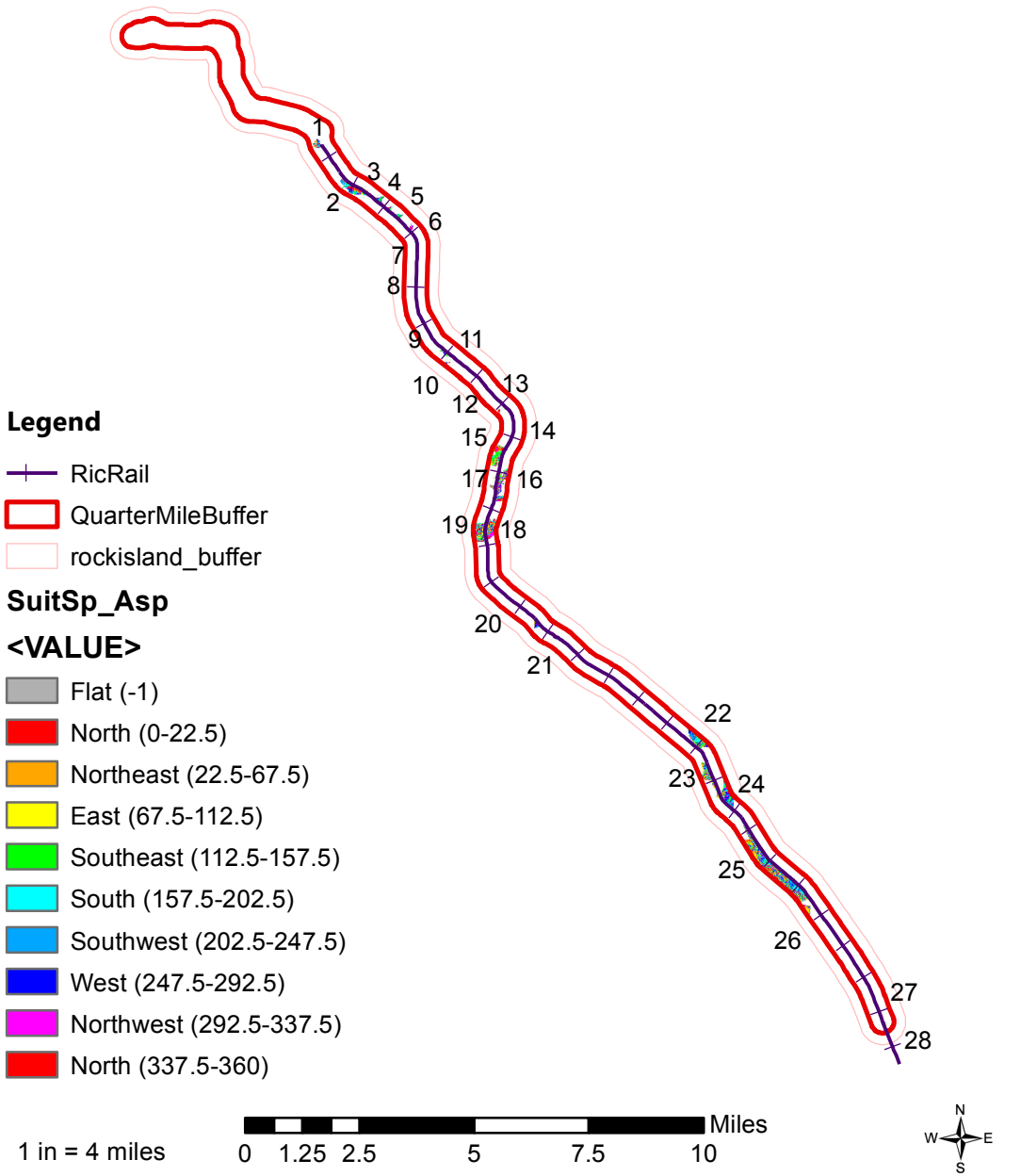


Fig. C.54 Sites 27-28 Topography: Sites 27 and 28 are very flat with hardly any topographic change.

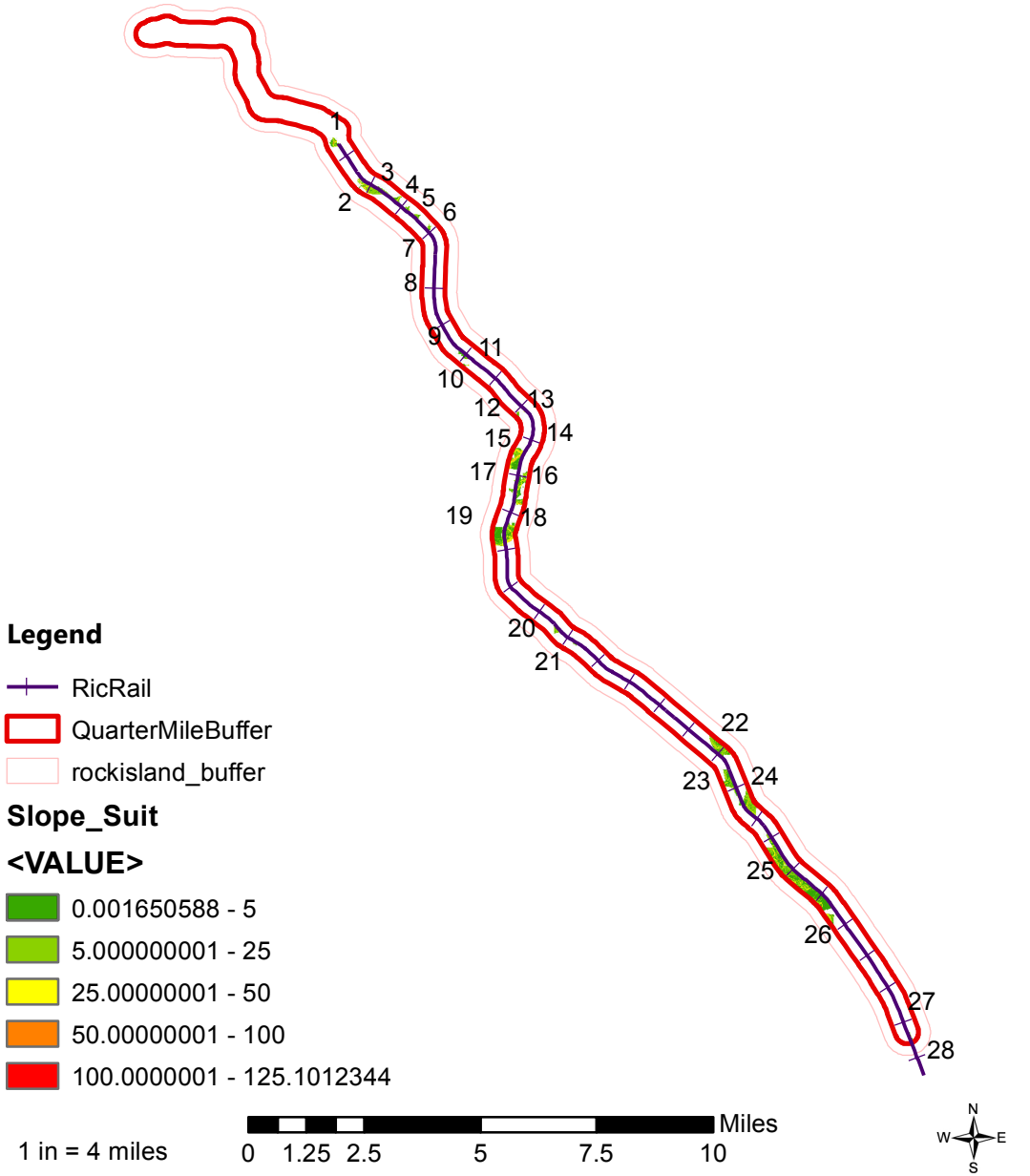
Aspect in Suitable Sites



Extracting the aspect for sites deemed suitable allows this information to be available when the selection of sites comes into play during program and site design. Aspect can help determine placement of plants and shade projection. If installations were to include shadow effects then aspect would be quite important in the placement of those elements.

Fig. C.55 Suitable Sites Aspect: Aspect on each site varies along the corridor.

Slope in Suitable Sites



Extracting the slope for sites deemed suitable allows this information to be available when the selection of sites comes into play during program and site design. Slope will help determine if the site is appropriate for trail users. It also aids in the conclusion of what programs can take place on specific sites as well as deciding on what elements can be implemented into the site as well as their placement.

Fig. C.56 Suitable Sites Slope: Sites along the corridor are relatively flat.

Landcover on Suitable Sites

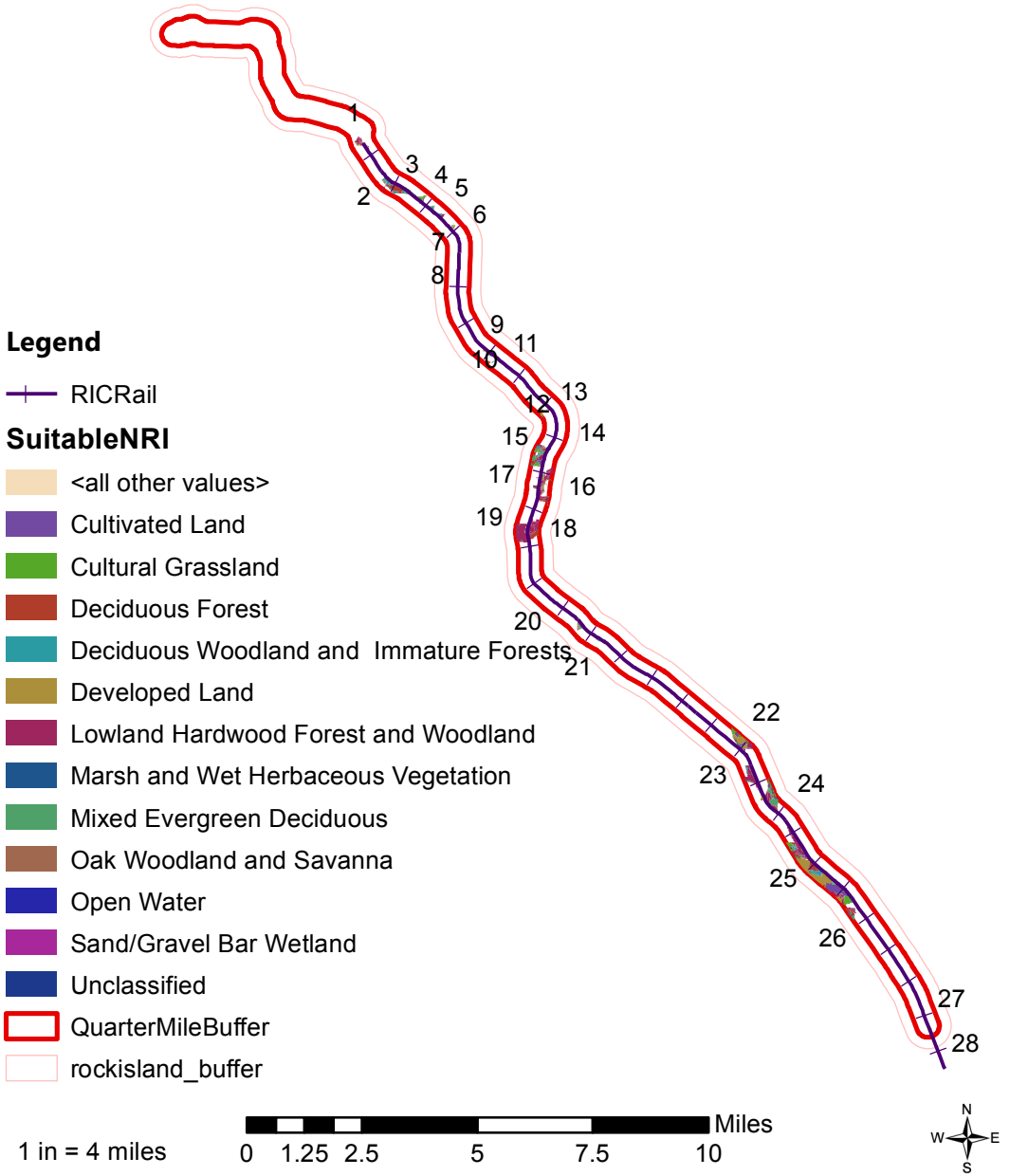
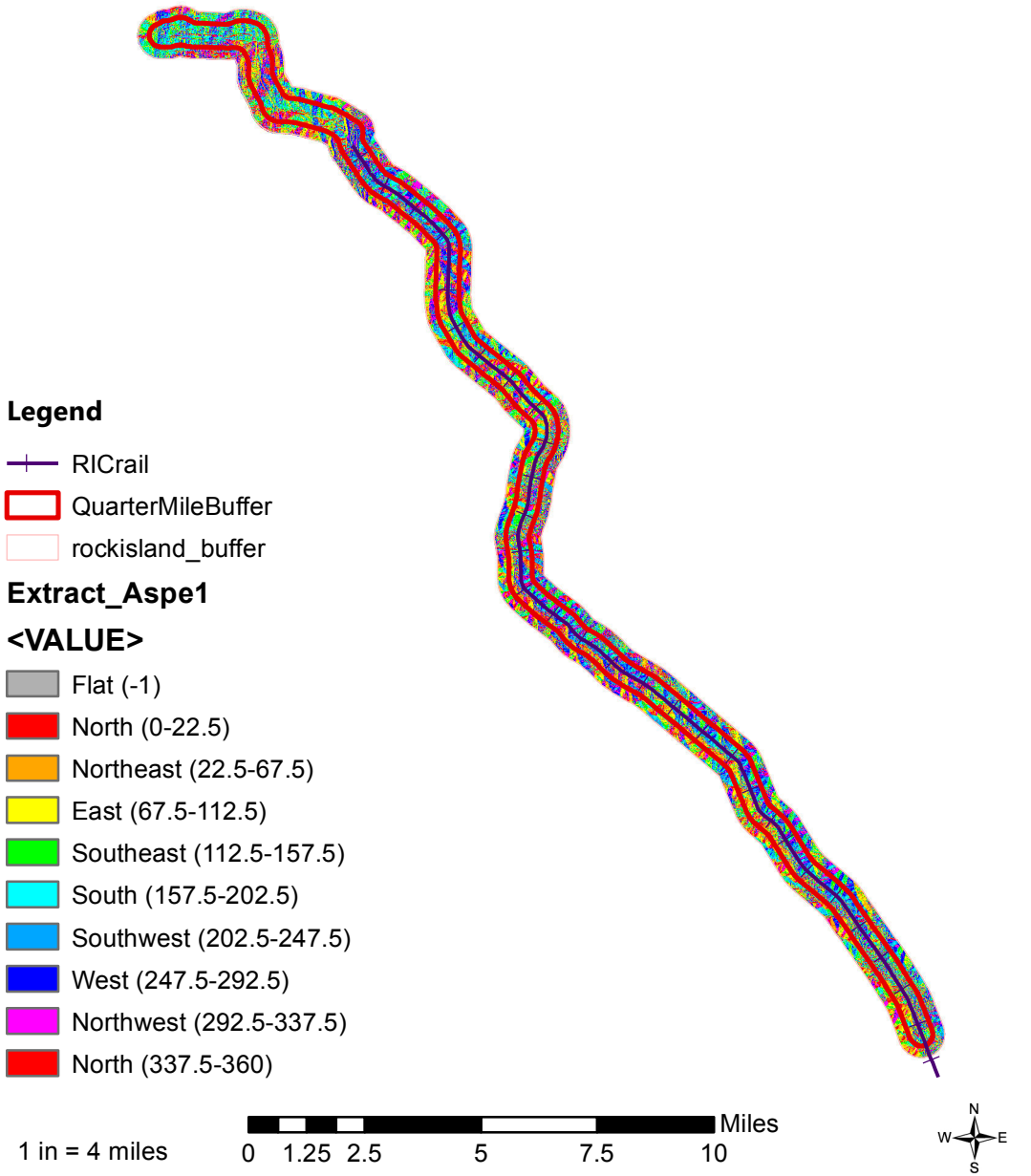


Fig. C.57 Suitable Sites Landcover: The sites contain a mix of land cover with a large amount of forest.

Extracting the land cover for sites deemed suitable allows this information to be available when the selection of sites comes into play during program and site design. Land cover is a large factor in designing installations. The difference between grassland, forests, and immature forests determines what type of installation is implemented as well as the size and distance from the rail.

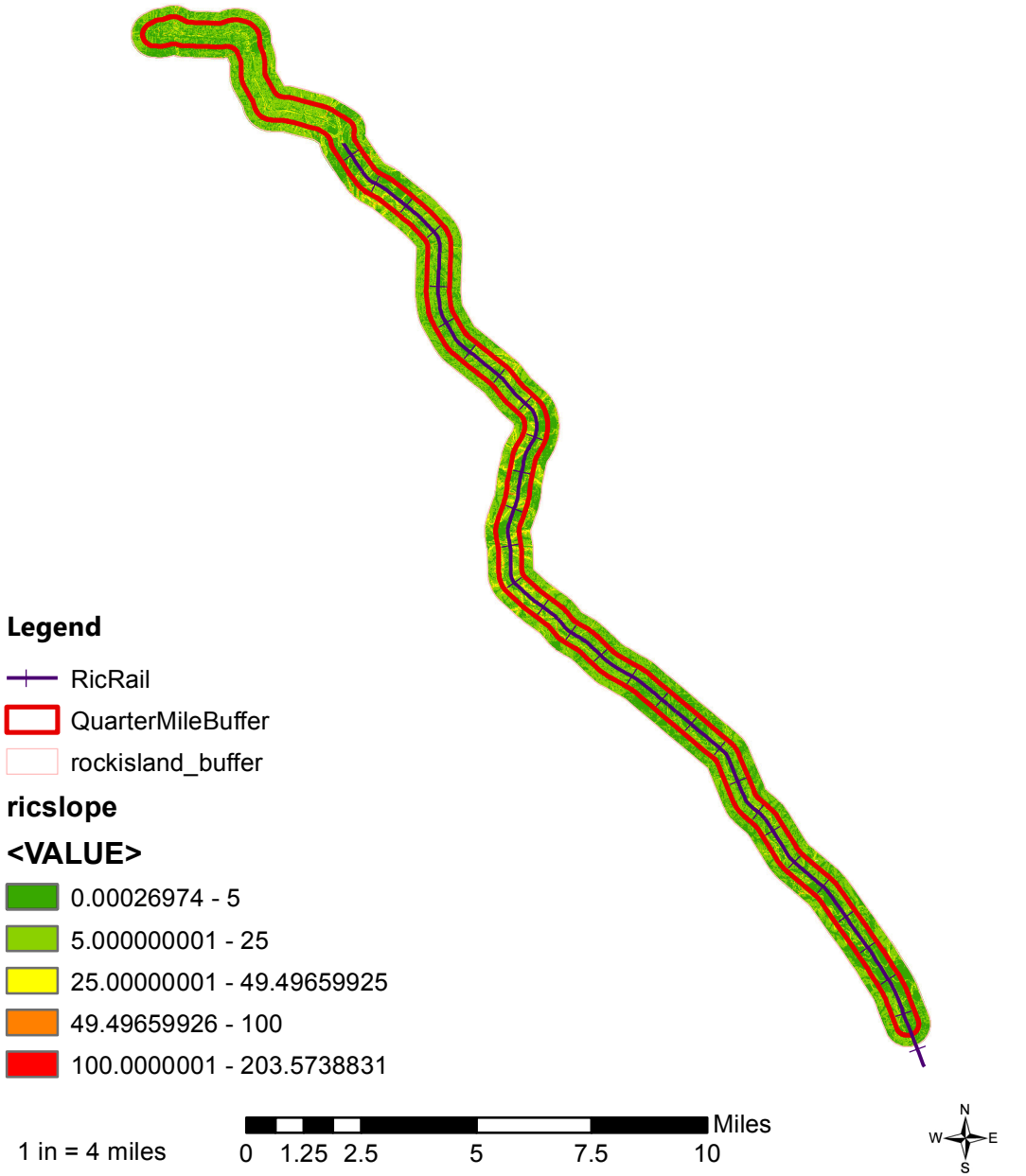
Corridor Aspect



The full extent of aspect along the Rock Island Corridor is available to see the surrounding aspect of sites chosen for installations for the sole reason of the possibility of importance dependent on designed programs.

Fig. C.58 Corridor Aspect: Aspect varies greatly throughout the entire corridor.

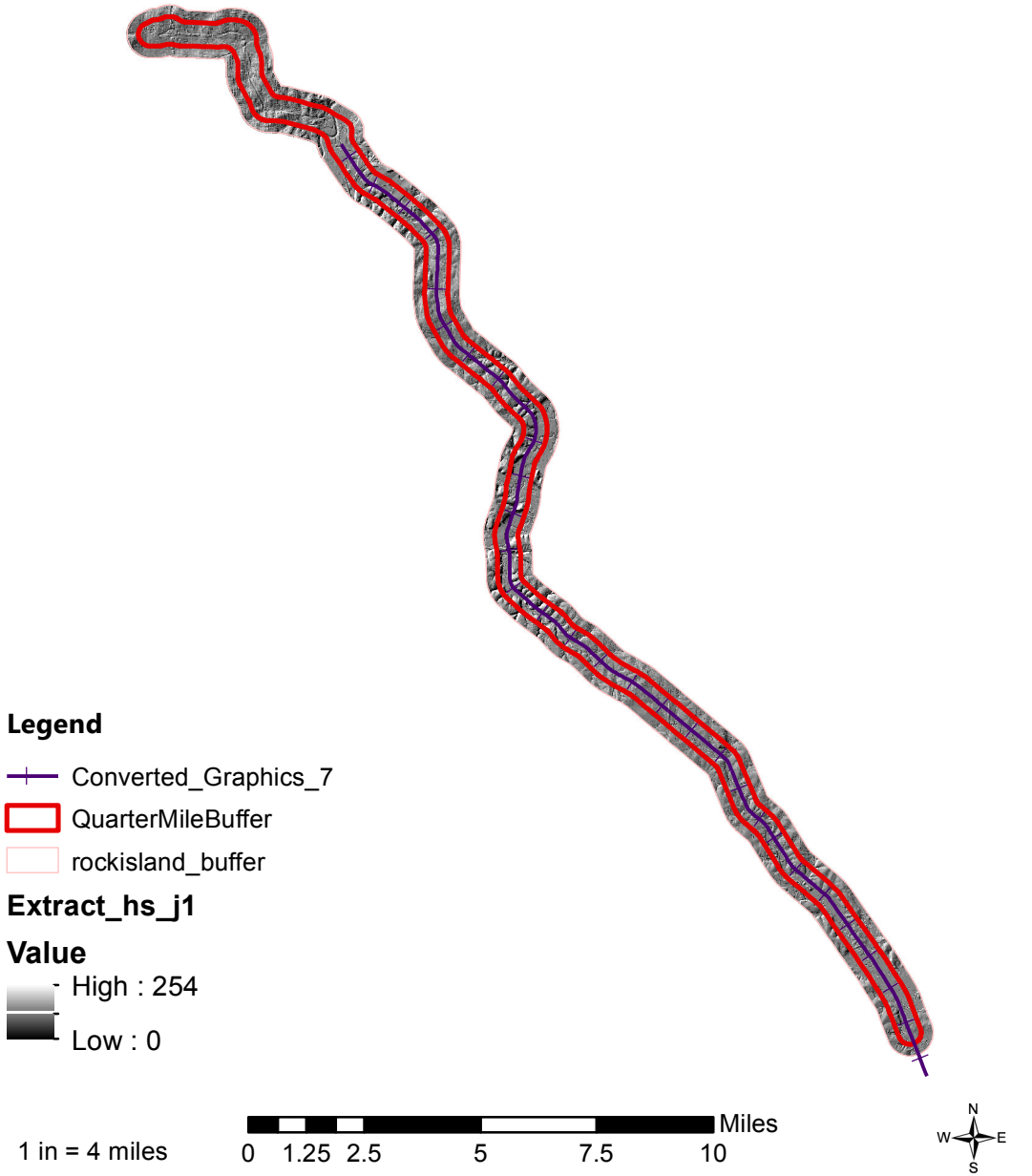
Corridor Slope



The full extent of slope along the Rock Island Corridor is available to see the surrounding slope of sites chosen for installations for the sole reason of the possibility of importance dependent on designed programs.

Fig. C.59 Corridor Slope: The corridor contains relatively flat terrain.

Corridor Hill Shade



The full extent of hill shade along the Rock Island Corridor is available to see the surrounding terrain of sites chosen for installations for the sole reason of the possibility of importance dependent on designed programs.

Fig. C.60 Corridor Hillshade: Hillshade along the corridor varies.

Appendix D: Precedent Studies

"Bloom"

"Bloom" was the runner up entry for the Houston Arts Alliance Bush Intercontinental Airport gateway competition. The design was completed by Ball-Nogues Studio in 2009. The concept was for "the gateway to become a symbol of Houston's warmth and welcoming culture while being a spectacle that can attract global attention by fusing metaphors of the Texas prairie with the universal imagery of road signs" (Ball 2011)

Aesthetics

Driving down the road passersby would see what looks like road signs growing into flowered hills of changing colors. People tend to be fond of hilly landscapes and "Bloom" mimics this idea with the use of color and structure. The color is visible both during the day and night, which is ideal for highway art installations. As the structures get larger some of them have the flexibility to move in the wind like a flower. This provides a different type of visual experience.

Change

"Bloom doesn't change over time, but as the gateway at an airport it serves as something stable and welcoming to those returning to Houston. For those leaving, they know they can count on "Bloom" to be there when they get back.

Size/Distance/Placement

As a large scale project, "Bloom" can be seen from a distance as the vehicle is approaching. As one gets closer they can see that they're actually going to be passing through the art as it is located on both sides of the road and in the median making one feel encompassed by the growing hills. Vehicles traveling in both directions get to experience the wonder of "Bloom". Because of how Bloom steadily rises, it feels as though it is actually growing and moving. The change of heights in the structures allows passersby to see the installation at all times while passing through.

Sustainable Benefits

There are no environmental sustainable aspects of "Bloom".

Relevance

This project demonstrates the creation of large scale art along a vehicular corridor. "Bloom" isn't just a piece to look at, but an experience that one travels through by vehicle. It mimics real life experiences and allows those traveling to experience it at all times of the day. As a unique project, it is unexpected in the highway landscape, keeps people's interests, and creates an unusual experience.

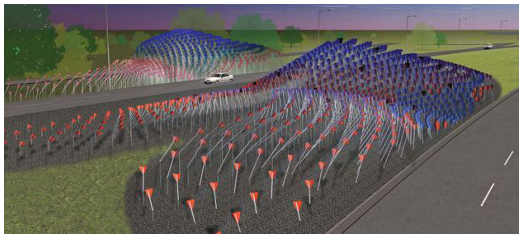


Fig. D.1 Bloom Strategy: "Bloom" moves with the wind, grows with distance, and evolves with color.

Fig. D.2 Color Pop: The bright colors of "Bloom" pop in the darkness of the night.

Fig. D.4 Bloom Plan: The highway cuts directly through the installation allowing for a unique visual experience for passersby.

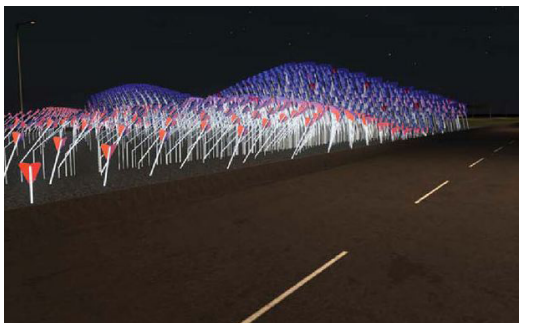


Fig. D.3 Color Change: The shape of "Bloom" mimics the beauty of hills through changing heights of the structures. The color change is reminiscent of light and shadow in the landscape.

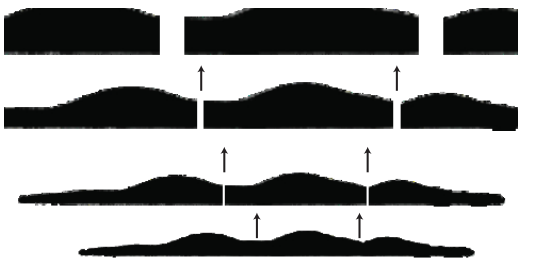


Fig. D.5 Bloom Section: From afar, "Bloom" looks to be like one solid object. As one moves forward, the object splits apart until one is finally encompassed in the art.

“Elastic Plastic Sponge”

The “Elastic Plastic Sponge” was designed by students from the Southern California Institute of Architecture in collaboration with Ball-Nogues Studio for the 2009 Coachella Valley Music & Arts Festival. It was created using “cells” as a flexible, glowing structure that could be transformed into different shapes to create different types of rooms. It also served as a refuge from the sun with shade and misting elements.

Aesthetics

Each cell contained a fluorescent tube that glowed purple at night. The bright lights reflected off of the cells to create different intensities of light. Because the structure was so large, the size and lighting made it possible to be seen from far across the grounds sparking curiosity and drawing people in.

Change

The sponge could be changed into a new shape at any time due to the ease of its flexibility. When it was set up at festivals people could come back at a different day of the week to see how the sponge had changed and what new rooms had been created. Due to the size of the sponge, change could be seen from a distance. It was also a traveling piece so many people had the opportunity to see it in its different forms.

Size/Distance/Placement

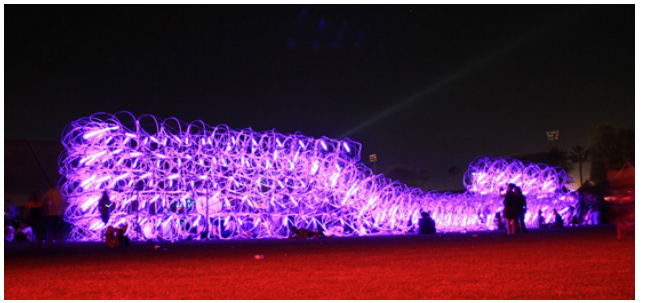
The sponge was comprised of 250 cells with each cell reaching a height of around four feet. The size of the sponge changed from time to time as the shape changed, but overall it was a very large structure with several rooms.

Sustainable Benefits

There was no solid form of environmental sustainability in this installation.

Relevance

The sponge was a great project that utilized the idea of transformation. Incorporating a piece like this into the rail experience would keep commuters from getting bored from day to day. It would also create jobs because someone would have to design and shape the piece into something new.



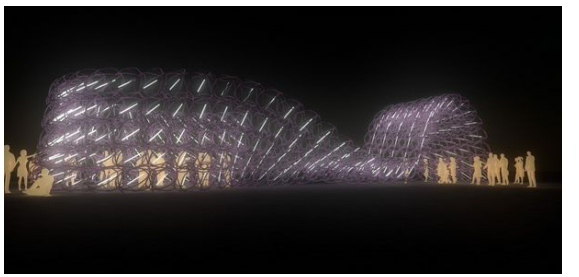


Fig. D.8 Views of the "Elastic Plastic Sponge".

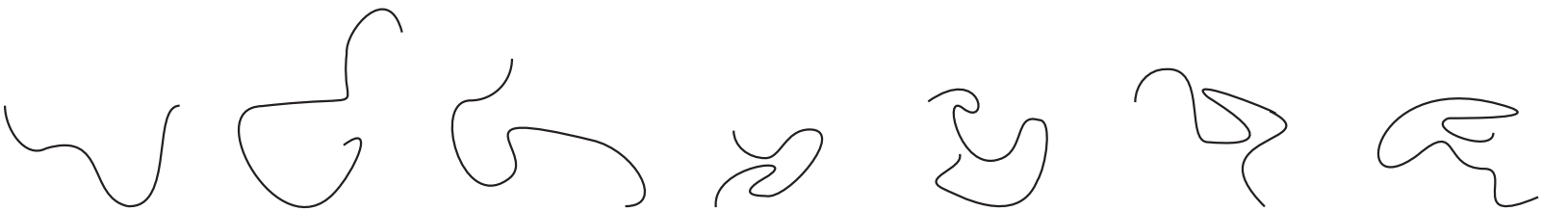


Fig. D.9 Daily Change: The sponge could be changed with ease at any time. This way viewers could see the art transform throughout the week or month. The transformations kept people from getting bored with one piece of art.

“The Enchanted Highway”

“The Enchanted Highway” is a thirty-two mile stretch of highway that runs from Regent, North Dakota up to Gladstone, North Dakota. Sculptor Gary Greff built seven, large sculptors from scrap metal and has displayed them along this stretch of highway. It started in 1991 as an attempt to bring in traffic to Regent. It has grown over the years, and now it serves as a visual work of art for those driving along the highway.

Aesthetics

These sculptures are very audience specific, which seems to be more of the farming community. However, the large scale of them is quick to grab attention and get people talking.

Change

The sculptures have no changing elements, although there has been talk of adding new sculptures. Sculptures have been added over the years, so for those who visit occasionally, they may expect to see new pieces.

Size/Distance/Placement

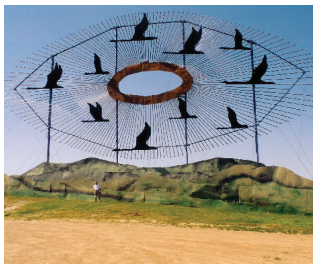
The sculptures range in height from 12’ up to 110’ and in length from 20’ to 154’. These are very large sculptures that can be easily seen from the road. They all sit at varying distances from the road, but there doesn’t seem to be a pattern between the size of the piece and the distance from the highway. Gary does not seem to have used any sort of organizational pattern to create different types of visuals that can be seen through motion.

Sustainable Benefits

There is no environmental sustainable benefit, but there is an economic drive coming from these sculptures. Passersby become curious about the art and then bring business into Regent. The use of scrap metal in the construction of these pieces is a prime example of recycling and relieves the environment of negative effects.

Relevance

Large art installations in a series along a transportation corridor spark curiosity and attract people to certain areas. The large pieces really attract attention and are memorable enough to tell people about. However, distance also is a key component in how the viewer sees the art.



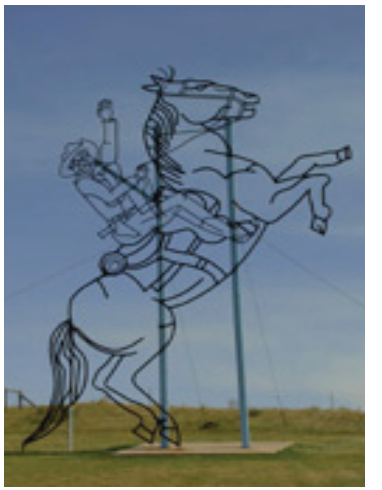


Fig. D.10 Enchanted Highway Installations: Images of each metal sculpture found along "The Enchanted Highway".

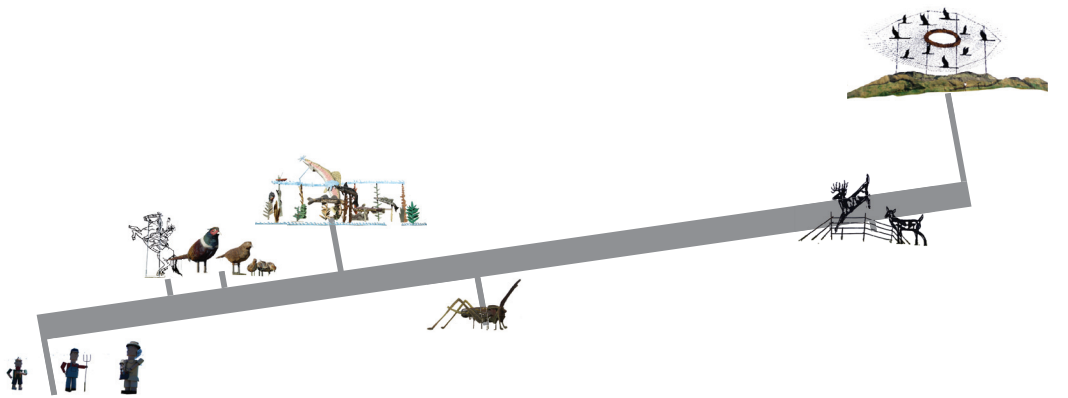


Fig. D.11 Installation Placement: The distances of each piece from the road vary, but do not seem to have any real pattern in relation to size.

“Running Fruit Ladders”

The “Running Fruit Ladders” is a highway art installation occurring along four different stretches of highway in the Columbia River Gorge. Artist, John Maher, came up with the idea to celebrate small farms, give a different light to a utilitarian object, create curiosity, and add variety to the highway scene for passersby.

Aesthetics

By adding brightly colored paint to the normally brown ladders, people see the ladders as a fun and playful art rather than boring ladders used in orchards. The colors are also an easy way to grab attention of passersby.

Change

While there is no changing aspect of the ladders, the occurrence of them in four separate areas in places without any art installations, these come as a delightful surprise while driving down the highway.

Size/Distance/Placement

The ladders are of varied sizes large enough to see from a distance and are placed amongst small rolling hills, which creates implied hills that mimic the landscape. Due to their close proximity to the road, the varied sizes, the hills, and the ladders set in a relatively straight line, a passerby gets the sense that the ladders are moving along with them in a running motion. This also means the ladders will blur by due to the speed of the vehicle, but because they run for 1/2 mile, passersby can see the oncoming ladders moving towards them.

Sustainable Benefits

There is no solid form of environmental sustainability concerning the natural environment, but the celebration of small farms brings farmers and their families together. Perhaps seeing the fruit ladders along the highway, passersby will stop by neighboring orchards and help stimulate the local economy.

Relevance

As a form of highway art, “Running Fruit Ladders” demonstrates how color, position relative to topography, height change, and the use of unexpected objects can delight and entertain passersby.

Fig. D.19 Running Fruit Ladders Strategy: The bright colors grab passersby's attention, and the straight line, varied sizes, and the placement on hills creates a sense of running movement.

“The Sky is the Limit”

“The Sky is the Limit” is a very temporary project executed in September and October of 2011 and thought up by Carnegie Mellon University Associate Professor of Art, Kim Beck. The short phrases, “Everything Must Go”, “All Sales Final”, and “Space Available”, were written in the sky over Pittsburgh for two hours at a time on two consecutive afternoons. The writings also occurred in NYC with the phrases, “Now Open” and “Last Chance”. Beck saw these open ended phrases as poetic, and because they occur in an unusual place and disappear, curiosity is sparked in just about everyone who see it.

Aesthetics

The unusualness of this art installation is what makes it visually appealing. The sky is not the typical backdrop for art, so finding it there peaks people’s interest. The open ended phrases and placement of the words gets people talking about their view of the work. This also leave the interpretation of the words completely open to the viewer.

Change

As this installation is very temporary and disappears quickly, change is not necessary. The use of three separate phrases is enough variety for each one hour session. However, because the installation occurs two afternoons in a row, variety would be better served if the sky writing occurred with days between writings.

Size/Distance/Placement

Each phrase is written a mile above the ground in very large writing. This allows for people all over Pittsburgh to see the writing. These phrases are also found in the newspaper creating a connection to the skywriting, which gets people thinking and making connections.

Sustainable Benefits

There are no environmental sustainable aspects of this art installation. However, if different words were used or perhaps advertisements for specific places were written, the unlikely presentation would evoke curiosity and attract people to these places, stimulating the local economy.

Relevance

Finding words or other types of art in unlikely places really sparks curiosity in people who see the art. People tend to be more interested in things that are unexpected. Words planted into crops or other plant life could be a way to implement words into unusual places along the commuter rail.

Fig. D.20 Contrast: The contrast of the smoke and the sky makes the words stand out even more than just the unusualness of the location.

Fig. D.21 Natural Blend: "Available" almost blends into the cluster of clouds and almost looks to be a part of the sky.

Fig. D.22 Messages: Alternating in phrases that mean something or tell you something still count as art, grabs people's attention, and accomplishes something.

“Storm King Wavefield”

“Storm King Wavefield” designed by Maya Lin was implemented in 2009 at the Storm King Arts Center in Mountainville, NY. This was a reclamation project of an abandoned gravel pit. Lin designed seven rows of waves constructed of soil and native grasses that covers a four acre site. (Maya 2011)

Aesthetics

The waves mimic a natural occurrence in an abstract way using the natural elements of soil and grasses. Seeing the shape of waves modeled into the ground is such an unusual thing to see, which is why it captures attention of visitors. Viewers have the option to view the waves as a whole or to walk through and atop the waves. Both options provide very different experiences of the waves.

Change

The waves don’t change, but because they are not in a place to be seen everyday by commuters they don’t become monotonous. The natural elements are what makes the waves feel like they have changed. The variation in the sun creates different shadows and seems to shape the waves with its rays. Light snow falls also creates different shapes and movement.

Size/Distance/Placement

“The waves range in height from ten to fifteen feet, with a trough-to-trough distance of approximately forty feet” (http://www.mayalin.com/). These sizes are very relatable to ocean waves. The size of the waves feel very different to people who view the waves as a whole in comparison to those who immerse themselves in the field. The placement of the Wavefield with the backdrop of large, rolling hills is quite poetic. The scale difference between the two brings even more intensity to the waves. Also, the changing of leaves on the backdrop of trees provides a changing visual experience.

Sustainable Benefits

The soil used to make the waves came directly from the site. The grasses that cover the waves are all native grasses that require minimal maintenance. Lin also designed a natural drainage system beneath the waves. Also, the carbon footprint of the construction was offset with the planting of 260 indigenous trees. (http://www.mayalin.com/)

Relevance

This project demonstrates the creation of art using natural elements with inspiration from natural occurrences. The unusualness and affects of the seasons is what really captures attention. Viewing a piece like this in motion could make the viewer feel as if the piece is actually moving along with them.

Fig. D.23 Wave Scale: Immersing oneself in the wavefield changes the entire scale of the project.

Fig. D.24 Motion Parallax: If this were implemented along a transportation corridor, the waves would look as if they were moving.

Fig. D.25 Natural Effects: The change of seasons and position of the sun have different effects on the visual experience of the waves.