



Wayne County Connector



Table of Contents



Feasibility Study Navigation Guide

Page Reference Within Each Section

General Section Title



Section i. Table of Contents	
Section ii. Acknowledgments	
Section 1. Introduction	
Introduction	1-1
Location	1-2
Study Area Limits	1-3 & 4
Project Background	1-6
Benefits of Pathways	
Section 2. Project Overview	
Project Scope and Planning Methodology	2-1
Section 3. Summary of Public Outreach Efforts and Meetings	
Public Outreach	3-1
Open House Summary	3-2 & 3
Comment Forms and Analysis	3-4 to 3-10
Section 4. Corridor Inventory and Analysis	
Corridor Analysis and Inventory	4-1
SR 24 Use Analysis and Alignment Concepts	4-2 & 3
SR 12 Use Analysis and Alignment Concepts	4-4 & 5
Section 5. Environmental Overview	
Environmental Scan Summary	5-1 & 2
Environment Overview - Figure 1	5-3
Environment Overview - Figure 2	5-4
Environment Overview - Figure 3	5-5
Wetland Delineation Memo	5-6
Section 6. Preferred Alignment	
S.R. 24 Preferred Alignment	6-1
S.R. 12 Preferred Alignment	6-2
Preferred Alignment Segment Descriptions	6-3

Section 7. Phase One Recommendation	
Recommended Area for Phase One Construction	7-1
Section 8. Initial Pathway Phase Design Options	
Implementation options for Phase One improvements	8-1to 8-3
Design Option 1 - Bike Lanes with Offset Sidewalks	8-4
Design Option 2 - Offset Shared Use Path	8-5
Design Option 2 - Shared Use Path	8-6
Wetland Crossing Design Options	8-7
Section 9. Phase One Preliminary Pathway Engineering Design	
Design options considered in initial high priority segment	9-1 & 2
Project Design Criteria	9-2 & 3
Phase One Preliminary Design Engineering Exhibits	9-4 to 9-14
Typical Section Illustrations	9-15
Preliminary Cost Estimate Summaries	9-16 to 9-19
UDOT Letters of Support and Project Review	9-20 to 9-21
Section 10. Pathway Facility Recommendations	
Identification of Pathway Support Facilities	10-1
Section 11. Preliminary Theme and Signage Recommendations	
Thematic Elements for Overall Pathway Branding Efforts	11-1 to 11-3
Signage Typology, Style and Materials Recommendations	11-3 to 11-5

Date:8/15/2013

Section i

Table of Contents

Torrey Segment Wayne County Connector



Dedication

This study is dedicated to the citizens of Wayne County that assisted in formulating the initial concept for a bicycle and pedestrian pathway system and to the elected Wayne County officials and staff members that then moved the community vision for this pathway toward implementation.

Additionally, this document is also dedicated to all those that attended the community open house workshops as well as those individuals that provided valuable input throughout the process.

Date: 8/15/2013

Section ii

Acknowledgments

Torrey Segment Wayne County Connector



Acknowledgments

The completion of this study would not have been possible without support from the Wayne County Commission, the Six County Association of Governments, the Mormon Pioneer National Heritage Area, and the National Park Service's Rivers, Trails and Conservation Assistance Program. We extend our thanks to the staff members of the supporting organizations for sharing their insights, knowledge, and experiences.

Recognition is extended to the following individuals who provided ideas, guidance, oversight, and critical review during the completion of this document

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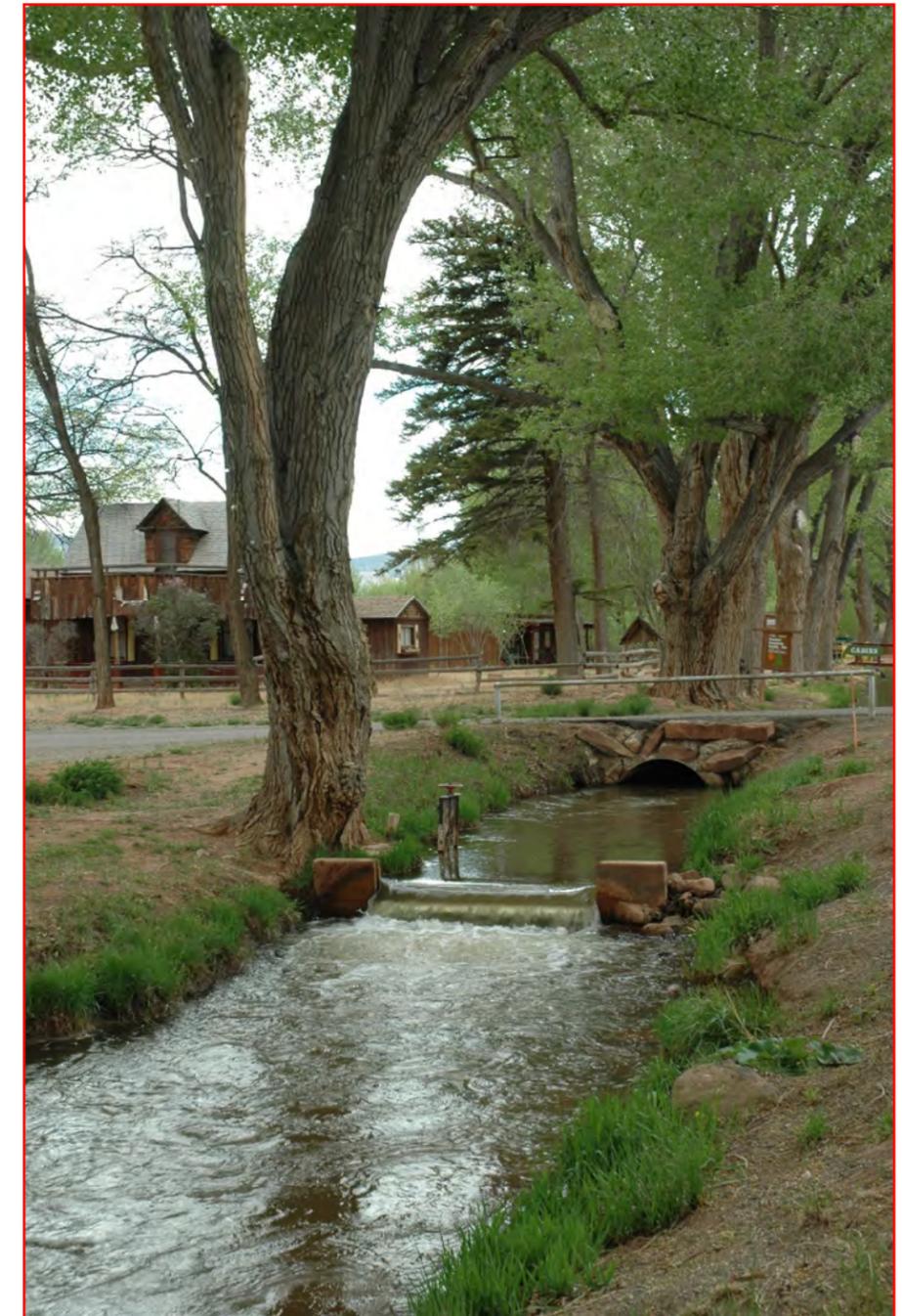
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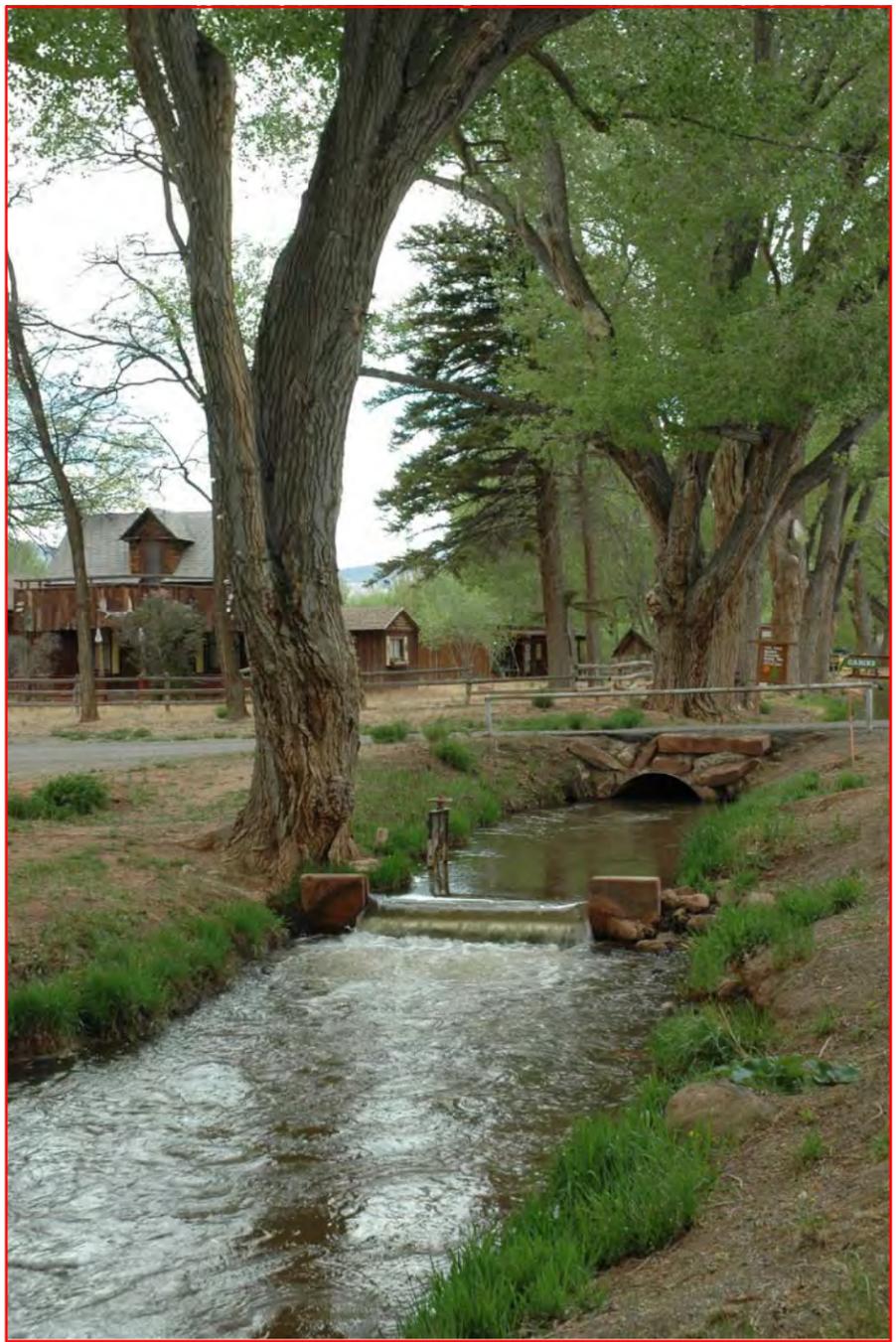
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Lochner

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Introduction

Wayne County desires to develop a pathway system to meet the current and future non-motorized transportation needs of its communities. There are three over-riding goals for this undertaking that drive the current emphasis in planning this system. These goals are:

- 1. Increase the general safety of bicyclists and pedestrians along the roadways and within the individual communities.
- 2. Improve the quality of life for the citizens of Wayne County by increasing the transportation choices available to them.
- 3. Encourage economic development through recreational facilities, such as a non-motorized pathway, that support local businesses and increase tourism opportunities beyond the current offerings.

To these ends, the County Commission and its partners in community development, have dedicated initial funding and staff support to the planning and design effort for this project. It has been designated as the Wayne County Connector due to its ability to encourage further connectivity between the communities along the corridors of State Road 24 (SR-24) and State Road 12 (SR-12) with the initial phase of the system centered around the Torrey area of the County. This initial segment represents a study area of approximately 10.3 miles.

The long-term objective is to build a pathway system to connect communities and towns (Fremont, Loa, Lyman, Bicknell, Teasdale, Torrey, and Grover) and provide access to public lands (Dixie and Fishlake national forests, Bureau of Land Management [BLM] land, and Capitol Reef National Park). This system, when completed, will result in approximately 35 miles of trails accessible to bicyclists, walkers, joggers, and families for recreational and transportation uses. It will complement the existing trail facilities in the County such as the Great Western Trail that currently accommodates motorized off-highway vehicles, horses, hikers and mountain bikes.

The highest priority segment of the pathway network has been identified in the area around Torrey. Torrey currently serves as a 'gateway' community to Capitol Reef National Park and the Scenic Highways that converge at the town's Eastern border. Referred to as the "Torrey Segment," for the purpose of this study, the segment is generally located along SR-24 from Teasdale Bench Road (approximately MP 66.5) to the Best Western Capitol Reef Resort/Rim Rock Patio (approximately MP 71.8), and along SR-12 from the junction with SR-24 (approximately MP 123) to North Slope Road (approximately MP 118).

Wayne County executed a contract with Psomas to conduct a feasibility study for the Torrey Segment to identify the best route possible for the pathway giving consideration for elements such as safety, origins and destinations, stakeholder input, property ownership, terrain, geometric constraints, environmental resources and constraints, and cost. Lochner, a subconsultant to Psomas, provided public involvement management, environmental oversight, preliminary engineering design, and cost estimating.

This Pathway Feasibility Study represents the summary of the initial stages of analysis and design for the project. It also outlines the next steps that will be necessary for the further development of the initial phase of the pathway system.

Project Sponsors:



Wayne County
Six County Association of Governments,
Mormon Pioneer National Heritage Area,
National Park Service's
Rivers, Trails & Conservation Assistance Program

Date: 8/15/2013

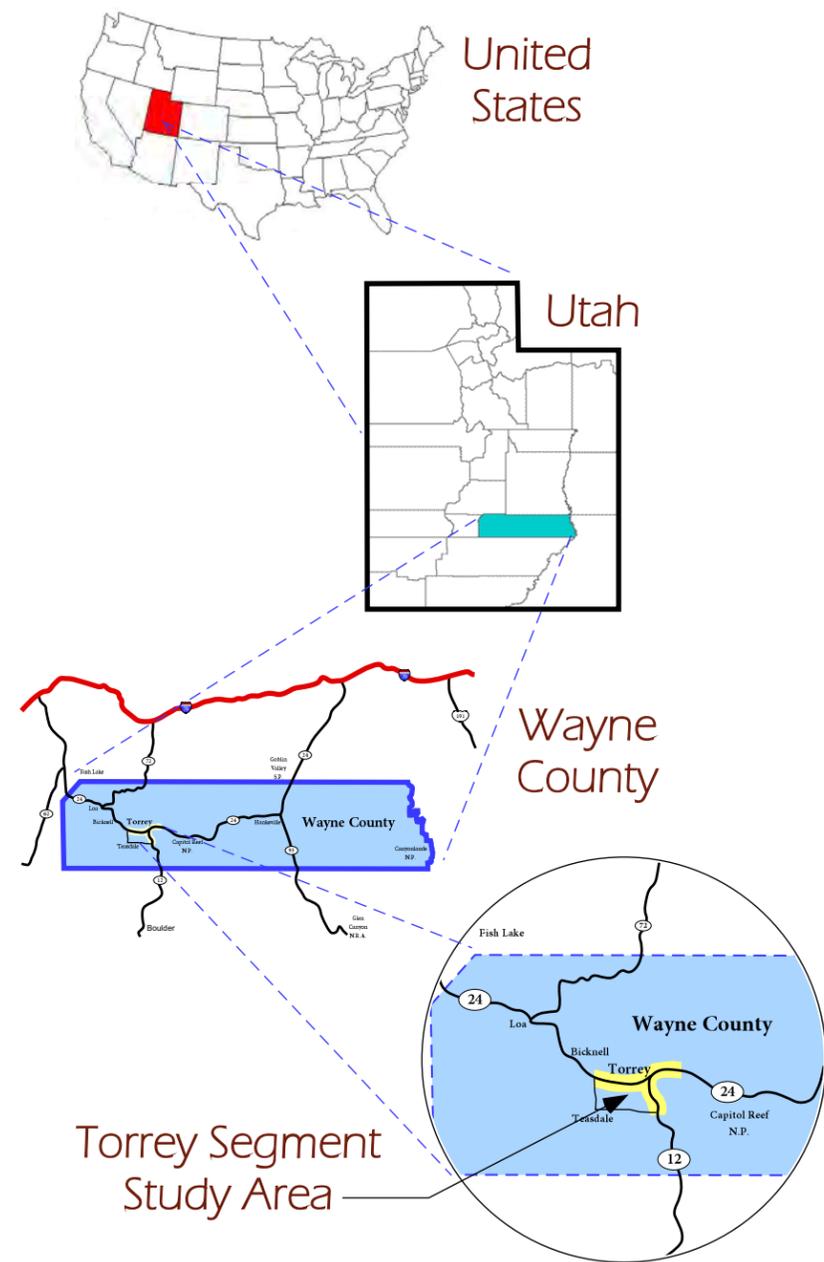
Section 1

Introduction

Torrey Segment Wayne County Connector



1-2-a Location Map



Project Location

The Wayne County Connector is located along the central State Highways that run through the heart of Wayne County in south central Utah. State Road 24 runs in an east-west direction through the County connecting the majority of the communities that represent the population base of the County. An additional segment of the proposed pathway continues along State Road 12 in a southerly direction. SR-12 continues on past the project's termination point and connects to the town of Boulder, Utah eventually connecting to Escalante, Utah and then to Bryce Canyon National Park.

The illustrations on this page illustrate the national, regional and local context in which this pathway is situated.

Study Area

The specific study area boundary encompasses a 5.4 mile segment along the SR-24 right-of-way beginning at the Teasdale Bench Road intersection at the western boundary. It then crosses the Fremont River and runs through the town of Torrey's central business district and continues through the SR-12 Intersection until terminating at the existing hotel and restaurant developments in the area known as Rim Rock at the eastern end of the corridor. It should be noted that the study area does not connect with the boundary of Capitol Reef National Park at this time but may be extended in the future to bring about a non-motorized connection to the Park in conjunction with National Park planning efforts.

The second leg of the study area begins at the intersection of SR-24 and SR-12 and proceeds southerly along the right-of-way of Scenic Byway 12 for a distance of approximately 4.7 miles. This segment of the pathway currently terminates at the intersection of Teasdale Road and SR-12.

An additional dimension to consider in recognizing the importance of the Torrey Segment as the initial piece of the pathway network is to consider the significance of terminating this phase of study at these specific intersections. With these points of connection to the pathway network it is possible to then utilize the two County roadways to complete a 17 mile travel loop that passes through the town of Teasdale and back to the study corridor. These two roadways can accommodate bicycle touring along scenic, low traffic volume, local roads.

While the study area is well defined along a linear route, the width of the area has not been defined. Due to the topographic challenges, safety considerations and the potential for a more scenic route that meanders away from the roadway alignment, the width of the corridor and the eventual location for the pathway remains open for further investigation and study in subsequent design phases. This is particularly true along the S.R. 24 corridor between the Sky Ranch access drive and the Rim Rock area. Selected areas along S.R. 12 may also require the study of additional areas outside of the UDOT right-of-way.

The maps on the following pages illustrate the current study area for the Torrey Segment of the Wayne County Connector pathway in greater detail.

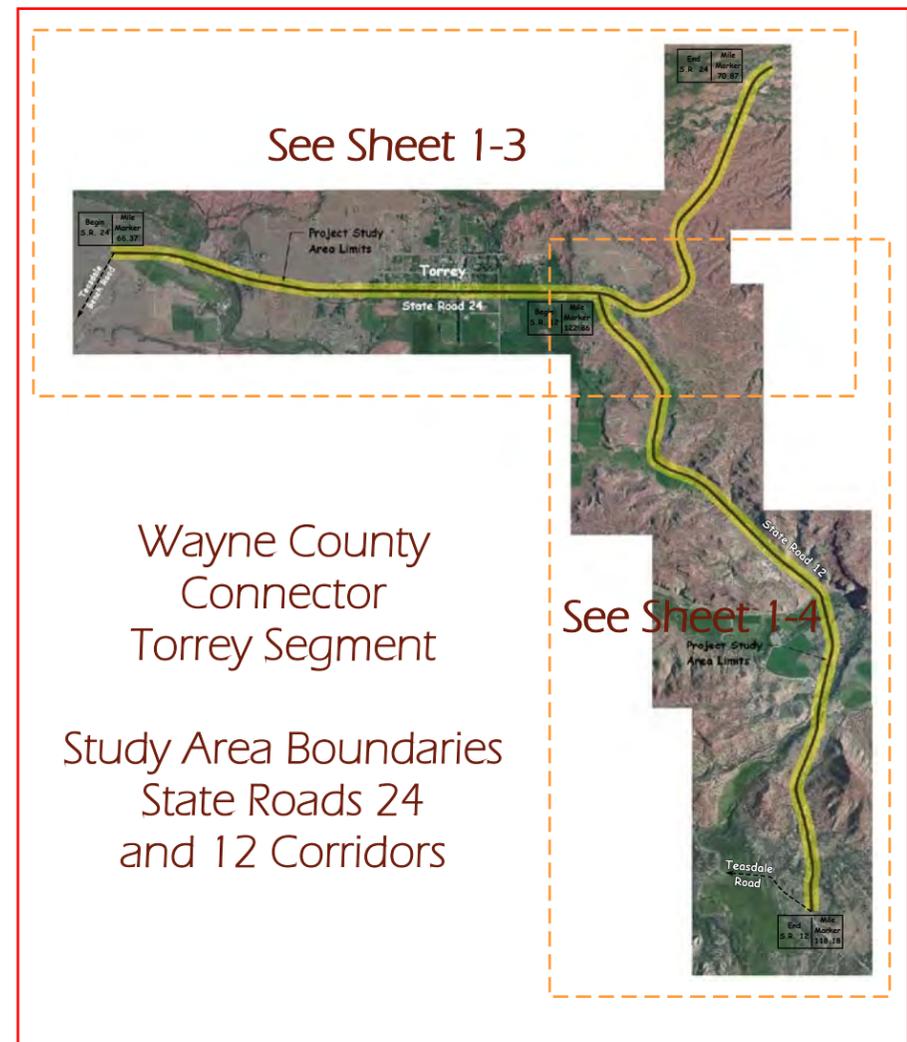


Image 1.2-b - Study Area Boundary Exhibit Key

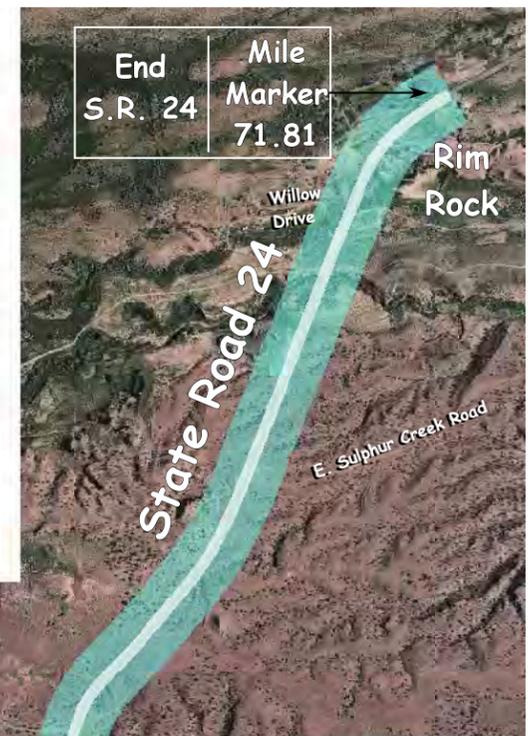
Project Location

Torrey Segment Wayne County Connector



Project Location - S.R. 24

This map section illustrates the study area corridor for the Wayne County Connector located along State Road 24. The corridor runs in an east-west direction beginning at the intersection of Teasdale Bench Road and proceeds in an easterly direction along both sides of the highway right-of-way. The study area passes through the Main Street area of Torrey, Utah and continues past the intersection of S.R. 12 until it reaches the termination point of the study at the restaurant and hotel developments known as the Rim Rock area.



Study Area Limits State Road 24 Corridor

Date: 8/15/2013

Section 1

Study Area Limits - SR 24

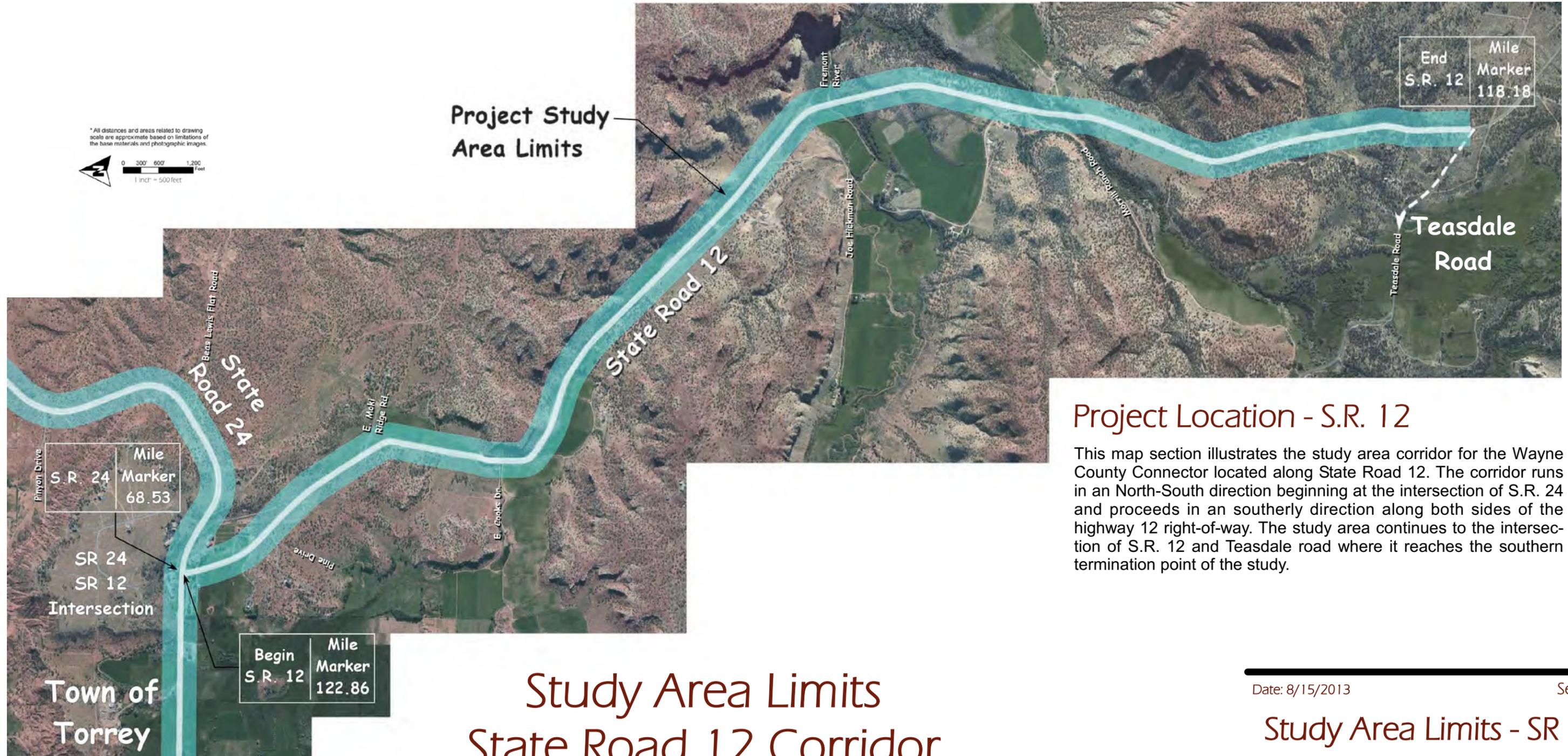
Torrey Segment Wayne County Connector



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*All distances and areas related to drawing scale are approximate based on limitations of the base materials and photographic images.

Project Study Area Limits



Project Location - S.R. 12

This map section illustrates the study area corridor for the Wayne County Connector located along State Road 12. The corridor runs in an North-South direction beginning at the intersection of S.R. 24 and proceeds in an southerly direction along both sides of the highway 12 right-of-way. The study area continues to the intersection of S.R. 12 and Teasdale road where it reaches the southern termination point of the study.

Study Area Limits State Road 12 Corridor

Date: 8/15/2013

Section 1

Study Area Limits - SR 12

Torrey Segment Wayne County Connector



Project Background

The Wayne County Connector, non-motorized, pathway project began as an idea generated by a group of county residents working in conjunction with the Wayne County Business Association. Together they had an interest in furthering alternative modes of travel within the County beyond the automobile and the off-highway vehicle. They recognized the benefits to the community of a pathway that was designed to remove pedestrians and casual bicycle traffic from the area's roadways for reasons safety, recreation, public health and increased choices with respect to mobility. To begin planning for a pathway, the Wayne County Business Association and subsequently the County applied to the National Park Service, Rivers, Trails, and Conservation Assistance (RTCA) Program for planning assistance. That assistance was granted to the applicants in 2011 and 2012. The RTCA program provided planning assistance, partnership development, and meeting facilitation to the Wayne County Business Association, the County, and the citizen backed partnership. In 2011, the County Commissioners formed a trail committee comprised of: Wayne County, Six County Association of Governments, Torrey City, Bureau of Land Management, Capitol Reef National Park, RTCA, United States Forest Service, Scenic Byway 12 Foundation, and Utah Department of Transportation (refer to the organization chart - left).

The pathway committee developed the following Vision Statement:

"Through a partnership with land managers provide a safe and convenient system of bicycle and pedestrian pathways that establish alternative non-motorized transportation as a viable option to connect communities to public lands for residents, tourists, and visitors of Wayne County Utah."

Through a collaborative effort, the partnership established five primary goals including:

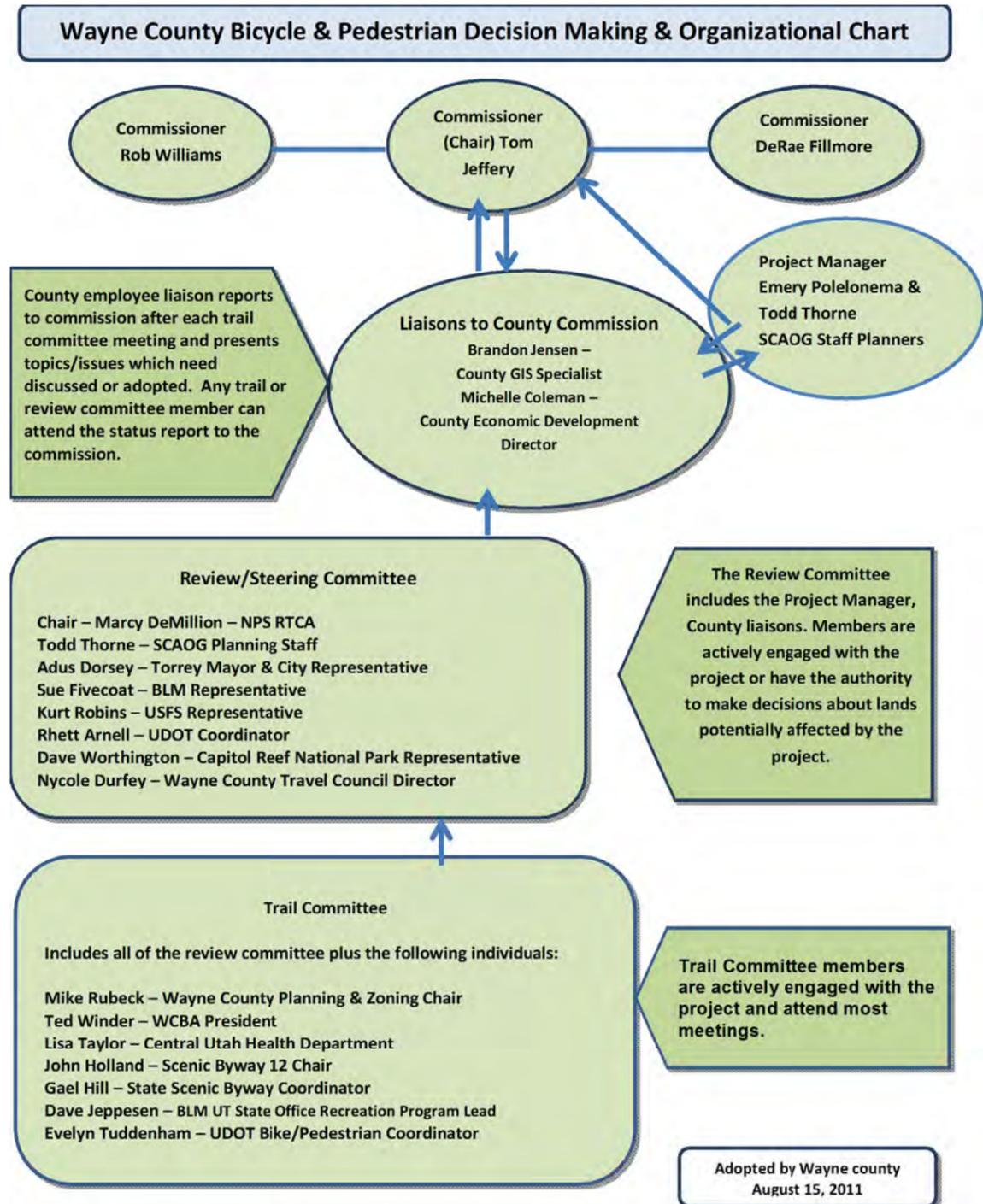
1. Increase and support community connections
2. Facilitate alternate routes for safe travel
3. Promote healthy life styles through the use of the pathway and integrate with programs that promote wellness
4. Promote alternative non-motorized transportation by creating a pathway system that is safe and connects to existing trailheads within Wayne County
5. Accommodate added options for visitors and tourists in an effort to promote economic development

These goals translated into a focus on improved safety, enhanced quality of life for County residents, and support for expanded economic development that governed the design efforts of the project team. The goals are all supported in this initial design and engineering study.

The efforts provided by the pathway committee continued after the project Vision and Goals were finalized resulting in this Feasibly Study Report. Additional funding for this study was provided by the Mormon Pioneer National Heritage Area and Six County Association of Governments.

Project Background

Torrey Segment Wayne County Connector



Wayne County Connector Adopted Organizational Chart



Benefits of Pathways and Trails

The benefits that can be derived from an interconnected network of pathways and trails can be found in three specific areas. These include public health, economic development and enhanced community value. All of these areas have been studied and the benefits documented in a variety of settings and climates throughout the United States. The research is extensive enough that no one source document can, or should be singled out. With that in mind, an excellent resource for data can be found on the National Trails Training Partnership website (<http://www.americantrails.org/resources/benefits/index.html>) that is hosted by the American Trails organization (www.americantrails.org). These websites represent an excellent clearinghouse for information related to the community benefits that can be derived from implementing a pathway system.

Health Benefits

A system of convenient and safe pathways within a community provides encouragement to substitute walking or biking for everyday activities. Safe pathways allow local members of the community to leave their car parked at home or at work while completing basic errands or neighborhood visitation. This simple act of increasing your physical activity by just 15 to 30 minutes per day increases your general health and well being.

The same benefits can be derived by tourists and visitors to the Torrey area by utilizing the pathway to travel between lodging and dining locations within the pathway corridor. A well planned pathway will allow safe travel between destinations, away from the traffic on local, county roads and state highways.

That safety aspect of traveling along a multi-use pathway that is separated from the travel lanes of the roadway is an important factor when considering the benefits to public health and well-being.

Economic Benefits

Communities that have built pathway networks have seen increased levels of business and tourism investment as well as an increase in real estate values due to the positive impact that the pathway system has on their community. Wayne County and the town of Torrey serve as gateway communities to the National Park system in Utah. They are a direct gateway and service center for tourists visiting Capitol Reef National Park as well as an area visited by tourists traveling between all of the State and National Parks in southern Utah. As world travel becomes more and more problematic due to political tensions, the United States has become a prime destination for US citizens, as well as visitors from other nations, to explore. Our National Park system and the western United States in general has seen an increase in tourism over the past decade.

The annual number of recreation visitors to Capitol Reef National Park has increased from 525,646 visitors in 2002 to 673,345 visitors in 2012. This represents a 28% increase in the past decade. While less than 6% of these park visitors camp in the park, it is safe to assume that a much larger portion of the remaining 632 thousand visitors are staying in hotels and campgrounds in the Torrey area of Wayne County. Each of these visitors represents an economic gain through lodging, food and miscellaneous purchases in Wayne County. A pathway system that links key destinations and offers safe and convenient travel between those destinations encourages visitors to stay in the area longer and come back more often.

This aspect of tourism further encourages new businesses to open that support tourism while providing increased employment for local residents.

Community Lifestyle Enhancement

The third beneficial aspect of a successful pathway system is directed at the local community itself. Residents in the area not only benefit from the health and economic benefits stated above, they also enjoy a greater pride in their community. As visitors stay longer and view the area in a favorable manner, local residents will often enjoy an appreciation in real estate values and other benefits that come from living in a desirable community.

The pathway network will allow residents the ability so safely move about the community in a manner that encourages social interaction. Local children can use the pathway to visit friends and recreation facilities. The safety of the pathway and the increase in social interaction will often strengthen the bonds within the community.

It has often been said that you can measure the success of your community by asking a simple question, "Is this a place that I would visit when planning a vacation?". Everyone has fond memories of a favorite vacation and we are usually too busy to evaluate the community that we live in from this perspective. For the residents of Wayne County they need only look to the favorable increase in tourism each year to answer this question.

As a pathway system is viewed as a favorable amenity by visitors to the area, it can also be viewed by residents as another community asset that makes Wayne County a destination worthy of a vacation - even if you are a local resident.

Pathway and Trail Facts

The Adventure Cycling Association (www.adventurecycling.org) has mapped 41,399 miles of bicycle routes within the continental United States. These trails and pathways form a cross country network that allows long distance travel by bicycle from coast-to-coast. (see figure 1-6-a).

Economic benefits that have been reported at the State level include the following:

Wisconsin	\$534M from out-of-state tourists
	\$1.5B from all bicycle related tourism
Minnesota	\$427M for recreation bike activities
Colorado	\$200M for summer biking in ski country
N. Carolina	9-times return on bicycle infrastructure

Figure 1-6-a



Numerous western communities have been very successful with boosting tourism activities based on investments in multi-use pathway networks. Communities with substantial pathway networks include:

- | | |
|---------------------|--------------------|
| Sun Valley, Idaho | Boise, Idaho |
| Vail, Colorado | Park City, Utah |
| Teton Valley, Idaho | Cache County, Utah |

These pathway networks are now seen as one of the major reasons to visit and vacation in these communities.

Date: 8/15/2013

Section 1

Benefits of Pathways

Torrey Segment Wayne County Connector



Bike Tourism Demographics

The demographics related to current trends in bicycle based tourism continue to evolve into a more advanced economic advantage to the host community. Long gone are the days where people on bicycles tended to be lower from a lower age group (18 - 25 year olds) with little or no interest in accommodations beyond a public campsite or a wide spot along the trail.

Adventure Cycling reports that today's bicycle focused tourist tends to be highly educated with a higher level of discretionary income and a desire for comfortable lodging at the end of the day. They will often seek out resort lodging as their "base camp" from which they will spend a longer period of time in any one location while they utilize the local pathway network to explore the sights and culture of an area.

This demographic will, on average, spend more per day in the immediate community than automobile reliant travellers. Their current average spending exceeds \$100 per day per person including expenditures on lodging, food, entertainment and tours and bicycle accessories or repairs. This total is up from \$60 per day in 2005.

The sweet spot is in the 50 to 64 age group which accounts for 43% of the increased spending. They have less impact on the environment or local services and are often drawn to an area based on the potential for 'Green' travel.

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Image 2.1a - Scenic Landscape Character of the Torrey Area

Project Scope

The scope of this feasibility study was to evaluate the roadway corridors for SR 24 and SR 12 centered around the Torrey area of Wayne County and to present recommendations related to the type of pathway that could be constructed and the general location of that pathway with respect to the UDOT right-of-way. The main focus of the evaluation was to define a pathway that would accommodate non-motorized transportation with a system that was safe for users of all levels. It was recognized that serious road bike enthusiasts would, in all probability, continue to use the paved roadways for travel throughout the area. The pathway was intended to serve the majority of hikers, pedestrians and recreational or casual bike riders that either live in the community or were in Wayne County as tourists.

The three primary considerations in identifying a suitable pathway location were as follows:

1. **Safety** - the pathway needed to be sheltered from traffic wherever possible. conflicts between pathway users and motorists needed to be minimized or mitigated as much as possible.
2. **Economic Development** - the pathway needed to support the tourism industry and encourage users to spend more time within the County before moving on to another destination.
3. **Lifestyle Enhancement** - the pathway should be useful to County residents while not intruding on their current style of living. It should be seen as a community asset as much as an economic development tool.

Additional considerations included providing connectivity to existing trails, such as the Great Western Trail, providing value for the taxpayer dollars that would be committed to the design, implementation and maintenance of the pathway network and protecting private property rights by utilizing public lands and right-of-way wherever possible.

The final study documents would include an overview of the need and public support for a pathway network, an analysis of the entire corridor with pathway type and location recommendations, and preliminary engineering designs for an initial phase of development. Additional tasks would evaluate the environmental issues that would need to be addressed in a final design document and develop some early prototypes for branding the pathway network and providing guidance on signs and pathway facilities.

Planning Methodology

The following methodology was utilized in completing the scope for the study.

1. Assemble all available background documents and mapping for the area
2. Establish a Steering Committee to provide oversight and review
3. Prepare Base Maps utilizing the County's GIS mapping capabilities
4. Tour the area with the Steering Committee and members of the community
5. Prepare Initial Analysis maps
6. Prepare Environmental Overview document for the corridor
7. Gather input from the community through an Open house information meeting
8. Prepare comprehensive analysis maps and identify an Initial Routing Plan
9. Meet with Steering Committee and the community to present initial concepts
10. Field verify Routing Plan for suitability for preliminary design
11. Refine the concepts based on reviews and community input
12. Prepare final routing concepts for the study area
13. Identify a Phase One development segment
14. Prepare alternative options for development of Phase One
15. Present Phase One options for review and comment
16. Prepare Preliminary Engineering studies for Phase One based on input
17. Prepare Final Feasibility Study Report



Image 2-1-b Scenic and Agricultural Character of Wayne County

Date: 8/15/2013

Section 2

Project Overview

Torrey Segment Wayne County Connector



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Image 3.1-a Existing Conditions Along Corridor

Conditions along the corridor, such as the limited clearance alongside the roadway where S.R. 24 crosses the Fremont River, were openly discussed during the corridor tour process. The discussion of this location resulted in identifying the option to utilize the old roadway bed and right-of-way ownership, placing the pathway in a safer location, in this critical stretch of the corridor West of Torrey.



Image 3.1-b Steering Committee Tour of Corridor

Corridor tours allowed for stops at key locations for the Steering Committee to discuss local conditions with members of the design team. Reviewing on-site conditions is essential in understanding the opportunities and limitations present within the pathway corridor.

The Public Outreach Process

An important part of the feasibility process included reaching out to the local community at various times for input and ideas related to the Wayne County Connector pathway project. The idea for this multi-purpose path was initiated at the local level and it was important to keep those stakeholders involved in the decision making process. Input was sought at various levels, including from the project's Steering Committee, County managers, landowners - both public and private, and from the community at-large.

This section of the report outlines the procedures utilized in soliciting input and comments related to the pathway project.

Steering Committee Meetings and Tour

The initial efforts at understanding the issues associated with the Wayne County Connector, Torrey Segment, involved meeting with the project's Steering Committee to discuss the history of the project and issues related to design and implementation. After initial meetings at the County Courthouse in Loa, Utah the design team managers and Steering Committee members toured the study corridors along State Roads 24 and 12.

Participants in this tour included representatives from Wayne County, the Town of Torrey, Six County Association of Governments, the National Park Service, the Forest Service, the Bureau of Land Management, and the Utah Department of Transportation. This group represented the wide variety of landowners and stakeholders along the corridor while each bringing a much needed professional perspective to the discussion.

This tour of the area was essential in identifying critical design areas of corridor where safety, right-of-way or pathway design were particularly challenging. The group stopped along the pathway to discuss issues related to natural features such as river crossings, wetlands and topographic limitations.

Highway related issues such as limited sight distances, roadway clearances along existing guard rails, and limited right-of-way widths that limited opportunities to locate the pathway within the properties owned by the Utah Department of Transportation were considered and discussed along the entire route. Discussions included concerns related to both current roadway conditions and UDOT's potential future needs within the right-of-way.

The results of this discussion and tour with the Steering Committee was documented in the corridor analysis maps that are included in this report. Extensive photographs were taken of the existing conditions and are represented throughout the Feasibility Study report. These elements were instrumental in identifying the options that were available for the pathway as well as completing the review process that resulted in the preferred pathway alignment that is included as Phase 1 in this report.



Image 3.1-c Evaluating Main Street Torrey

Main Street in Torrey was identified as a critical component of the first phase of design and construction for the pathway. Particular attention was given to the existing conditions of the area including the canal and the mature Cottonwood trees that are widely identified with Torrey's character and culture. Business interests, traffic flow, parking and pedestrian traffic patterns were all observed and evaluated as part of the feasibility and design process.

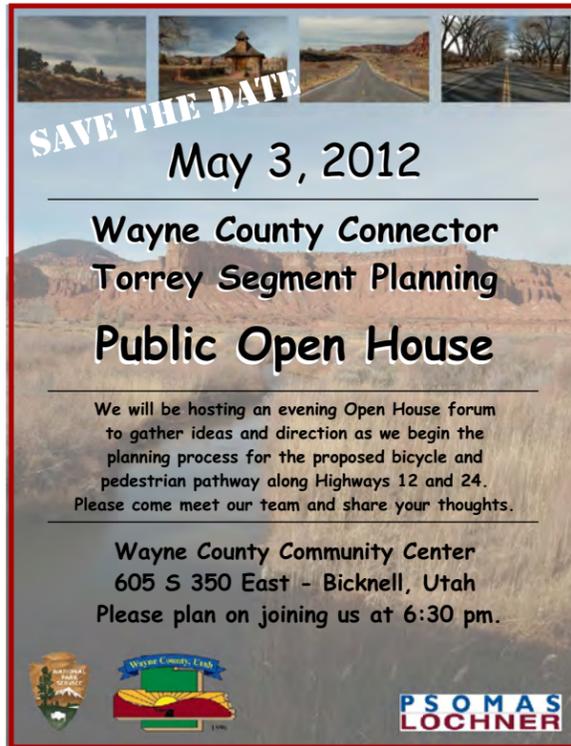
Date: 8/15/2013

Section 3

Public Outreach Process

Torrey Segment Wayne County Connector





SAVE THE DATE
May 3, 2012

**Wayne County Connector
Torrey Segment Planning
Public Open House**

We will be hosting an evening Open House forum to gather ideas and direction as we begin the planning process for the proposed bicycle and pedestrian pathway along Highways 12 and 24. Please come meet our team and share your thoughts.

Wayne County Community Center
605 S 350 East - Bicknell, Utah
Please plan on joining us at 6:30 pm.

Wayne County, Utah
PSOMAS
LOCHNER

Image 3-2-a Initial Open House Notice

Notices were prepared announcing the initial Open house for the pathway project. The meeting was organized by Wayne County staff and it was held at the Community Center in Bicknell.

Section 3

Date: 8/15/2013

Stakeholder Involvement

Torrey Segment Wayne County Connector



Open Houses

Two "Open House" meetings were held during the course of completing the study. The first of these sessions was held in Bicknell on the evening of May 3, 2012.

Open House No. 1

The purpose of this meeting was to seek input into issues related to the pathway, the alignment locations that were preferred by residents, and the type of use that could be expected along the path.

Those that attended the meeting were able to speak one-on-one with members of the design team as well as with Torrey and Wayne County representatives, including elected officials and senior staff. They were able to submit written comments and highlight their thoughts, ideas, and concerns on maps of the corridor alignment.

Comments received in this forum were generally positive about the concept for the project. Safety concerns for both pedestrians and bike riders was a common theme in the discussions that evening with most residents agreeing that the existing conditions along both roadway corridors are dangerous as currently configured.

Another common concern that received a lot of attention related to respect for private property rights along the pathway corridor. Many of the residents that attended the meeting mentioned the limited amount of privately owned property in Wayne County and the desire to not lose any more property to public uses or rights-of-way. Several private landowners that have property along the proposed pathway stated that they would be willing to work with the County to accomplish the goals of this project as long as it resulted in a limited intrusion on their property and a cooperative and inclusive discussion during the design process.

The third area of concern that was raised by a number of the participants related to funding for the pathway. The feeling expressed by those that raised this issue was that tax dollars are not to be wasted. This should not be a "gold-plated" project if it is built. The level of design and construction should be carefully measured with the final product meeting the needs of the community with respect to safety and convenience while respecting community values and minimizing long-term maintenance. Even those citizens expressing concern for the costs associated with the project generally expressed the need for the pathway on the basis of public safety.

In ending the meeting it was reported that the design team would be back to present preliminary design directions for the pathway and to solicit comments specific to those design decisions.



Image 3-2-b Community Open House Participants

Project managers and design team members were available to discuss important issues related to pathway function and location with members of the local community, including residents, business owners and land owners.



Image 3-2-c Community Open House

Using the community "Open House" format obtained a wide range of ideas and feedback while generating public support for the planning and design effort.



Image 3-3-a - Community Open House Participants

Project managers and design team members were available to discuss important issues related to pathway function and location with members of the local community, including elected officials, business owners, and land owners.



Photo - Adus Dorsey

Image 3-3-b - Project Managers and Design Team

The Open House was widely attended by the community. Steering Committee members and representatives from the Psomas | Lochner design team attended both meetings to explain the project and discuss options with community representatives. (Clockwise from top left) Sue Fivecoat - BLM, Marcy DeMillion - NPS, Gerry Tully - Psomas, Brandon Jensen - Wayne Co., Michelle Coleman - Wayne Co., Rhett Arnell - UDOT, Andrea Clayton - Lochner, Brook Oswald - Psomas, Carlye Sommers - Lochner. Photograph by Adus Dorsey.

Open Houses (cont.)

Open House Number 2

The second Open house occurred on the evening of August 23, 2012. At this community forum the design team had the opportunity to present the preliminary analysis of the opportunities and liabilities that exist along the pathway corridor. The presentation also covered the preliminary thematic graphics that had been developed for signage as well as potential color schemes that can be used in logos and branding of the Wayne County Collector pathway system.

A comment form was available for the public to express feedback on the progress to date and maps were used for residents to make comments related to specific pathway sections and alignments.

The following pages show the results received on the comment forms and specific comments that were listed.

Additional Field Review

After the second Open House meeting the design team returned to the corridor to compare the comments received with actual roadway conditions. This process resulted in a clear understanding of the site specific concerns or options that were raised by those that submitted comments in the meeting.

This process resulted in the completion of the overall routing alignment that was then reviewed by the Steering Committee and, eventually, submitted to the Utah Department of Transportations for review and approval.

Steering Committee Review

Throughout the process of preparing this report the Steering Committee provided oversight and review through meetings in Loa and Richfield as well as through conference calls and video conferences.

This review process vetted initial ideas and narrowed the location and design options as they were presented. Members of the Committee provided local perspectives to the design team that were essential in understanding the complex issues related to land ownership, community values, and future funding and implementation of the ideas contained in this report.

UDOT Review

An additional level of review for this project was completed by the team with Region 4 of UDOT. Since much of the pathway would be placed within the UDOT right-of-way it was important to keep their management team informed and seek their input and approval at various steps in the process. UDOT has issued a letter of support for the initial alignment with qualifications related to the preliminary nature of this study. This allows the design process to continue to the engineering stage of development.

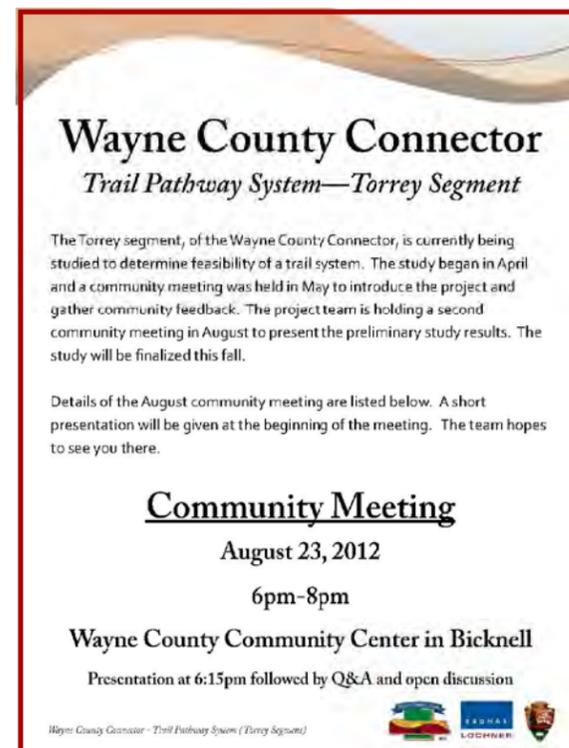


Image 3.3a - Second Open House Notice

Notices were prepared announcing the second Open House for the pathway project. The meeting was organized by the Wayne County project management staff and it was held at the Community Center in Bicknell.

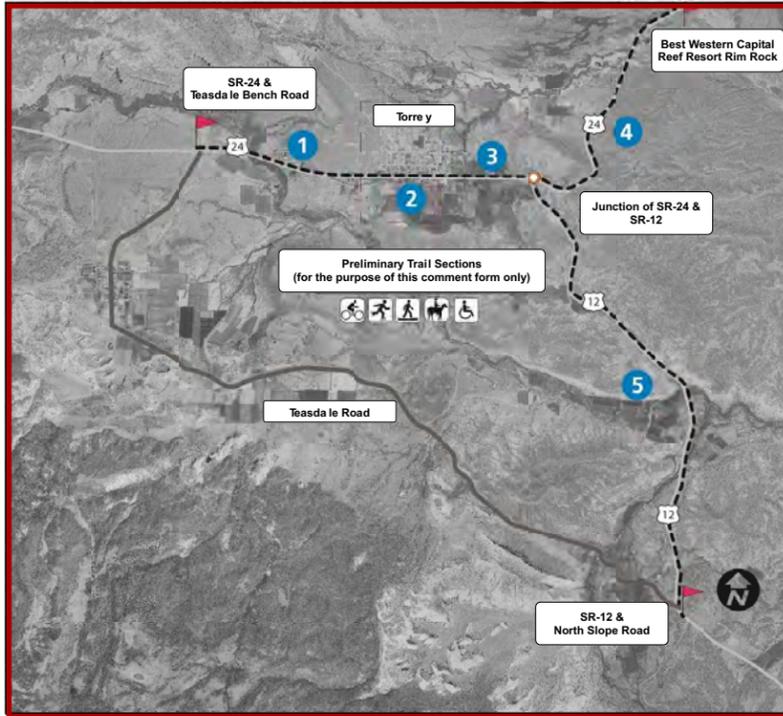
Date: 8/15/2013

Section 3

Stakeholder Involvement

Torrey Segment Wayne County Connector





Reference Map for Comment Form

Section 3

Date: 8/15/2013

Open House 1 Summary of Comments

Torrey Segment Wayne County Connector



Open House Comment Form

Shown below is the comment form that was available at the first Open house community meeting for the Wayne County Connector pathway design project. A summary of the comments submitted is contained on this page and the following pages of this section of the design study report.

Wayne County Connector

Comments may also be made online at:
www.waynecountyutah.org

Please provide us with the following information:

Business: _____
 Name: _____
 Phone: _____
 Email: _____
 Address: _____

Contact us:
 Brandon Jensen, Wayne County GIS Dept.
 18 South Main
 Loa, UT 84747
 435-836-1323 (Office) / 435-616-1323 (Cell)
brandon@wco.state.ut.us

- If the trail were constructed, what would be your most frequent trail activities? *(check all that apply)*

<input type="checkbox"/> Transportation	<input type="checkbox"/> Recreation
<input type="checkbox"/> Bicycling	<input type="checkbox"/> Walking
<input type="checkbox"/> Walking dog	<input type="checkbox"/> Enjoying natural environment
<input type="checkbox"/> Jogging	<input type="checkbox"/> Would not use
<input type="checkbox"/> Other _____	
- If constructed, what sections of the trail do you feel are the highest priorities? *(see map on back)*

<input type="checkbox"/> 1. SR-24: Teasdale Bench Road to Torrey town
<input type="checkbox"/> 2. Within Torrey town
<input type="checkbox"/> 3. Torrey town to SR-12
<input type="checkbox"/> 4. SR-12 to Best Western Capitol Reef/Rim Rock
<input type="checkbox"/> 5. SR-12 to North Slope Road
- Suggestions as to where you would like to see this path go in the Torrey segment:
 For SR-24: _____
 For SR-12: _____
- Would you prefer a trail separated from the roadway or would you rather it be on the roadway?
 Separated On roadway
- Would you use the trail by yourself, in a group, or with your family/children? *(check all that apply)*
 Yourself In a group With your family/children
- Would you use the trail to get to a destination? If so, what is your destination?
 Yes: _____ No
- Are there any existing safety issues for pedestrian or cyclists on the roadway? *(specify location)*

- Do you have any concerns with construction of this trail? If so please tell us about them.

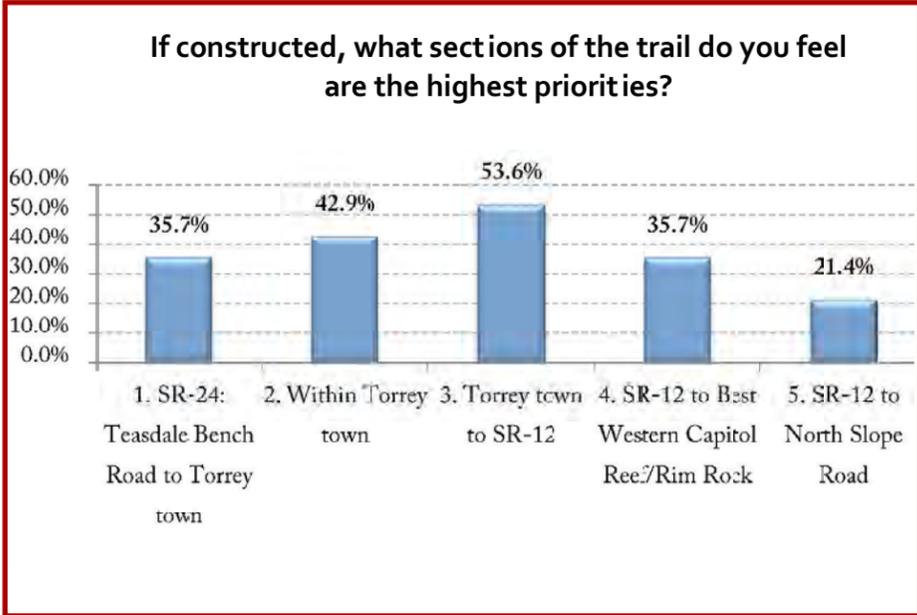


Summary of Question 1 - Characteristics of Pathway Usage

The majority of respondents indicated that their primary method of using the pathway would be for walking and biking. The primary reason to use the pathway would be for recreational uses or to simply get outside and enjoy the natural environment.

Other written responses included the following uses :

- Equestrian; no ATV or motor bikes
- Crossing the river on horse
- Horses
- I'd like to see ATV and horse use permitted
- Horseback riding
- Birding

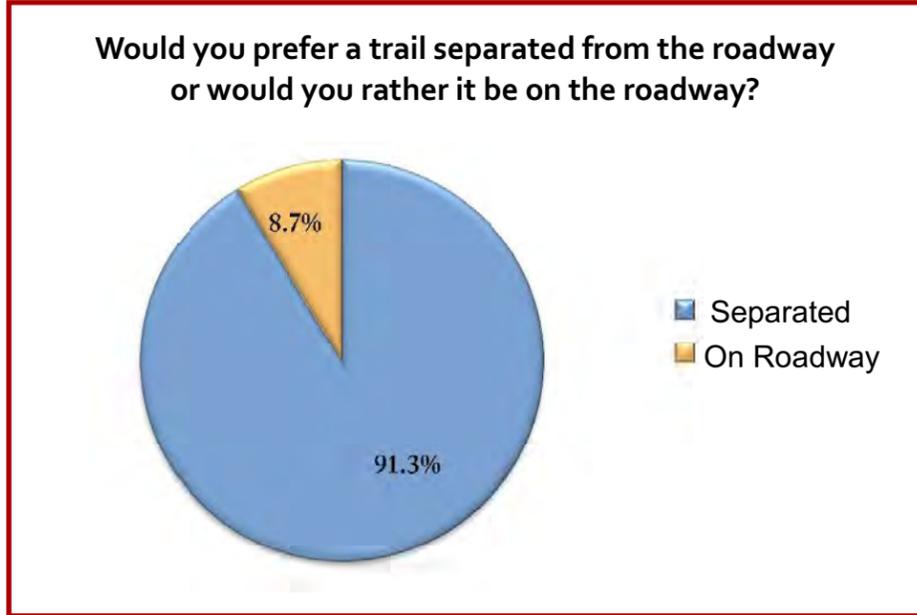


Summary of Question 2 and 3 - Phasing Location Priorities
 Participants were asked to identify segments that should receive the highest priority for an initial phase of the pathway. The area around Torrey was the top priority for 54% of respondents.

Question 3 that allowed respondents to write in their specific preferences generated a wide range of solutions and locations for a future pathway. Some of the responses are listed below.

- For SR-24:**
- North side of the road
 - Along river off road
 - from Bicknell to Capitol Reef
 - from Velvet Ridges to SR - 12
 - SR12 to Rim Rock We will work with the path on our property
 - Along the canal corridor in town
 - Follow SR24 through town by businesses, continue to SR12 preferably with barrier between path and road.
 - North Side of SR 24
 - It seems like there is enough room on the south side of the road and south of the canal where possible. This would provide a protected buffer between the pathway and the cars on the highway.
 - I'm not sure what the choices are. Along the ditch and under the cottonwoods is the obvious choice.
 - From Loa to Capitol Reef Visitors Center

- For SR-12:**
- East side of the road
 - far from road with overlook
 - along the existing road
 - From Torrey to Boulder
 - As far away from road as possible.
 - parallel to the road on the west side.



Summary of Question 4 - Pathway Location Priority
 The vast majority of respondents indicated that they would rather see a pathway that is separated from the roadway. Most expressed safety as they primary reason for this preference.



Summary of Question 5 - Type of Use - Demographics
 Most individuals saw the beneficial use evenly split between themselves and their families with group use also receiving high ratings.

Open House 1
 Summary of Comments
Torrey Segment
Wayne County Connector





Summary of Question 6 - Destinations

More than two-thirds of respondents view the pathway as a means to get to a specific destination rather than a general pathway to wander along with no destination in mind. Samples of the destinations included:

- Teasdale to Torrey
- work and home Also for our guests to be able to get to town
- Torrey and Teasdale
- Bicknell bottom to the park
- From home near N.S. Road to Torrey
- Torrey Town

Summary of Question 7 - Safety Issues

Safety concerns were high on everyone's list of issues that currently exist along the corridor. Even those that stated they would have no use for the pathway relayed a safety based issue to the design team. Most commented on the lack of safe shoulders on the roadways, increased traffic each year and an increase in tourists walking or biking along the edge of the roadway. Written concerns included the following safety issues:

- Cracking pavement, dips in road, and blind turns
- Any path through the middle of the town could cause problems for the businesses like the post office & trading post.
- Blind curves speed, sunrise/sunset glare
- Malfunction junction to Capitol Reef on Highway 24 Prefer both separated and on road for placement. On-road where appropriate leave road on major safety concern sites
- Yes along the stretch between the great western trail and our hotel. Our guests have difficulty walking here.
- Yes all roads within Wayne County are too narrow now and there is need for a separate trail
- Water crossing is my only concern. Bridges and a safe crossing for a horse and walker and jogging. Just watching each other. Pay attention and share the road.
- Yes- Narrow roads and non existent shoulders throughout route with not a great deal of space to expand out
- Yes- no shoulder between SR 12 and Torrey Town
- Yes roads to narrow heavy tourism in summer months!
- no safe road edge to ride or walk traffic is fast and heavy at times
- Road is dangerous between Torrey and SR12 junction, no shoulder, traffic too fast.
- No shoulder on existing road to accommodate walkers, BICYCLISTS especially and 4 wheelers. At present, non vehicle users are distracted with conversation, Ipods and do not always hear/see/care about vehicular traffic.
- Highway is too narrow in places to feel safe when bicycling and when big trucks go by their draft can sway your balance.
- There is no shoulder on the road from Teasdale to Torrey and into the Capitol Reef. It is dangerous to ride a bike on those sections.
- Yes, I'd say everywhere on the designated roads, esp. for cyclists. I like bicycles but it's dangerous for me to drive home when there are bikes along the road.
- Yes. Teasdale Bench SR24
- Yes- Torrey to 12 is not even safe to walk also 12 to best western
- Hwy 12 and 24 are very dangerous for anyone not in an automobile because they are very narrow.
- Shoulder between Torrey Town and UT 12 is not wide enough to walk safely

Open House 1 Summary of Comments

Torrey Segment Wayne County Connector



Summary of Question 8 - Concerns Related to the Pathway Project

Respondents were given the opportunity to voice their concerns related to the proposed pathway project. Common responses from participants related to protection of private property rights, limited resources and the desire to not waste public tax dollars, and the need to get something built before someone is killed while walking along the edge of the road. A sample of the responses that were submitted are shown below.

Do you have any concerns with construction of this trail? If so please tell us about them.

- Great idea. Well planned. The community pays its tax dollars for a mostly outside users. There needs to be a tax or fee to use the trail. Gasoline tax pays for road maintenance. Tax dollars for construction. I have a license, register and insure my vehicles and four wheelers to use on road. Either everybody pays or nobody pays.
- Biggest concern involves right of ways. Many people do not understand how big the state right of ways are. They are used to taking care of the land in front of their homes and don't know its state right of way. Would there be money available to keep it up? A restroom should be constructed at several points along the path (on map restrooms have been drawn in at SR-12 & North Slope Road and just west of Torrey.
- Please give opportunity to buy, hire local; eradicate tamarisk along river so we can enjoy view
- Incorporate trail with the highway as much as possible. Leave highway on sharp curves and safety concern areas. Alternate route on Main Street in Torrey should be considered. Maybe a block north would be appropriate.
- No. We would be very happy to donate the construction of the trail that runs along the road by our hotel or assist with construction of it. We would like to have a area on our property. We will donate as a pullout or starting point. We would like to landscape a area and accent curves for a nice path maybe put a retaining stone wall on the upper and lower sides of the path. Also have a nice stone bench with a resting area and maybe a drinking fountain. Also would like to allow bikers to be able to park at our hotel and start the path from there.
- Lack any understanding of the specifics, so the concerns would be vaporware
- avoid big signs (there is too much signage already). And don't light the trail. Preserve our night skies!
- Safety concerns (noted on map), along with concerns as a landowner with frontage on SR-12
- I wonder why we are spending money on this in difficult economic times. Will it really bring more tourists?
- How do we pay for the trail & how do we pay to maintain the trail?
- it needs to be safe to use!
- I'm concerned that it won't get done!
- No
- No concerns.
- Can't happen soon enough
- Cost sharing and future maintenance.
- A safe crossing of the river is all.
- Get er done

Date: 8/15/2013

Section 3

Open House 1 Summary of Comments

Torrey Segment Wayne County Connector



Open House 2 Comment Form

Shown below is the comment form that was available at the second Open house community meeting for the Wayne County Connector pathway design project. A summary of the comments submitted is contained on this page and the following pages of this section of the design study report.

Wayne County Connector

Comments may also be made online at:
www.waynecountyutah.org





Please provide us with the following information:

Business: _____
 Name: _____
 Phone: _____
 Email: _____
 Address: _____

Contact us:
 Brandon Jensen, Wayne County GIS Dept.
 18 South Main
 Loa, UT 84747
 435-836-1323 (Office) / 435-616-1323 (Cell)
brandon@wco.state.ut.us

1. We would like to have your opinion on the trail/pathway concept shown tonight. Please indicate yes if you like the segment or no if you do not and give a brief explanation for why or why not.

SR-24: Teasdale Bench Road to Torrey Town
 Yes No

Within Torrey town
 Yes No

Torrey town to SR-12
 Yes No

SR-12 to Best Western Capitol Reef/Rim Rock
 Yes No

SR-12 to North Slope Road
 Yes No

2. Which potential sign themes do you like? *You may select more than one.*

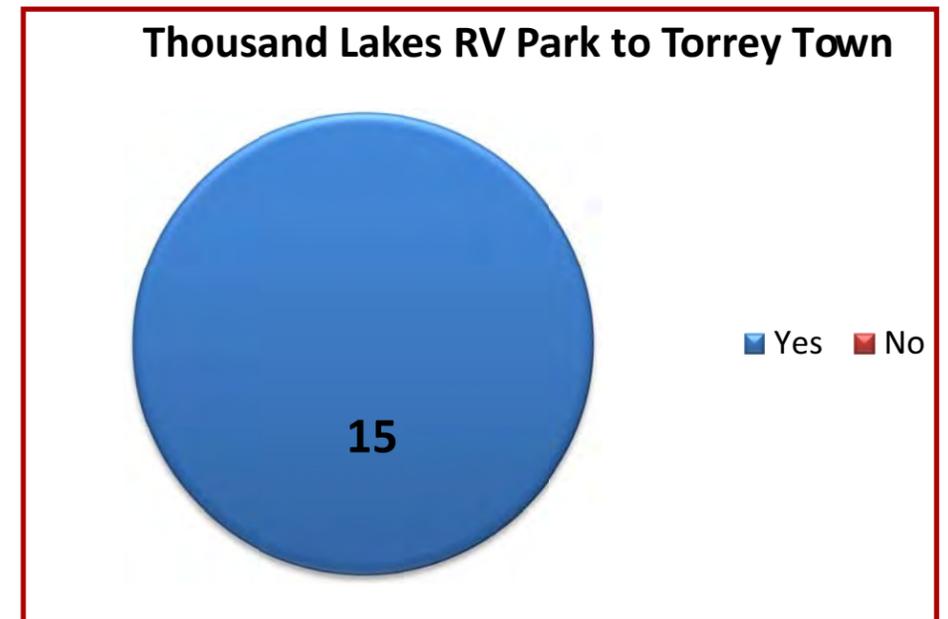
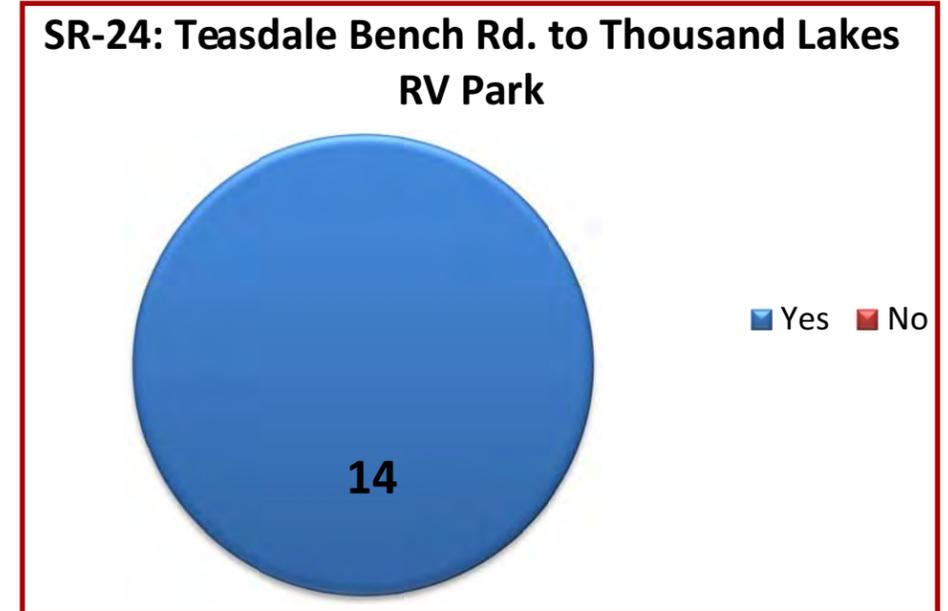
<input type="checkbox"/> Horseman	<input type="checkbox"/> Red Velvet Cliffs
<input type="checkbox"/> Historic School	<input type="checkbox"/> Cattle Drive
<input type="checkbox"/> Barn & Irrigation Line	<input type="checkbox"/> Torrey Trees & Canal
<input type="checkbox"/> Scenic Landscape	<input type="checkbox"/> Petroglyphs

Are there other themes you would suggest? _____

3. Do you own land that may be impacted by the trail/pathway concept?
 Yes No

If yes, are you interesting in working with the county on providing right-of-way?
 Yes No

4. Do you consider yourself a supporter of this project?
 Yes No



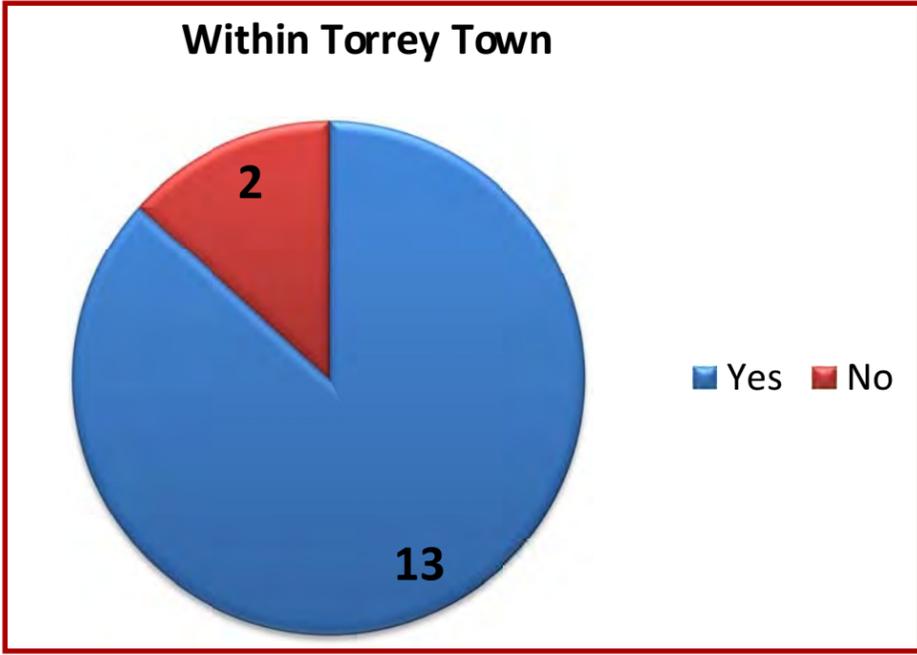
Summary of Question 1 - Segment Priorities

All of the comment sheets that were submitted supported any or all of the proposed pathway segments proposed for the initial phase of construction.

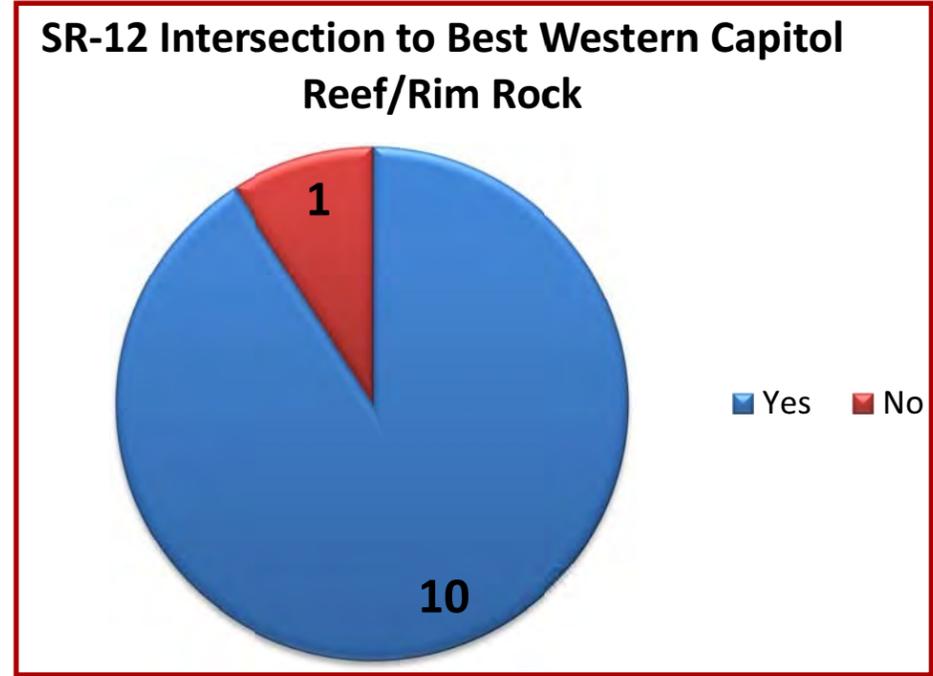
Open House 2 Summary of Comments

Torrey Segment Wayne County Connector





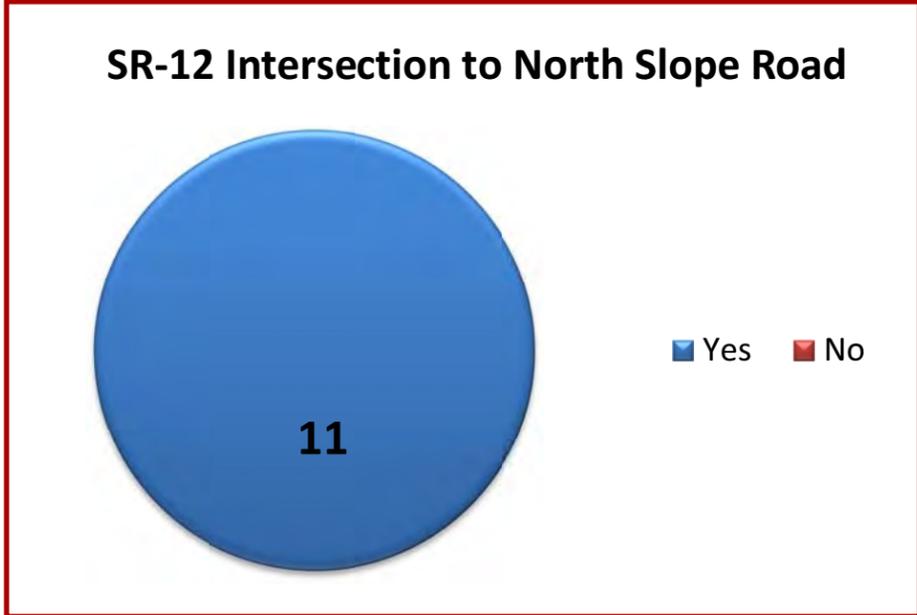
- Why or why not:
- Absolutely! Both bike & walkers.
 - Impacts canal beauty
 - Don't like added pavement/gravel next to canals & trees. Part of the charm of Torrey is the natural look along the canal. If trail on south side of road, definitely behind the canal.



- Why or why not:
- So-so. We would use it but it is not first priority.
 - later
 - No opinion
 - Definitely needs to be off the highway (well away from)
 - I wonder why the path detours around the Texaco station. There would be a steep hill.



- Why or why not:
- I walk this often as do my neighbors - it is currently dangerous. There are two active hotels in our intersection area & walkers to walk into town safely.



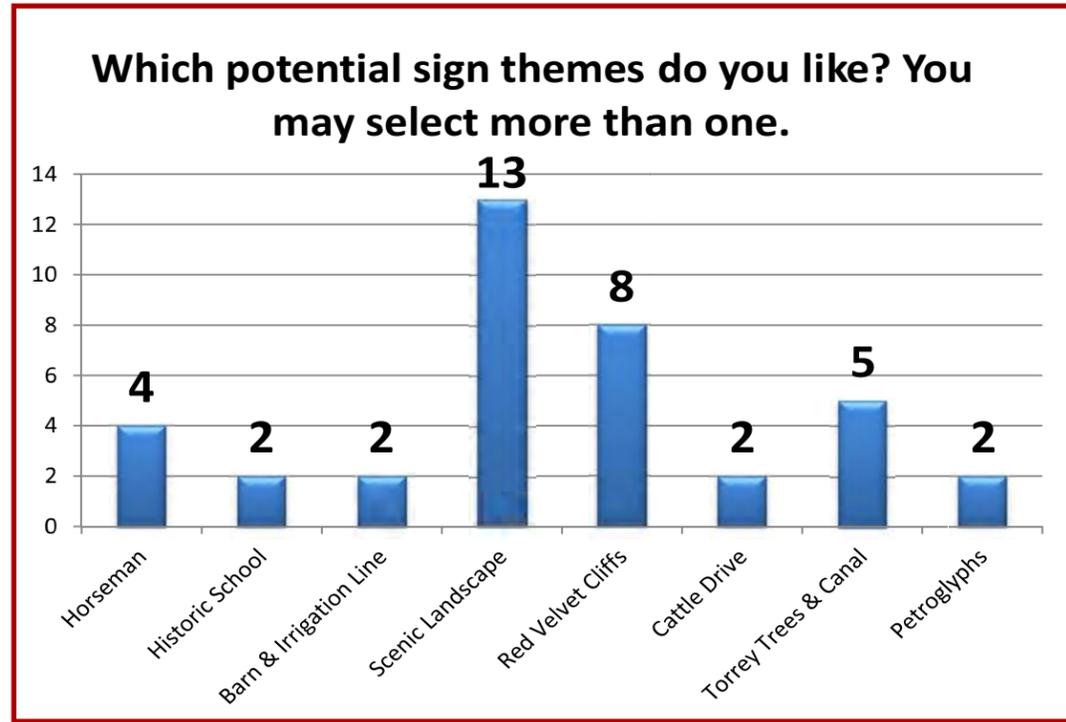
- Why or why not:
- I will love and use any of these segments
 - Ambivalent on this - serious bikers use it coming & going from Boulder Mountain.
 - No opinion No more lights
 - No more lights - RY
 - Agree that west side is only possibility

Summary of Question 1 - Segment Priorities

Open House 2 Summary of Comments

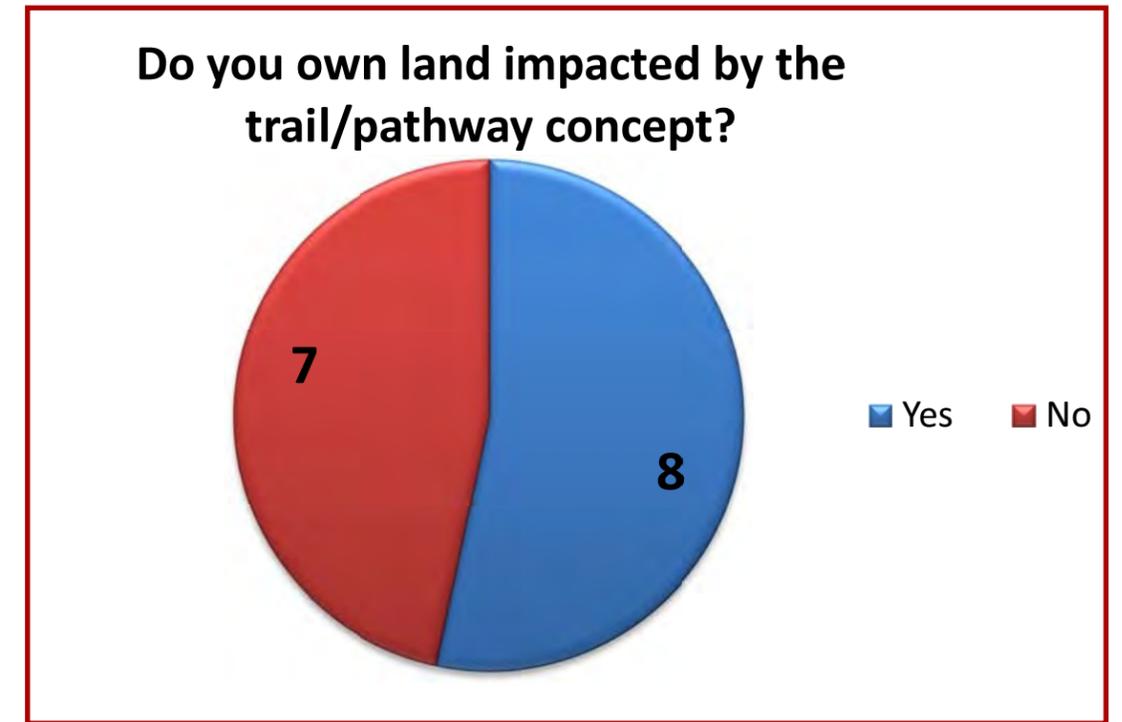
Torrey Segment Wayne County Connector



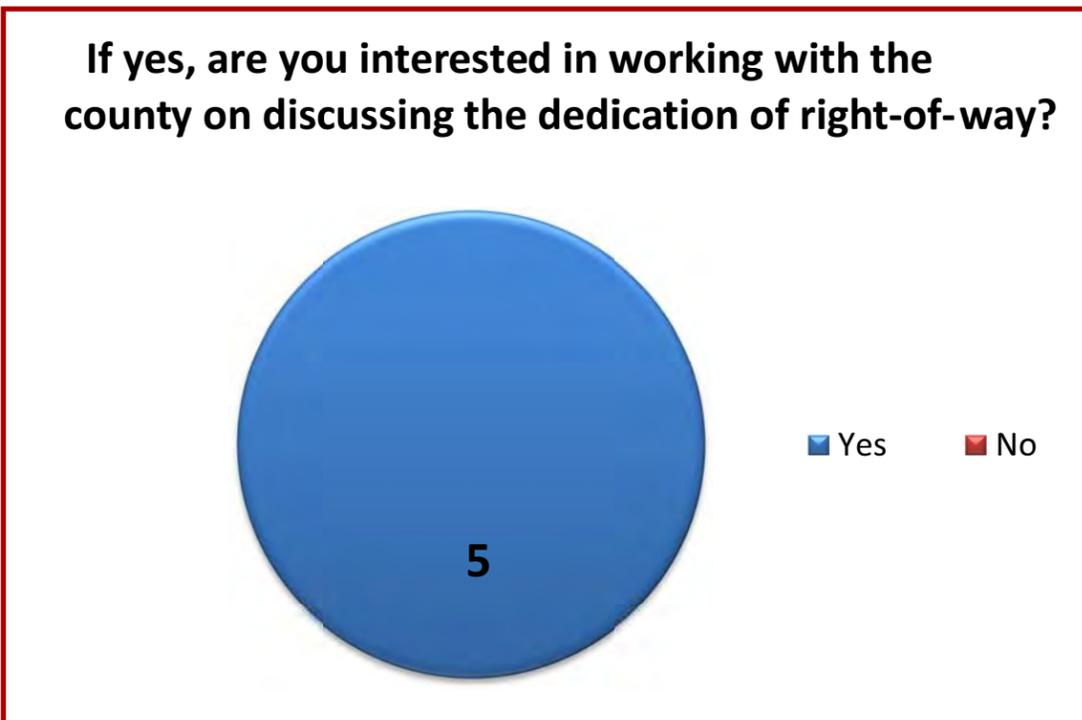


Summary of Question 2 - Thematic Preferences

Of the various thematic images presented to the public during the Open House, those that highlighted the scenic landscapes of Wayne County were favored.

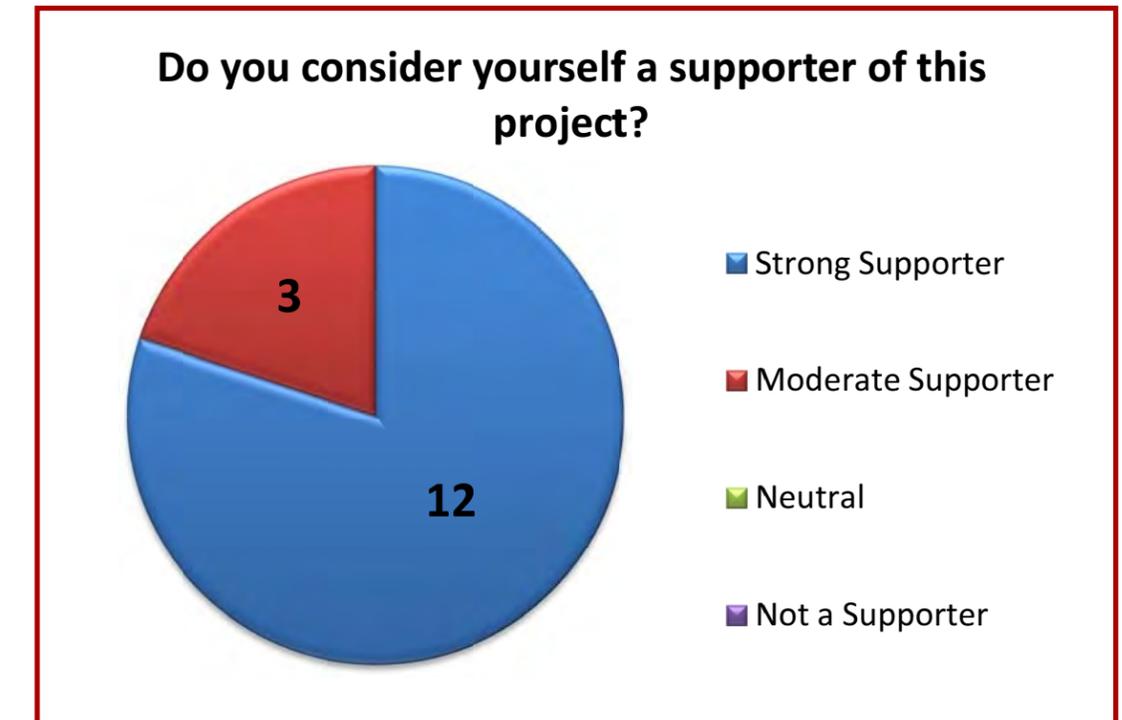


Summary of Question 3a - Land Ownership Representation



Summary of Question 3b - Land Ownership Representation

Among landowners that border the pathway alignment there was support for working with the County on easements, if necessary, to implement a safe pathway design that served local businesses and destinations.



Summary of Question 4 - Project Support

Most respondents considered themselves to be supporters of the pathway project.

Open House 2 Summary of Comments

Torrey Segment Wayne County Connector





Image 4.1-a - Right-of-way Limitations

Areas along State Road 12 have limited right-of-way widths and sight clearance issues that pose safety problems for pedestrians and bicyclists. This curve on the eastern side of the right-of-way combined with topographic challenges will dictate that the pathway alignment will run along the western edge of the roadway.



Image 4.1-b - State Roads 12 and 24 Intersection

Issues related to traffic congestion, turning movements, commercial services and pedestrian crossing demands are all present at the intersection of State Road 24 and State Road 12.

Corridor Analysis

The entire corridor, for both State Road 24 and State Road 12, that lies within the study area was evaluated for suitability of locating the proposed pathway. Issues that were considered included the following:

- right-of-way width
- general traffic and parking patterns
- connectivity to other transportation networks
- land ownership
- topography
- natural features such as wetlands and stream crossings
- origins and destinations for pathway users
- environmental conditions
- vegetation patterns
- cultural features and landmarks

Each of these elements was considered and mapped where sufficient data sources existed. This mapping, combined with on-site observations along the roadways and input from local users, owners, and governmental agencies, was factored into the initial corridor analysis to determine the opportunities and limitations affecting the location of the preferred pathway alignment.

The programmatic goal was to provide for the safest and most cost effective alignment, that limited intrusion onto private property, while serving the needs of the community. Roadway crossings were desired to be minimized and combined with existing crossing points where possible.

Based on this level of corridor analysis an initial routing plan was prepared that illustrated pathway segments and options or alternative alignments that could be considered for preliminary engineering.

The maps in this section of the feasibility study illustrate the following elements of the analysis process.

1. Significant points of origin for pathway users and destinations that would be available or desired by those users.
2. General profiles of the user group that could be anticipated along each segment of the pathway. This is expressed as a relative split between anticipated pedestrian traffic versus bicycle traffic. Determinations were based on the number of destination points that would result in cross-traffic and the relative isolation of any one segment or distance between destinations that would discourage pedestrian traffic.
3. Physical limitations present along either side of the right-of-way that would result in either costly solutions or unsafe conditions with respect to roadway and pathway functionality.
4. Alternate pathway alignments that could be utilized in achieving the goals of the pathway as dictated by the Steering Committee.
5. Comparative analysis of the various alignment options based on limiting characteristics of the corridor.

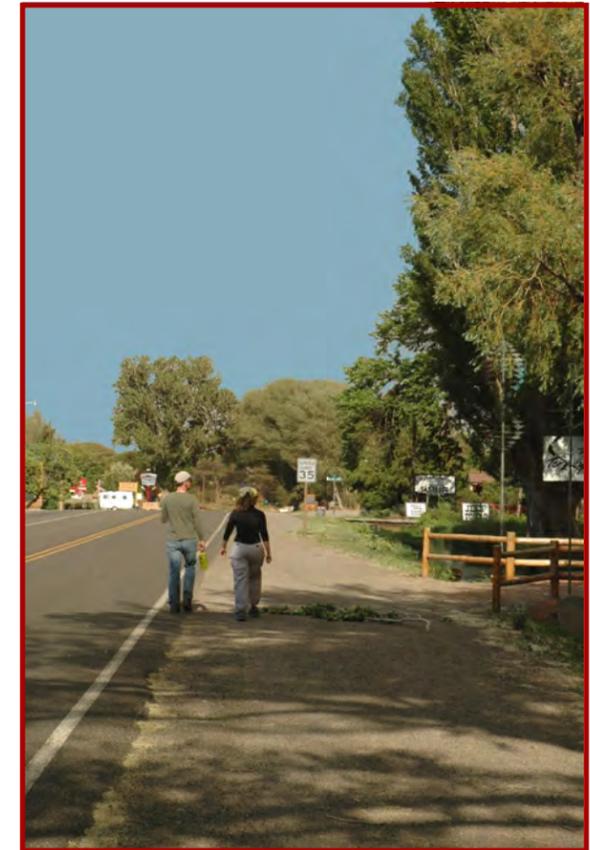


Image 4.1-c - Existing Use Patterns

Even within the Torrey town center area pedestrians need to walk along the shoulder of the existing roadway surface. This represents a safety issue that limits pedestrian cross traffic between businesses or forces families to drive from location to location, thereby increasing traffic volumes and turning movements.

Date: 8/2/2013

Section 4

Corridor Inventory and Analysis

Torrey Segment Wayne County Connector



Legend

Waypoints

- 1** Teasdale Bench Road
Western terminus of study area. Intersection of S.R. 24 and Teasdale Bench Road (County Roadway)
- 2** Sand Creek Road
Cross connection to the Great Western Trail and access to the Forest Service trailhead facility. Access to lodging and services.
- 3** Torrey Western Limits
Torrey Main Street corridor western terminus at 300 West.
- 4** Torrey Eastern Limits
Torrey Main Street corridor eastern terminus at 300 East.
- 5** S.R. 24 and S.R. 12 Intersection
Intersection of Scenic Byway 24 with the northern terminus of Scenic Byway 12 to Boulder and Escalante. Access to lodging and services. Visitor Information Center.
- 6** Roadside Commercial Services
Roadside lodging and services along S.R. 24 corridor.

Destinations

- A** Fremont River Crossing
Scenic overlook potential and river access with fishing.
- B** Thousand Lakes RV Park
Camping and recreational vehicle tourist destination.
- C** Torrey Town Center
Torrey downtown commercial and tourism district - intersection of Main Street (S.R. 24) and Center Street.
- D** Red Sands Motel
Lodging with rest facility potential.
- E** Wonderland RV Park
Camping and recreational vehicle tourist destination.
- F** Rim Rock
Eastern terminus of the study area. Lodging and services available. Future pathway connections to Capitol Reef N.P. possible.

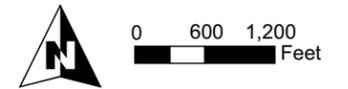
Estimated Pathway Mode Share

-  **Pedestrian Use Dominant Over Bicycle Use**
Pathway usage dominated by pedestrians within the Main Street corridor. Movements predominantly between Torrey's downtown destinations. Commercial destination access across shorter distances.
-  **Pedestrian Use and Bicycle Use Equally Weighted**
Pathway usage divided between pedestrians walking to town from lodging and bicycles commuting or touring through the area.
-  **Bicycle Use Dominant Over Pedestrian Use**
Bicycles commuting or touring through the area with occasional pedestrian traffic traversing longer distances. Recreational and scenic touring valued by most pathway users.

 UDOT Milepost Marker Reference



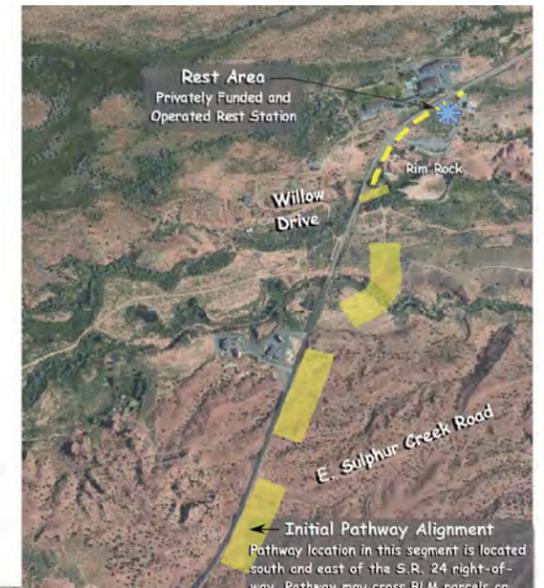
* All distances and areas related to drawing scale are approximate based on limitations of the base materials and photographic images.



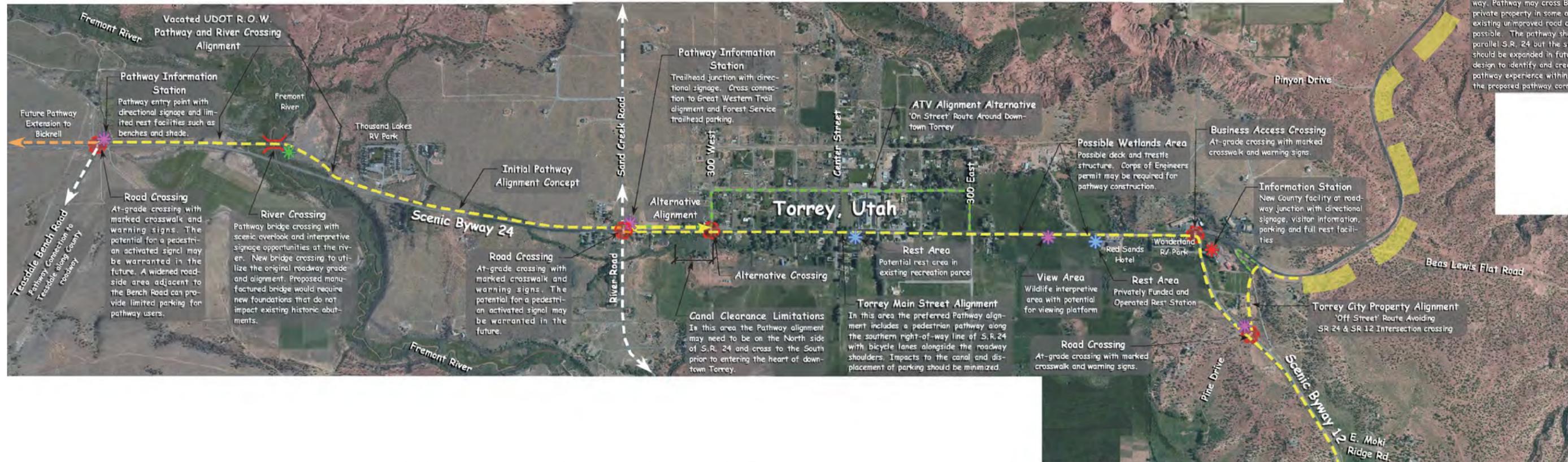
Legend

-  **Road Crossing**
At-grade crossing with marked crosswalks and signage.
-  **Information Station**
Trailhead junction with directional signage and limited facilities.
-  **River Crossing**
New Bridge structure with scenic overlook and interpretive signage opportunities.
-  **Rest Area**
Potential for a privately funded and operated Rest Station along pathway corridor.
-  **Visitor Information Facility**
Potential County facility with shared office space and services.
-  **Proposed Bridge Structure**
Manufactured steel and wood bridge to cross river.
-  **Initial Pathway Alignment Concept**
Specific location and design details to be determined within current and future design efforts.
-  **Alternative Pathway Alignment Options**
Connection opportunities to additional pathways or trails. Specific location and design details to be determined.
-  **Expanded Width Study Corridor**
Pathway alignments East of Torrey along S.R. 24 to be determined within a broader study corridor. Specific alignment and design details to be determined in future design study efforts. Path may diverge from roadway by greater distances to enhance safety and user experiences.

* All distances and areas related to drawing scale are approximate based on limitations of the base materials and photographic images.



Initial Pathway Alignment
Pathway location in this segment is located south and east of the S.R. 24 right-of-way. Pathway may cross BLM parcels or private property in some areas and utilizes existing unimproved road corridors where possible. The pathway should generally parallel S.R. 24 but the study corridor should be expanded in future phases of design to identify and create a scenic pathway experience within this segment of the proposed pathway corridor.



Alignment Analysis and Concepts Scenic Byway 24

Date: 3/25/2013 Section 4
Initial Alignment Analysis - 24

Torrey Segment Wayne County Connector



* All distances and areas related to drawing scale are approximate based on limitations of the base materials and photographic images.



Estimated Pathway Mode Share

- 
Pedestrian Use Dominant Over Bicycle Use
 Pathway usage dominated by pedestrians within the Main Street corridor. Movement predominantly between Torrey's downtown destinations. Commercial destination access, across shorter distances, common. Some touring users traveling through the area.
- 
Pedestrian Use and Bicycle Use Equally Weighted
 Pathway usage divided between pedestrians walking to town from lodging and bicycles commuting or touring through the area. Commercial destination access across moderate distances with recreational and touring use common.
- 
Bicycle Use Dominant Over Pedestrian Use
 Bicycles commuting or touring through the area with occasional pedestrian traffic traversing longer distances. Recreational and scenic touring valued by most pathway users.

Legend

Waypoints

- 
S.R. 24 and S.R. 12 Intersection
 Intersection of Scenic Byway 24 with the northern terminus of Scenic Byway 12 to Escalante and Boulder. Access to lodging and services. Visitor Information Center with parking and restrooms.
- 
Fremont River Crossing and Trail Access
 Access to BLM trail network and river corridor
- 
Morrill Ranch Road Intersection
 Alternative connecting route to Teasdale Road
- 
Teasdale Road
 Southern terminus of study area. Intersection of S.R. 12 and Teasdale Bench Road (County Roadway)

Destinations

- 
Red Sands Motel
 Lodging with rest facility potential.
- 
Wonderland RV Park
 Camping and recreational vehicle tourist destination.
- 
Cowboy Cabins
 Lodging, camping and recreational vehicle tourist destination.
- 
Flute Shop
 Commercial services and tourism based sales.

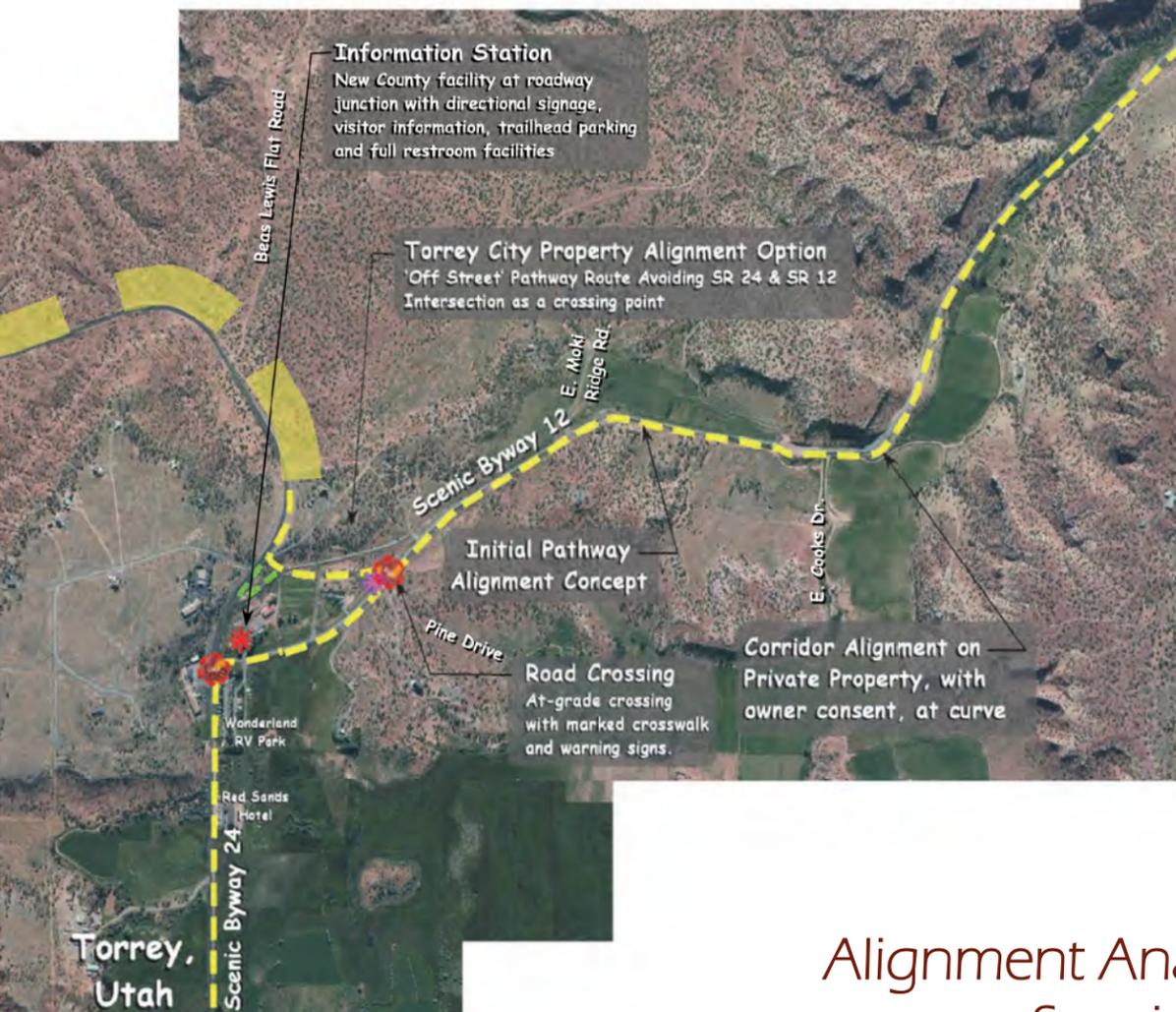
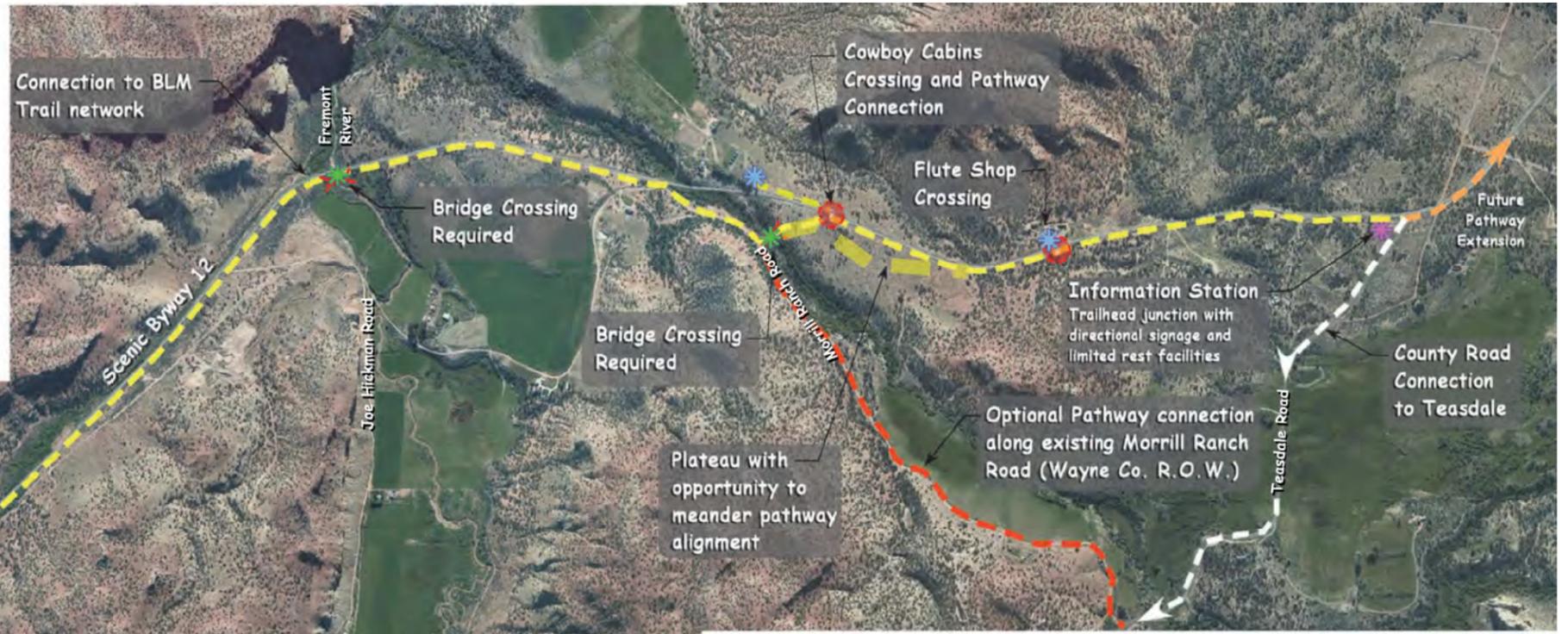
Pathway Origins and Destinations
Scenic Byway 12

Corridor Use Analysis - SR12

**Torrey Segment
Wayne County Connector**



* All distances and areas related to drawing scale are approximate based on limitations of the base materials and photographic images.



Legend

- Road Crossing: At-grade crossing with marked crosswalk and signage.
- Information Station: Trailhead junction with directional signage and limited rest facilities.
- River Crossing: New Bridge structure with scenic overlook and interpretive opportunities.
- Rest Area: Privately funded and operated Rest Station along pathway corridor.
- Visitor Information Facility: Potential County facility with shared office space and services.
- Initial Pathway Alignment Concept: Specific location and design details to be determined.
- Alternative Pathway Alignment Options: Specific location and design details to be determined.
- Additional Pathway Corridor: Additional corridor alignment along existing County road connecting to Teasdale Road. This is not an Alternative Alignment to the Highway 12 Alignment.
- Expanded Width Study Corridor: Specific alignment and design details to be determined through future study and surveys.

Alignment Analysis and Concepts Scenic Byway 12

Date: 3/25/2013 Section 4
Initial Alignment Analysis - 12

Torrey Segment Wayne County Connector



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Environmental Overview of Pathway Study Area

Environmental clearance under the National Environmental Policy Act (NEPA) is required for projects with a federal nexus such as the use of federal lands, federal funding sources, or those that require federal permits. The type of NEPA document required is determined by where the pathway is located and the anticipated level of impacts that may result. Sections of the Wayne County Connector pathway located within UDOT rights-of-way would likely require a Categorical Exclusion permitting process following the Federal Highway Administration's guidelines and procedures. If Federal funds are not used, UDOT's State environmental process would be followed (similar in nature to the Federal NEPA process). Sections of the pathway located on BLM land would likely require an Environmental Assessment (EA) following BLM's process. This section of the study presents a broad overview of the environmental clearance issues that may be encountered in permitting the construction of the pathway project.

Environmental Data Collection Methodology

Due to budget limitations, no field surveys were conducted to identify resources. Data collection efforts were focused on obtaining existing data within the project area (in or adjacent to the existing roadway right-of-way). Environmental resources were identified through the following methods:

- Telephone and e-mail correspondence with resource specialists at UDOT and BLM
 - Pam Higgins, UDOT NHPA/NEPA Specialist (Archaeologist)
 - Jared Barton, UDOT Landscape Architect
 - Paul West, UDOT Wildlife Biologist
 - Craig Harmon, BLM Archaeologist
 - Larry Greenwood, BLM Wildlife Biologist
- Inventory of GIS data available from uPlan and AGRC
 - Cultural resources
 - Wetlands
 - Hazardous materials
- Windshield surveys

Environmental Resources Identified in the Project Area

Cultural and Paleontological Resources

Cultural resources are protected under the National Historic Preservation Act (NHPA), which outlines national policy and procedures regarding historic properties (i.e., districts, sites, buildings, structures, and objects included in or eligible for the National Register of Historic Places [NRHP]). Section 106 of the NHPA requires federal agencies to consider the effects of their undertakings on such properties. If eligible sites could be affected by the pathway, it would be necessary to go through the Section 106 process. This process includes efforts to avoid, minimize, or mitigate impacts, and coordination with the State Historic Preservation Office.

For the purpose of this discussion, cultural resources include the following:

- Archaeological resources: The remains of past human activities—including objects, features, artifacts, and linear historic sites, such as canals and railroads—that are at least 50 years old
- Historic resources: Sites, buildings, or structures that are at least 45 years old

Paleontological resources (e.g., fossils) include tracks and body remains of vertebrate and invertebrate organisms as well as plant fossils. Paleontological resources are protected under UCA 79-3-508; state agencies must consider the effects of their undertakings on resources included in or eligible for inclusion in the State Paleontological Register.

UDOT Right-of-Way

The majority of UDOT's right-of-way in the project area has previously been surveyed for archaeological and paleontological resources, with one exception on SR-12 between MP 119.5 and MP 120.3 (Higgins 2012). However, UDOT has not conducted an architectural survey for historic structures in the project area.

Due to the sensitive nature of archaeological and paleontological resources, it is not appropriate to provide detailed information or disclose their locations. There is a cultural and paleontological sensitive area located on the east side of SR-12 in the project area.

For this reason, constructing the pathway on the west side of SR-12 would result in the least harm. There is one known site on SR-24 on the north side of the road, east of Torrey. The eligibility of this site is not currently known. Sites that are not eligible are not protected under the NHPA.

BLM Land

There are numerous cultural resources in the project area. However, the areas near the existing highways have already been disturbed. The likelihood of affecting a site decreases with proximity to the highway. The likelihood of finding a cultural site within 50 feet of the road is low (Harmon 2012).

Torrey Town

The Torrey Log Church Schoolhouse at 49 East Main Street is listed on the NRHP. It is highly likely there are more buildings eligible for the NRHP in Torrey. Until an archaeological survey is conducted, it is not possible to know which ones are eligible (and thus protected under Section 106).

Section 4(f) Resources

Section 4(f) of the U.S. Department of Transportation (USDOT) Act of 1966 was enacted to preserve publicly owned parks, recreation lands, wildlife and waterfowl refuges, and any historic sites on or eligible for the NRHP. Section 4(f) applies only to the USDOT—it would only be applicable if the pathway were funded by a USDOT agency such as the Federal Highway Administration (FHWA). If Section 4(f) applies and resources are affected, it would be necessary to do a Section 4(f) evaluation. FHWA is responsible for implementing Section 4(f) and cannot approve the use of a Section 4(f) property unless there is no feasible and prudent alternative and the project includes all possible planning to minimize harm.

There are no publicly owned parks, recreation lands, or wildlife and waterfowl refuges in the project area (within or adjacent to the roadway). There are historic sites eligible for the NRHP, as discussed above. Not all NRHP-eligible sites qualify for protection under Section 4(f)—they must be eligible and warrant preservation in place. If FHWA funds are used to construct the pathway, it would be necessary to evaluate if any of the historic sites are also Section 4(f) resources.

U.S. Waters

"U.S. waters" is a term used to describe waters under the jurisdiction of the U.S. Army Corps of Engineers (USACE) and can include streams, lakes, rivers, wetlands, and other waterways. The Clean Water Act protects U.S. waters by forbidding discharges (including fill) without a permit from USACE. Impacts to natural stream channels require a stream alteration permit from the Utah Division of Water Rights.

Streams

As shown on Figure 2 in Appendix A, there are several stream crossings in the project area, including the following:

- Fremont River crossing SR-24 at approximately MP 67
- Fremont River crossing SR-12 at approximately MP 120.2
- Sulphur Creek crossing SR-24 at approximately MP 71.4
- Fish Creek crossing SR-12 at MP 119.5

Impacts to the streams at these locations would require a 404 Permit, a Stream Alteration Permit, or both. Potential impacts from a pathway include constructing a new bridge or widening an existing bridge. USACE generally takes jurisdiction if there are wetlands or impacts below the ordinary high water mark of streams. Otherwise, the Utah Division of Water Rights can take jurisdiction. Jurisdiction is determined on a case-by-case basis.

Wetlands

Multiple potential wetlands are present in the project area (see Figure 2 / page 5-4). There is evidence of wetland vegetation at each stream crossing described above. There is also evidence of wetland vegetation on the east side of Torrey, from approximately MP 69 to the junction with SR-12. To determine if there are wetlands, and if the wetlands are jurisdictional, it is necessary to prepare a wetland delineation report and submit it to USACE for a jurisdictional determination.

Notes:

Copies of original source documents are contained within the associated project background and design files. Images contained in this report are for reference only and they have been reduced in size to fit the format of this document.

Actions:

Full environmental clearance documents, at a level appropriate to the scope, location and funding sources for the pathway, may be required for the eventual design and implementation of this project. Sections of the pathway that are located on Federal lands, within UDOT rights-of-way or funded with Federal funding sources are subject to environmental review and approval.

A full wetland delineation, based on field investigations, will be required prior to final design. This delineation will need to be reviewed and approved by the U.S. Army Corps of Engineers. An approved delineation will be valid for a period of five (5) years from the date of acceptance by the Corps.

Additional permits will be required prior to construction activities in areas delineated as a jurisdictional wetland.

Date: 8/15/2013

Section 5

Environmental Overview

Torrey Segment Wayne County Connector





Actions:

Full environmental clearance documents, at a level appropriate to the scope, location and funding sources for the pathway, may be required for the eventual design and implementation of this project. Sections of the pathway that are located on Federal lands, within UDOT rights-of-way or funded with Federal funding sources are subject to environmental review and approval.

A full wetland delineation, based on field investigations, will be required prior to final design. This delineation will need to be reviewed and approved by the U.S. Army Corps of Engineers. An approved delineation will be valid for a period of five (5) years from the date of acceptance by the Corps.

Additional permits will be required prior to construction activities in areas delineated as a jurisdictional wetland.

Environmental Resources Identified (cont.)

Wetlands (cont.)

No formal wetland delineation reports were found for the project area (Barton 2012 / page 5-6). However, UDOT informally consulted with USACE on wetlands along SR-24 near MP 69.5. UDOT designated a “no fill” area on both sides of SR-24 in this area (350 feet long on the north side, 250 feet long on the south side).

The “no fill” areas encompass potential jurisdictional wetlands fed by a seep on the north side of the road. The boundary was determined based on soil samples; soils in wetland areas fed by the seep and irrigation are slightly darker than soils fed solely by irrigation. The actual jurisdictional wetland would likely be smaller than the “no fill” area. UDOT also identified a wet meadow on the west side of SR-12 just south of the junction of SR-24/SR-12 (approximately 340 feet south of the intersection, continuing 500+ feet to the south). Coordination documents between UDOT and USACE are included in the supporting documents for this study.

Special Status Species

Special status species include federally listed threatened and endangered and state sensitive species, as well as migratory birds. The Endangered Species Act of 1973 prohibits federal agencies from authorizing, funding, or carrying out actions that may “jeopardize the continued existence of” listed endangered or threatened species or cause “adverse modification” to designated critical habitat without a permit. Utah sensitive species, or “wildlife species of concern,” are those species for which there is credible scientific evidence to substantiate a threat to continued population viability. The Migratory Bird Treaty Act of 1918 prohibits the “take” of any migratory birds, their eggs, feathers, or nests. The Bald and Golden Eagle Protection Act affords additional protection to all bald and golden eagles.

There are no known occurrences of special status species within the project area (Greenwood 2012). There have been historic recordings of an eagle nest in Torrey (in 1968); however, the nest is not believed to be active (West 2012).

Hazardous Waste

Sites with the potential to have hazardous materials were identified by reviewing federal and state databases in June 2012. As shown on Figure 3 (page 5-5) in the original Environmental Overview Report, underground storage tanks were identified at the following sites:

- Capitol Reef Inn
- Torrey Shell Service
- Torrey Texaco
- Abandoned service station (63 East Main Street)

None of these sites have a history of hazardous material release.

Conclusion – Influence of Environmental Resources on Pathway Alignment

The pathway alignment must balance the following considerations:

- Safety
- Origins and destinations
- Stakeholder input
- Property ownership
- Terrain
- Geometric constraints
- Cost
- Environmental resources

From a strictly environmental perspective, there are a few locations where the pathway alignment would be better suited on one side of the road compared with the other (listed below). This list does not include environmental resources that are equally present on both sides of the road because these resources would not likely influence the alignment location.

- Wetlands at the Fremont River crossing on SR-24 (approximately MP 67). An old road alignment runs east-west on the north side of SR-24; if the pathway were to utilize this alignment, wetland impacts could be minimized. However, this would require a new crossing of the Fremont River.

(Conclusion - cont.)

- Wetlands on both sides of SR-24 east of Torrey (from approximately MP 69 to the junction with SR-12). Based on aerial photography and drainage patterns, it appears the extent of the wetland is greater on the north side of SR-24; therefore, the pathway would be better on the south side.
- Wetland on the west side of SR-12 just south of the junction of SR-24/SR-12 approximately 340 feet south of the intersection, continuing 500+ feet to the south. The pathway would be better on the east side.
- Torrey Canal on the south side of SR-24 through Torrey Town. It may be possible to fit the pathway between the road and the canal. If not, the pathway would be better on the north side.
- Cultural and paleontological sensitive area on the east side of SR-12. The pathway would be better on the west side.
- Potential cultural and paleontological sensitive area on the north side of SR-24. The pathway would be better on the south side if the site is determined eligible.

Additional Environmental Resource Survey Required

Cultural and Paleontological Resources

If NEPA compliance or a UDOT State Environmental Study is necessary, additional cultural resource surveys would be required as follows:

- Verification that previously completed surveys are still valid/acceptable
- Archaeological/paleontological survey on SR-12 between MP 119.5 and MP 120.3 (no survey exists)
- Architectural buildings survey if there is any potential of impacts within the historic boundary (generally the property boundary, including easements)

U.S. Waters

A wetland delineation and jurisdictional determination would be necessary for any section where wetlands could potentially be present and affected. The wetland survey would be prepared by a qualified wetland scientist and submitted to USACE. USACE would then issue a jurisdictional determination defining the boundaries of U.S. waters, including wetlands.

References

Barton, Jared. 2012. Personal communication via e-mail and telephone between Barton, UDOT Landscape Architect, and Andrea Clayton, Lochner, regarding wetlands and U.S. waters in the project area. 23 April.

Greenwood, Larry. 2012. Personal communication via e-mail and telephone between Greenwood, BLM Wildlife Biologist, and Andrea Clayton, Lochner, regarding special status species in the project area. 14 May.

Harmon, Craig. 2012. Personal communication via e-mail and telephone between Harmon, BLM Archaeologist, and Andrea Clayton, Lochner, regarding cultural resources and surveys in the project area. 5 March.

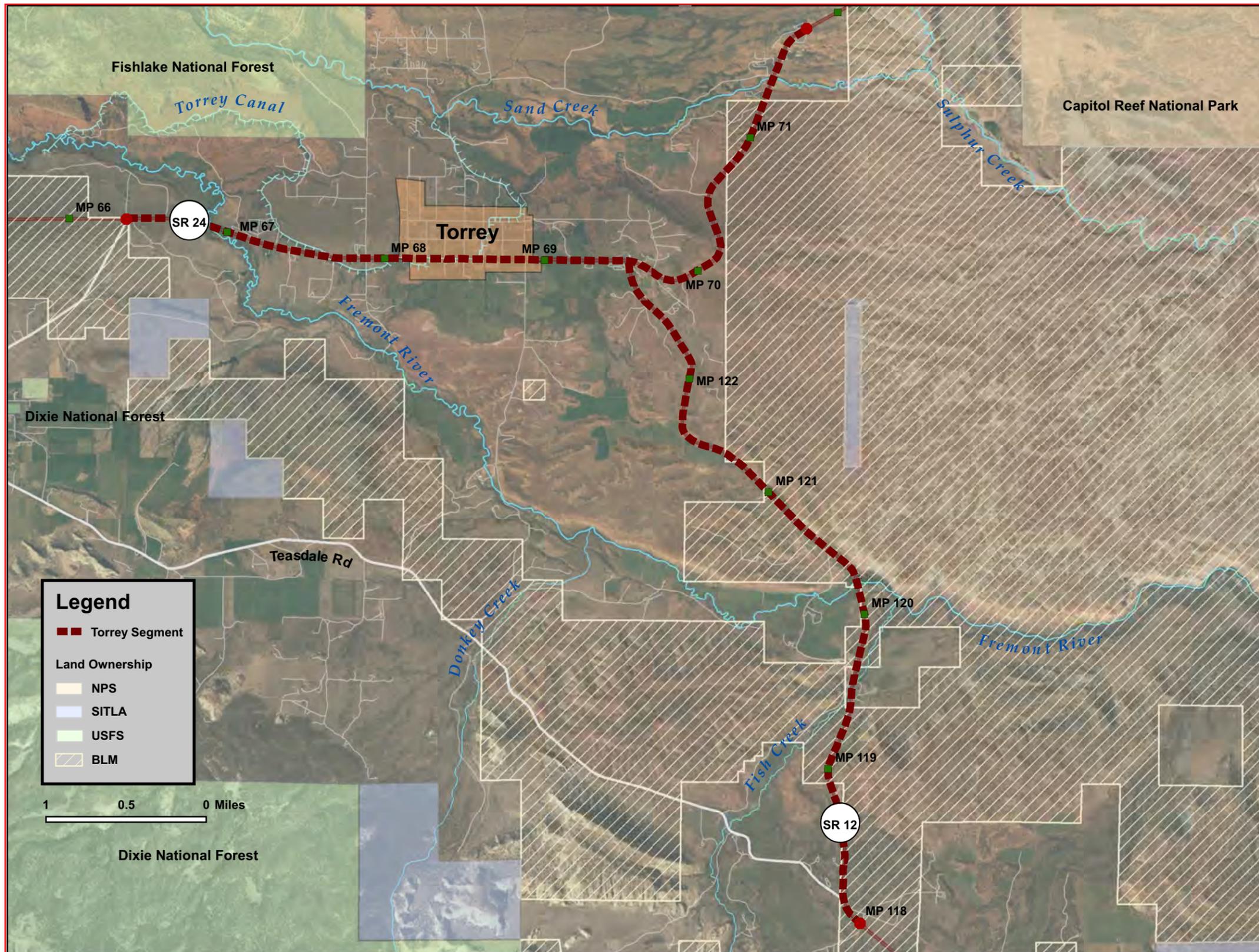
Higgins, Pam. 2012. Personal communication via e-mail and telephone between Higgins, UDOT NHPA/NEPA Specialist, and Andrea Clayton, Lochner, regarding cultural resources and surveys in the project area. 30 April.

West, Paul. 2012. Personal communication via e-mail and telephone between West, Wildlife Biologist, and Andrea Clayton, Lochner, regarding special status species in the project area. 17 May.

Environmental Overview

Torrey Segment Wayne County Connector





Notes:

Copies of original source documents are contained within the associated project files. Images contained in this report are for reference only and they have been reduced in size to fit the format of this document.

Date: 8/15/2013

Section 5

Environmental Overview
Figure 1

**Torrey Segment
Wayne County Connector**



Figure 1. - Project Location

Notes:

Copies of original source documents are contained within the associated project files. Images contained in this report are for reference only and they have been reduced in size to fit the format of this document.

Section 5

Date: 8/15/2013

Environmental Overview
Figure 2

**Torrey Segment
Wayne County Connector**

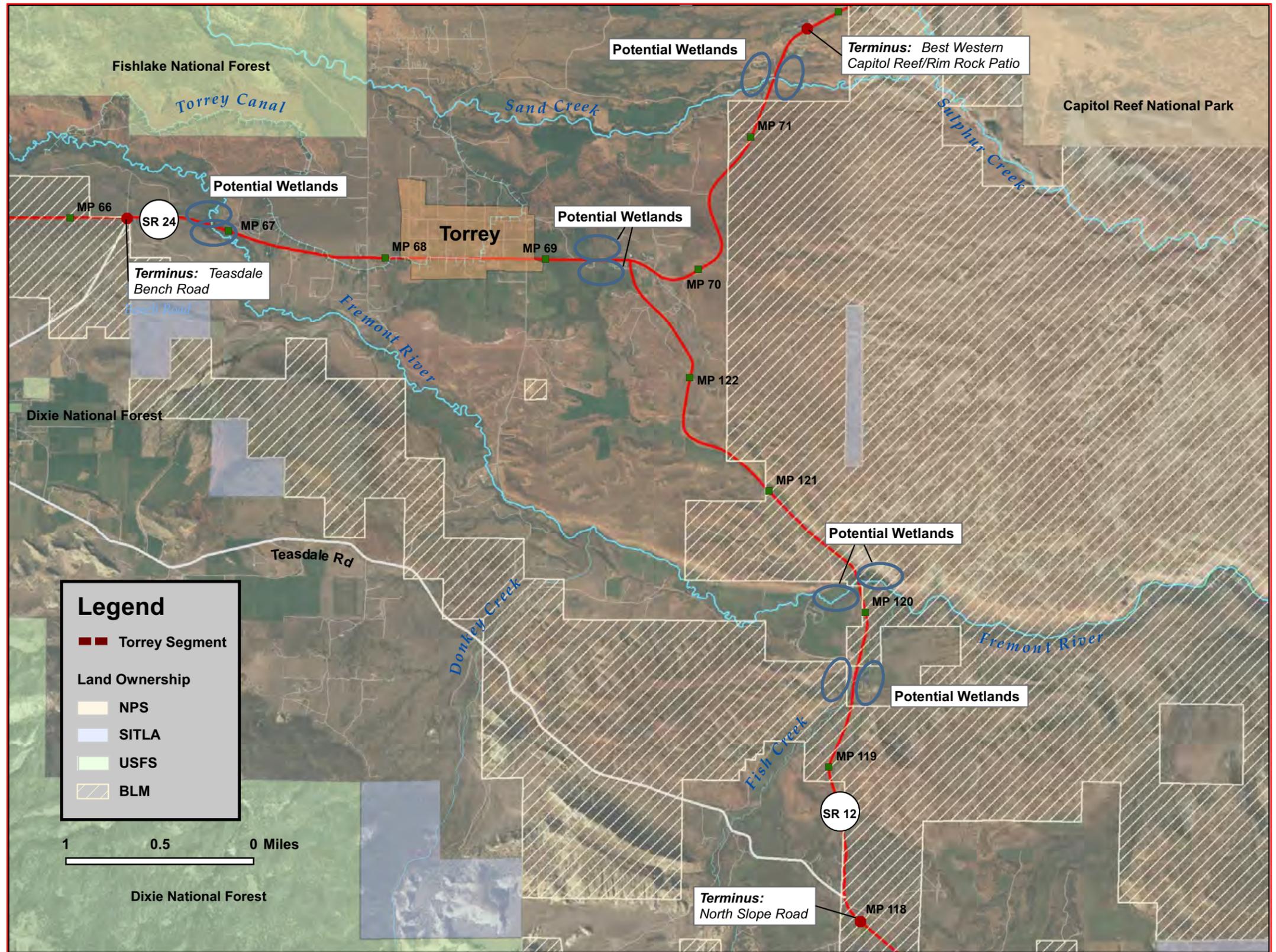
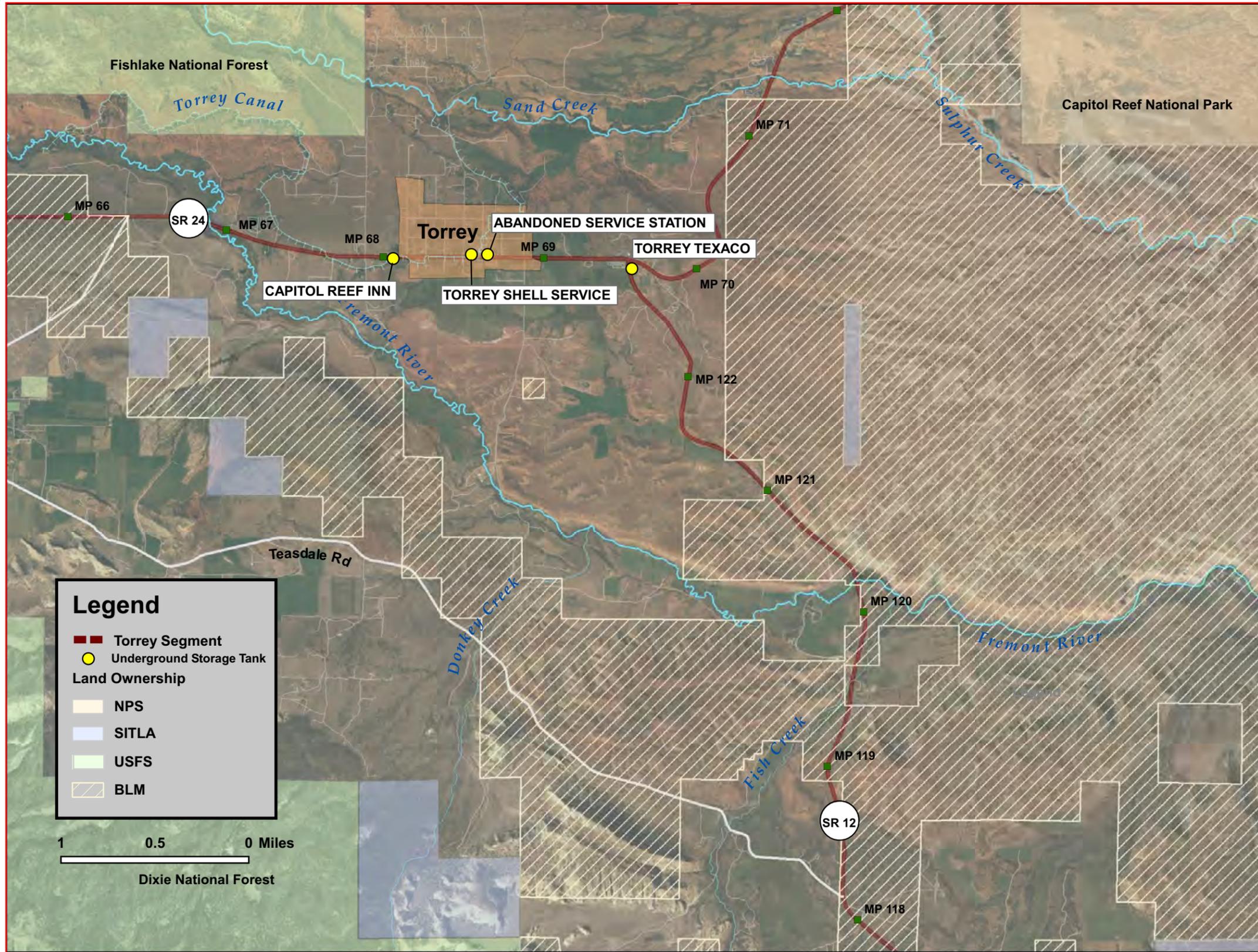


Figure 2. - Environmental Scan





Notes:

Copies of original source documents are contained within the associated project files. Images contained in this report are for reference only and they have been reduced in size to fit the format of this document.

Date: 8/15/2013

Section 5

Environmental Overview
Figure 3

**Torrey Segment
Wayne County Connector**



Figure 3. - Hazardous Materials

Notes:

Copies of original source documents are contained within the associated project files. Images contained in this report are for reference only and they have been reduced in size to fit the format of this document.

Actions:

A full wetland delineation, based on field investigations, will be required prior to final design. This delineation will need to be reviewed and approved by the U.S. Army Corps of Engineers. An approved delineation will be valid for a period of five (5) years from the date of acceptance by the Corps.

Additional permits will be required prior to construction activities in areas delineated as a jurisdictional wetland.

Environmental Overview
Wetland Investigation

Torrey Segment
Wayne County Connector



Clayton, Andrea

From: Jared Barton <jaredbarton@utah.gov>
Sent: Monday, April 23, 2012 8:31 AM
To: Clayton, Andrea
Subject: Re: Wayne County Connector - wetland delineation
Attachments: SR-24; Wetland Delineation for Shouldering .pdf

Hi Andrea;
See attached file. This was a quick and dirty approval for shouldering/wasting excess material from the SR-12; Torrey Curve project.
A formal wetland delineation report was never generated for the location since the schedule was very aggressive. Instead the Army Corps (Amy DeFreeze) came onsite, took some soil samples with me and agreed upon a method for determining artificially created wetlands vs. natural spring fed wetlands. At a later date, I returned and took several more soil samples and photos. I generated and submitted the attached package to the Corps. The Corps never responded with a formal letter but we did speak over the phone several times for approval.
The wetland boundaries were never GPS located but instead the pipe ends were used as a point of origin with an offset distance. This gave our UDOT Maintenance staff and contractor the area not to shoulder. The inlet of the pipe is at MP 69.58. The actual wetland boundary would likely be smaller than shown on the sketch if formally delineated. I'm unaware of any other delineations done in the area but UDOT also avoided a wet meadow area just south of the SR-12/SR-24 junction along the west side of the road. It begins approximately 340 feet south of the intersection and continues for 500+ feet. You can easily see it on Google Earth.

For Cultural/Paleo resources on this project contact Pam

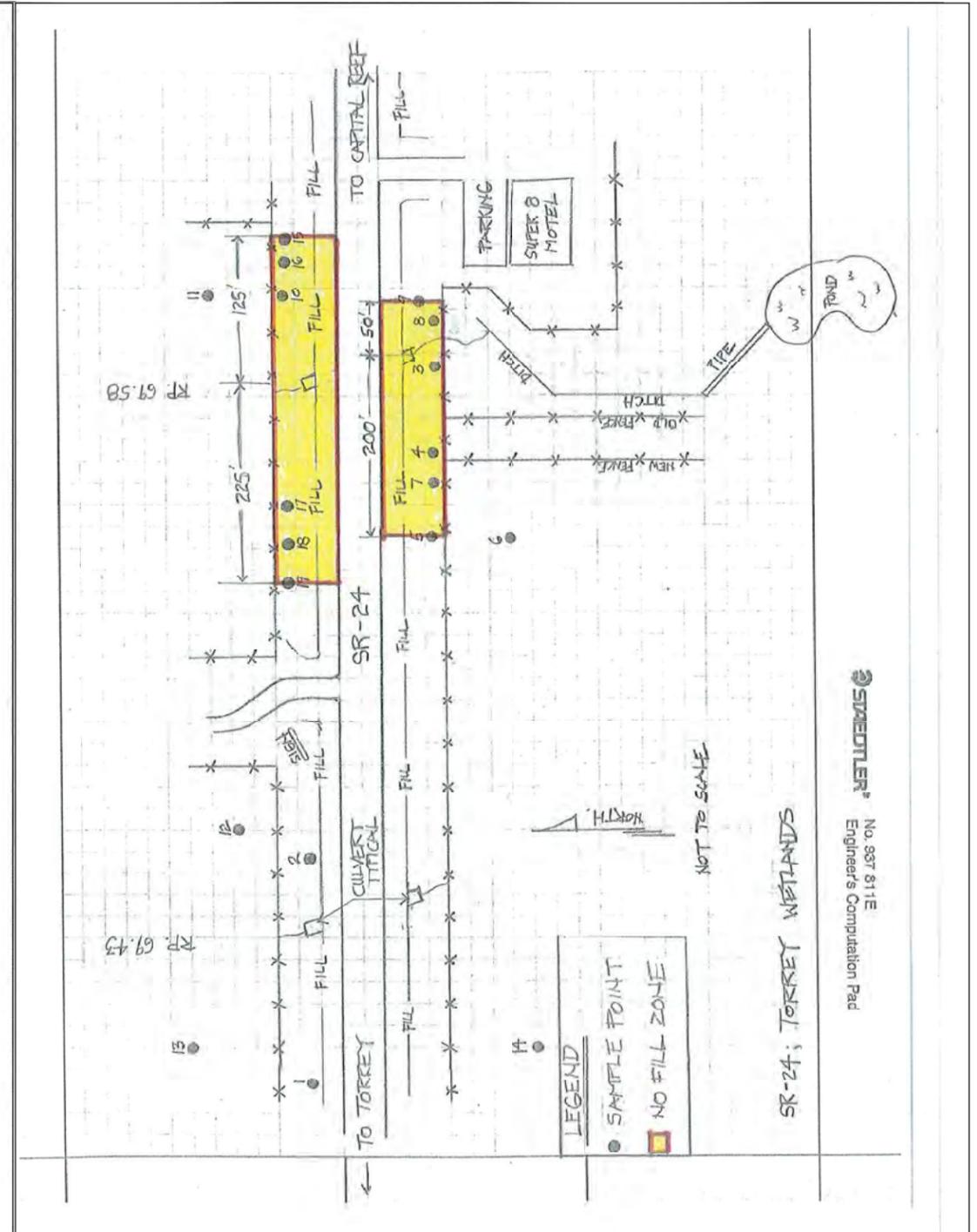
Hope this helps,
Jared

Jared Barton
UDOT Region Four
Landscape Architect / Environmental Team Leader
210 West 800 South
Richfield, Utah 84701
Ph. (435) 893-4741
Fax (435) 896-6458
jaredbarton@utah.gov

Please Note: To better serve the public, our agency hours are 8:00 a.m. to 5:30 p.m., Monday through Friday.
>>> "Clayton, Andrea" <aclayton@hwlochner.com> 4/20/2012 3:00 PM >>>
Hi Jared,

I am gathering any data available within the limits of the Wayne County Pathway Project (map attached). Could you send me a copy of the wetland delineation you did on SR-24? I would love to have a copy of the JD if possible, and MicroStation or GIS files would be even better. Do you by chance have any other wetland data on SR-24 or SR-12 within the area?

Do you know if I should ask Pam or Eric about cultural surveys in the area?



UDOT Wetland Investigation Exhibit

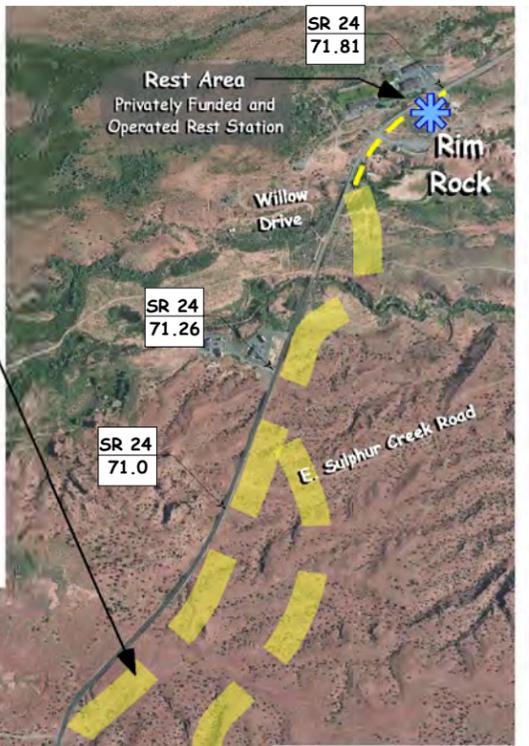
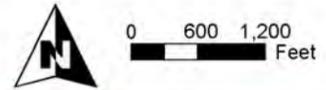
Legend

- Road Crossing**
At-grade crossing with marked crosswalks and signage.
- Information Station**
Trailhead junction with directional signage and limited facilities.
- River Crossing**
New Bridge structure with scenic overlook and interpretive signage opportunities.
- Rest Area**
Potential for a privately funded and operated Rest Station along pathway corridor.
- Visitor Information Facility**
Potential County facility with shared office space and services.
- Proposed Bridge Structure**
Manufactured steel and wood bridge to cross river.
- Recommended Pathway Alignment**
Specific location and design details to be determined within current and future design efforts.
- Expanded Width Study Corridor**
Pathway alignments East of Torrey along S.R. 24 to be determined within a broader study corridor. Path may diverge from roadway by greater distances to enhance safety and user experiences.

UDOT Milepost Marker Reference

Widened Pathway Study Corridor - Mile Marker 69.71 to Mile Marker 71.81
Pathway location in this segment is located south and east of the S.R. 24 right-of-way. Pathway may cross BLM parcels or private property in some areas and utilizes existing unimproved road corridors where possible. Right-of-way clearances, user safety, topography, natural drainages and ownership patterns create challenges to placing the pathway alongside the existing State roadway. The pathway should generally parallel S.R. 24 but the study corridor should be expanded in future phases of design to identify and create a scenic pathway experience within this segment of the corridor. Scenic and recreational values should take preference over shortest distance routing.

* All distances and areas related to drawing scale are approximate based on limitations of the base materials and photographic images.



6-1 Preferred Alignment



Preferred Pathway Alignment Along S.R. 24

Torrey Main Street Alignment - 300 West to 300 East
In this area the preferred Pathway alignment includes a 5' pedestrian walkway along the southern right-of-way line of S.R.24 with on-street bicycle lanes alongside the roadway shoulders. Impacts to the canal and displacement of parking should be minimized.

Preferred Alignment

Upon completion of the corridor use analysis and routing options for the Torrey Segment of the Wayne County Connector, an overall review of the corridor was presented to the Steering Committee for review and input. A preferred alignment was chosen to guide the future design decisions for the pathway. This exhibit represents the preferred location for the pathway along the State Road 24 corridor. It is anticipated that the pathway will begin as a 10' wide, multi-use path at Teasdale Bench Road and that it will be separated from the roadway along the initial segment on the northern edge of the right-of-way until it reaches Sand Creek Road.

Within this segment the pathway changes to a pedestrian walkway and on-street bike lanes through the town center of Torrey (see detailed discussion and drawings in Sections 8 and 9 of this study). At approximately 300 East the pathway again becomes a 10' wide multi-use path that is separated from the roadway and located along the southern edge of the UDOT right-of-way line. A detailed description of recommended improvements for the SR 24 pathway is shown on page 6-3.

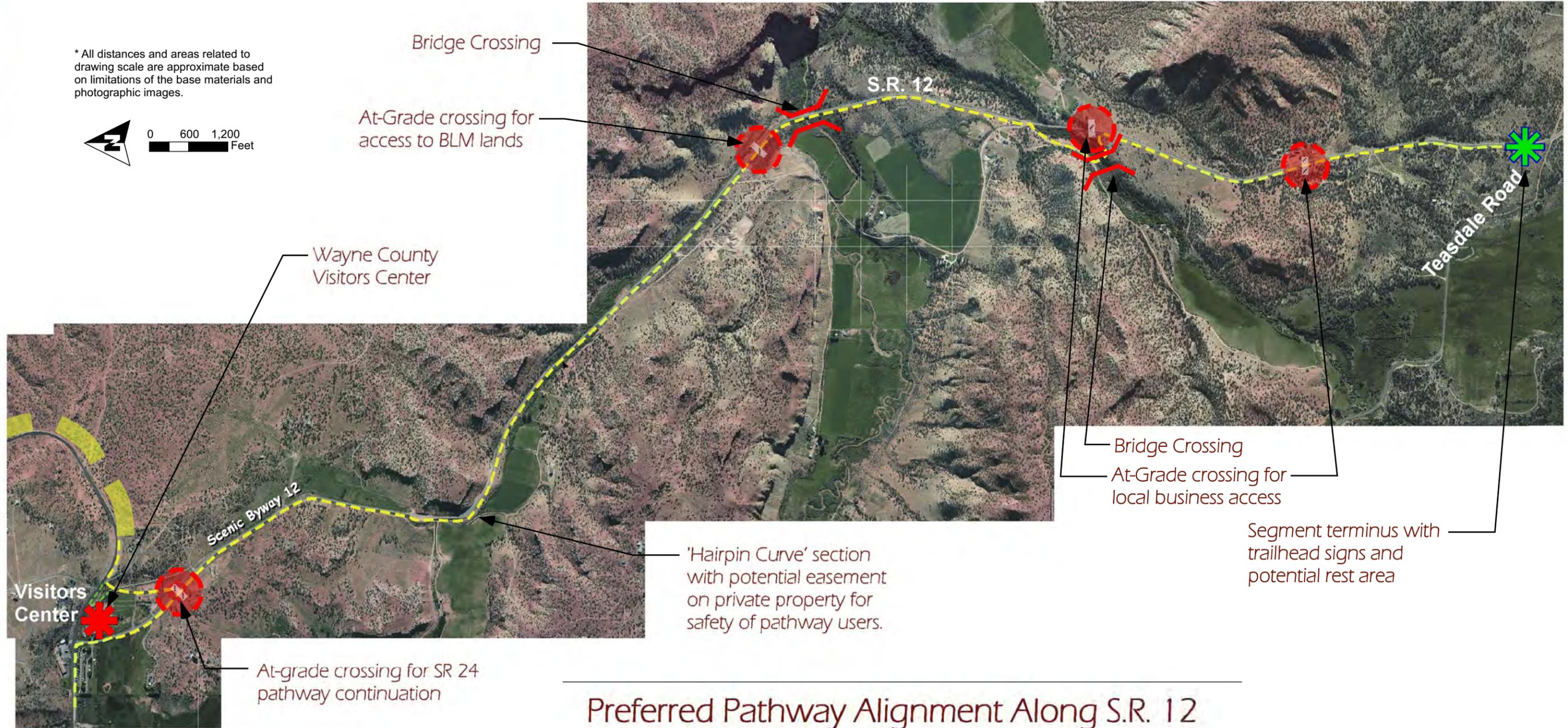
The pathway will be located on publicly owned lands and rights-of-way throughout this segment.

Preferred Alignment

Torrey Segment Wayne County Connector



* All distances and areas related to drawing scale are approximate based on limitations of the base materials and photographic images.



Preferred Pathway Alignment Along S.R. 12

Section 6

Date: 8/15/2013

Preferred Alignment S.R. 12

Torrey Segment Wayne County Connector

Preferred Alignment

Upon completion of the corridor use analysis and routing options for the Torrey Segment of the Wayne county Connector, an overall review of the corridor was presented to the Steering Committee for review and input. A preferred alignment was chosen to guide the future design decisions for the pathway. This exhibit represents the preferred location for the pathway along the State Road 12 corridor. It is anticipated that the pathway will be a 10' wide, multi-use path that is separated from the roadway along the entirety of this segment and that it will be located along the western edge of the right-of-way.

Within this segment there will be the need to construct two bridge crossings at major drainages and several at-grade road crossings to access businesses along the eastern side of the roadway.

The pathway will be located on publicly owned lands and rights-of-way throughout this segment with the exception of the 'hairpin curve' location that is noted in the exhibit. Cooperation with the adjacent landowner may be necessary to construct the pathway in the safest location given the limited right-of-way width, the steep side grades and the limited sight distance along the roadway. Placement of the pathway on private property should be minimized and should only be completed with the full cooperation of the adjacent landowner in granting a public use easement for the path. The pathway should be located adjacent to the right-of-way fence line to limit the extent of the intrusion.



S.R. 24 Preferred Alignment Description By Mile Marker

Beginning Mile Marker	Ending Mile Marker	Segment Location	Recommended Location of Pathway	Description of Improvements Considered for Segment
66.37	66.74	SR 24 between Teasdale Bench Road and and the Fremont River	North side of the SR 24 right-of-way	10'- wide, multi-use paved pathway, separated from the roadway, lying within the UDOT right-of-way
66.74	67.06	Fremont River bottom West of Torrey	Within the abandoned right-of-way of the old highway alignment	10'- wide, multi-use paved pathway within the abandoned UDOT right-of-way with a pre-fabricated pedestrian bridge located at the old roadway bridge abutments
67.06	67.89	Fremont River bottom to Sand Creek Road intersection	North side of the SR 24 right-of-way	10'- wide, multi-use paved pathway, separated from the roadway, lying within the UDOT right-of-way of SR 24
67.89	68.15	Sand Creek Road Intersection to 300 West intersection	South side of the SR 24 right-of-way	10- wide, multi-use paved pathway, separated from the roadway, lying within the UDOT right-of-way
68.15	68.88	300 West intersection to 300 East intersection within the town of Torrey	North and South sides of the roadway, within the SR 24 right-of-way	Marked bike lanes along the North and South roadway edge with a 5' wide paved walkway for pedestrians along the southern edge of the right-of-way
68.88	69.16	300 East Intersection of Torrey to the wetland area East of the town center	South side of the SR 24 right-of-way	10'- wide, multi-use paved pathway, separated from the roadway, lying within the UDOT right-of-way
69.16	69.27	Within the wetland area East of Torrey town center	South side of the SR 24 right-of-way	8'- wide, multi-use elevated trestle boardwalk pathway, separated from the roadway, lying within the UDOT right-of-way
69.27	69.53	Red Sands Hotel to the intersection of SR 24 and SR 12	South side of the SR 24 right-of-way	10'- wide, multi-use paved pathway, separated from the roadway, lying within the UDOT right-of-way. On-grade road crossing required at the intersection allowing sfe access to the commercial areas north of the SR 24 roadway and easterly to the joint Information Center and parking area.
69.53	69.71	West of SR 24 and SR 12 Intersection to the access drive for Sky ridge Bed and Breakfast	No Improvements planned in this section.	Pathway will proceed south along SR 12 R.O.W. before returning to SR 24 at milepost 69.71 through the Torrey City owned parcels.
69.71	71.81	SR 24 West of Sky Ridge Bed and Breakfast access drive to Rim Rock restaurant parking area.	Pathway to be located South and East of the SR 24 R.O.W.	Topography and roadway clearances in this area require the pathway to be located outside of the existing right-of-way. Additional survey information, ownership analysis and alignment studies will be required to identify a safe alignment for a 10' wide multi-purpose pathway separated from the roadway.

SR 12 Alignment Note:

The preferred location for the pathway along the State Road 12 corridor is anticipated to be a 10' wide, multi-use path that is separated from the roadway along western edge of the right-of-way throughout its entire length.

The pathway will be located on publicly owned lands and rights-of-way throughout this segment wherever possible. One exception is highlighted on page 6-2 at the "hairpin turn".

Further descriptions and details are not required at this point in the study process.

Date: 8/15/2013

Section 6

Preferred Alignment

Torrey Segment Wayne County Connector



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Extent of Phase One Design Segment



Thousand Lakes RV Park
Milepost 67.19

Intersection of S.R. 24 and S.R. 12
Milepost 69.53

Preferred Location of Initial Phase of Design and Construction

Phase One

After completion of the Public Open House process and the corridor use analysis, including the environmental overview, a preliminary routing location for the pathway projects was identified (see Section 6). Within that preliminary routing it was necessary to identify a segment of the pathway project where final design and initial construction could be focused.

The decision was based on an analysis and discussion of the following parameters:

- improvements resulting in increased user safety
- support for tourism activities and economic development
- visibility to the public as a means of building future support
- protection of private property rights by using existing R.O.W.

After completion of the Public Open House process and the corridor use analysis, including the environmental overview, a preliminary routing location for the pathway projects was identified (see Section 6). Within that preliminary routing it was necessary to identify a segment of the pathway project where final design and initial construction could be focused.

Date: 8/15/2013

Section 7

Phase One

Initial Area of Construction

Torrey Segment Wayne County Connector



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Image 8-1-a Main Street - Torrey - Existing Conditions

Conditions along the Main Street area of Torrey's downtown corridor presented challenges to locating a 10' wide pathway. Issues considered included the existing canal, trees and parking patterns. Alternative options were developed for consideration within this specific section of the corridor.



Image 8-1-b S.R. 24 West of Downtown Torrey

Right-of-way limitations and the proximity of the existing canal to the roadway presented design challenges between Sand Creek Road and 200 West in Torrey.

Wayne County Connector Phase One

Following the inventory of existing conditions and analysis of the pathway corridor study area the design team was tasked to identify a Phase One pathway segment suitable for initial construction. The area between the Thousand Lakes RV Park and the intersection of S.R. 12 was identified as the most important segment to initiate the design and construction process.

After review by the Steering Committee it was agreed that this would be the segment that would have the most immediate impact with respect to public safety, beneficial use by area residents and support for economic development based on its proximity to tourism focused services.

This 2.3 mile segment of the corridor was then evaluated to determine the options for positioning of the pathway along the roadway corridor. The results included in this section were originally submitted as part of Lochner's "FINAL MEMO - PRELIMINARY ENGINEERING FOR PHASE 1".

Design Options for Phase One

Based on the detailed investigation of the 2.3 mile initial phase and input from Wayne County, UDOT and Torrey it was determined that a ten foot wide, multi-use pathway that would be separated from the roadway surface could not be placed along the entire segment. Conflicts with existing conditions such as the canal, the Cottonwood trees, parking along the roadway shoulder, potential wetland impacts and the limitations of the existing right-of-way would require a range of design options to implement a successful transportation solution for pedestrians and bicycles.

The options identified for this segment of the pathway included the following approaches to construction:

- a 10' pathway separated from the roadway surface located on the northern edge of the right-of-way from 1000 Lakes RV to the intersection of Sand Creek Road
- on street bike lanes on either side of the roadway with a sidewalk type pedestrian pathway along the southern edge of the right-of-way within the Main Street corridor of Torrey's town center
- a 10' pathway separated from the roadway surface located on the southern edge of the right-of-way from approximately 300 East in Torrey to the intersection of S.R. 12, including the potential need for a trestle or boardwalk system within the wetland areas situated west of the Red Sands Hotel property

Each of these options was evaluated based on preliminary engineering design and costing. These initial design studies were submitted to UDOT for review and then presented to the Steering Committee, along with UDOT's review comments for a final determination of the best course of action to take to the preliminary design stage.

The following pages of this section of the feasibility study presents a summary overview of the options that were submitted to UDOT for review. (See pages 9-20 and 9-21 for copies of UDOT correspondence).



Image 8-1-c S.R. 24 North Side of R.O.W.

The right-of-way corridor between Thousand Lakes RV park and Sand Creek Road is wide enough to allow a siting of a multi-use pathway between the northern edge of S.R. 24 and the right-of-way fence line.

Date: 8/15/2013

Section 8

Initial Phase Design Options

Torrey Segment Wayne County Connector



Phase One Preliminary Engineering Options

Corridor Alignment

A planning-level routing alignment was developed for the entire Torrey Segment. A 10-foot-wide shared-use path (for bicycle and pedestrian travel in two directions) was the recommended facility type. Corridor routing alignment information included the following:

- Which side of the road the path should be located
- Whether the path should be adjacent and parallel to the road or separated from it
- Road crossing locations
- Information station locations
- Potential trailheads and rest areas

Corridor routing alignment information did not include details on the cross section (i.e., the proposed distance between the road and the path).

Phase 1 - Preliminary Engineering

Once the routing alignment was established, a decision was made to focus preliminary engineering design efforts on the highest priority section within the Torrey Segment. There is currently no facility in Torrey to safely accommodate pedestrians or bicyclists; there is no sidewalk and the shoulder is narrow and unpaved. This high-priority section, referred to as Phase 1, extends roughly 2.4 miles along SR-24 from the Thousand Lakes RV Park on the west to the junction of SR-24 and SR-12 on the east (see Figure 1 in Appendix A). These limits were selected because there is a demand from visitors staying at the RV park or hotels near the junction to walk or ride their bicycles into town. This memorandum is focused on Phase I located within the Torrey Segment.

Preliminary Engineering Methodology

No topographical surveys were conducted for the feasibility study due to budget limitations. Preliminary engineering is based on measurements taken in the field at “choke points” (locations with the tightest constraints, such as the canal). Right-of-way lines were established based on previous project plans provided by UDOT.

SR-24 is a state route controlled by UDOT. As such, design standards are based on UDOT guidelines and are taken from the 2012 American Association of State Highway and Transportation Officials (AASHTO) Guide for Developing Bicycle Facilities. UDOT uses a standard form for project design criteria (PDC). The PDC for the shared-use path in Phase 1 is shown on page 9-2 and 9-3.

Design Options Considered

- Design options were considered in the following 2 sub-sections of Phase 1:
- The area constrained by the canal (Sand Creek Road to 300 E)
 - The section containing wetlands (300 East to Red Sands Motel)

Following evaluation of the design options, a preferred option was identified and incorporated into preliminary design recommendations for Phase 1. The reasoning for selecting the preferred option is described below.

Sand Creek Road to 300 East

One of the most constrained sections in Torrey is where the canal is adjacent to the road (roughly between Sand Creek Road and 300 East). After reviewing the proposed routing alignment, UDOT recommended the path be located on the back side of the canal between the trees and the right-of-way fence (see correspondence dated July 16, 2012, in original Memo). Wayne County’s initial preference for the path location was between the road and the canal. Four design options were evaluated in this section, as described in Table 1 (see Table 1 on Sheet 8-3). A preliminary alignment, cross section, and cost estimate are available for each option.

The options were discussed in a conference call with Torrey Town, Wayne County, and RTCA on January 23, 2013, and in a meeting with the same parties and UDOT on January 29, 2013. Following these meetings all parties agreed that Option 1 is the preferred option. Robert Dowell of UDOT issued an email, dated February 15, 2013, confirming UDOT’s concurrence with this decision.

300 East to Red Sands Motel (Wetlands)

There are wetlands east of Torrey along SR-24 near MP 69.5. UDOT informally consulted with the U.S. Army Corps of Engineers (USACE) and designated a “no fill” area on both sides of SR-24 (250 feet long on the south side). The “no fill” area encompasses potential jurisdictional wetlands (see Environmental Scan Memorandum dated June 28, 2012, for detail).

The right-of-way from 300 East to the Red Sands Motel is less constrained than the section between Sand Creek Road and 300 East. A shared-use path adjacent to the south right-of-way fence is recommended in this area. Two design options were evaluated through the wetland area, as described in Table 2 (see page 8-3). A preliminary alignment, cross section, and cost estimate are available for each option.

The options presented in Table 2 were discussed with representatives of Wayne County, Torrey, RTCA, and UDOT. The preferred option will come down to what is the most economical and can be permitted. Placing fill in a wetland will require a Section 404 Permit from USACE and mitigation for impacts. To obtain a permit, a wetland delineation and coordination with USACE regarding alternatives will be necessary during final design.

Initial Phase Design Options

Torrey Segment Wayne County Connector



Table 1: Sand Creek Road to 300 East Design Option Comparison

Location	Description ¹	Advantages	Disadvantages	Cost ²
Option 1: Bike lanes with offset sidewalk (preferred option)	6-foot-wide bike lane adjacent to the travel lane in each direction (on both sides of the road) and a 5-foot-wide separated sidewalk for pedestrians behind the canal	No impacts to private property or canal Fewest conflicts with driveways and parking	Requires transition from shared-use path to bike lanes with separated sidewalk on both east and west end	\$540K
Option 2: Shared-use path between canal and right-of-way fence	10-foot-wide shared-use path south of the canal; 2-foot minimum clearance required between trees and path	Allows for future roadway expansion if necessary No impacts to canal Consistent facility type through Phase 1 (no transition from bike lanes to shared-use path)	Private property acquisition necessary (roughly 6 feet from each property) No local support Conflicts with driveways ³ and parking	\$500K
Option 3: Shared-use path between road and canal	10-foot-wide shared-use path between the road and canal; 5-foot minimum clearance required between edge of paved road and path	No impacts to private property Consistent facility type through Phase 1 (no transition from bike lanes to shared-use path)	Path would encroach on the canal (decreasing the capacity by roughly half and impacting the historic character) Conflicts with driveways ³ and parking Most expensive option due to wall cost	\$790K
Option 4: Two-way cycle track with offset sidewalk	10-foot-wide bicycle path for travel in both directions physically separated from the road (by a curb or bollards) and a 5-foot-wide separated sidewalk for pedestrians behind the canal	No impacts to private property	Path would encroach on the canal (decreasing the capacity by roughly half and impacting the historic character) Conflicts with driveways ³ and parking Physical separation (e.g., curb) would be problematic for maintenance and parking	\$790K ⁴

1. A shared-use path would accommodate bicycles and pedestrians traveling in both directions. Bicycle lanes would accommodate bicycles traveling in one direction only.
2. Rough order of magnitude cost includes preliminary engineering, right-of-way, construction, and construction engineering inspection (for section from Sand Creek Road to 300 East in 2012 dollars).
3. Drivers are not accustomed to looking for bicycles coming from two directions (in the lane closest to them) when they back out of driveways; bikes traveling in both directions close to the driveway creates a potential conflict.
4. Cost estimate was not developed specifically for Option 4; it would be similar to Option 3.

Table 2: 300 East to Red Sands Motel Design Option Comparison

Location	Description ¹	Advantages	Disadvantages	Cost ²
Option 1: Boardwalk	12-foot-wide elevated boardwalk (wood) constructed on piles	Does not require filling in wetland Wetland hydrology is maintained Easier to permit ³ (USACE does not consider a boardwalk on piles to be "fill")	Higher construction cost More difficult to maintain Riding surface not as smooth as asphalt	\$240K
Option 2: Fill	10-foot-wide shared-use path (asphalt) constructed on fill material; 2-foot shoulders	Lower construction cost Easier to maintain	Requires filling in wetland Disrupts wetland hydrology More difficult to permit ³ Would require mitigation	\$120K

1. Preliminary alignment and cross section available in original Engineering Memo.
 2. Rough order of magnitude cost includes preliminary engineering, wetland mitigation, construction, and construction engineering inspection.
 3. A Section 404 Permit from USACE would be required for impacts to wetlands.

Determination of Preferred Option for Phase One

After the completion of the design and cost estimates for the various options it was determined that the preferred solution within the constrained areas of Main Street in Torrey would be Option 1. This Option provided bike lanes on either side of the existing roadway (per AASHTO standards) while pedestrians would be accommodated on a 5 foot paved walkway along the southern right-of-way line of S.R. 24. This would allow for the preservation of the existing canal banks, the Cottonwood trees and the commercial parking zones. The addition of a future paved walkway on the northern side of the right-of-way would be a potential future improvement. All other areas of Phase 1 would be built as a 10' wide shared use pathway.

References

American Association of State Highway and Transportation Officials. 2011. A Policy on Geometric Design of Highways and Streets, 6th Edition.

American Association of State Highway and Transportation Officials. 2012. Guide for the Development of Bicycle Facilities, 4th Edition.

National Association of City Transportation Officials. 2012. Urban Bikeway Design Guide, 2nd Edition.

Date: 8/15/2013

Section 8

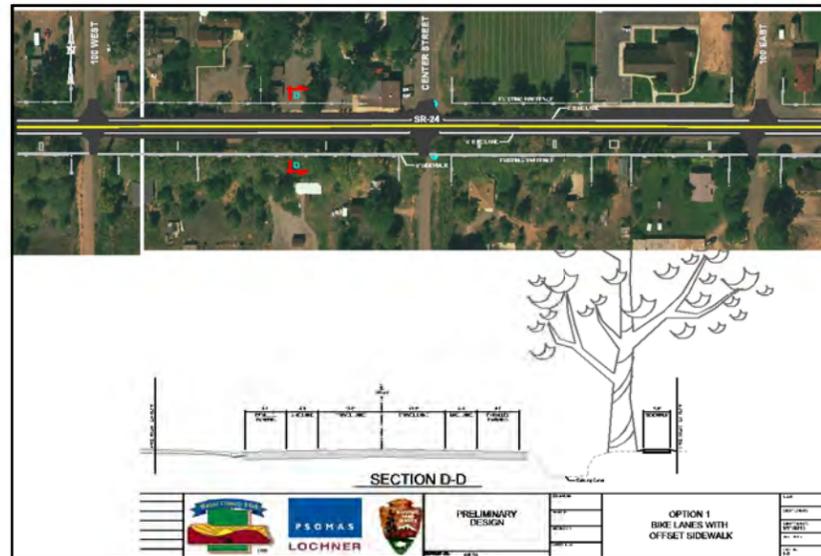
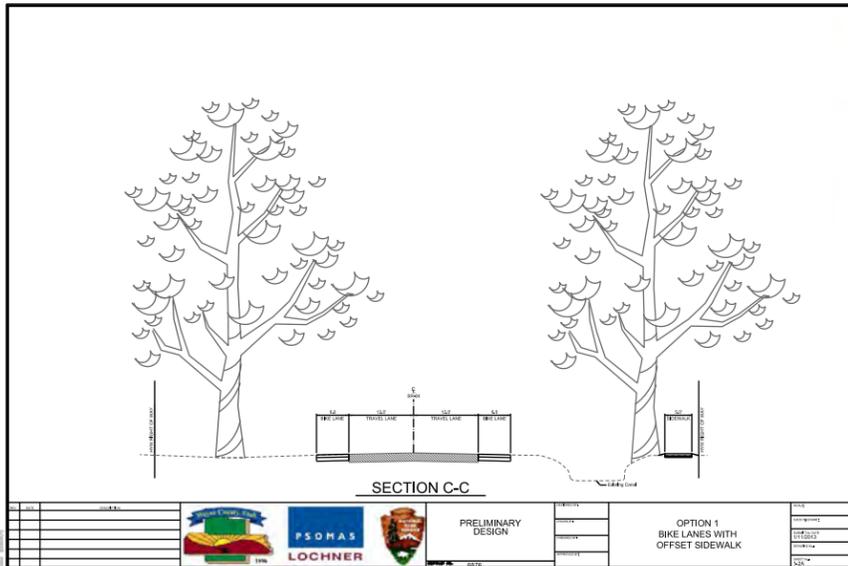
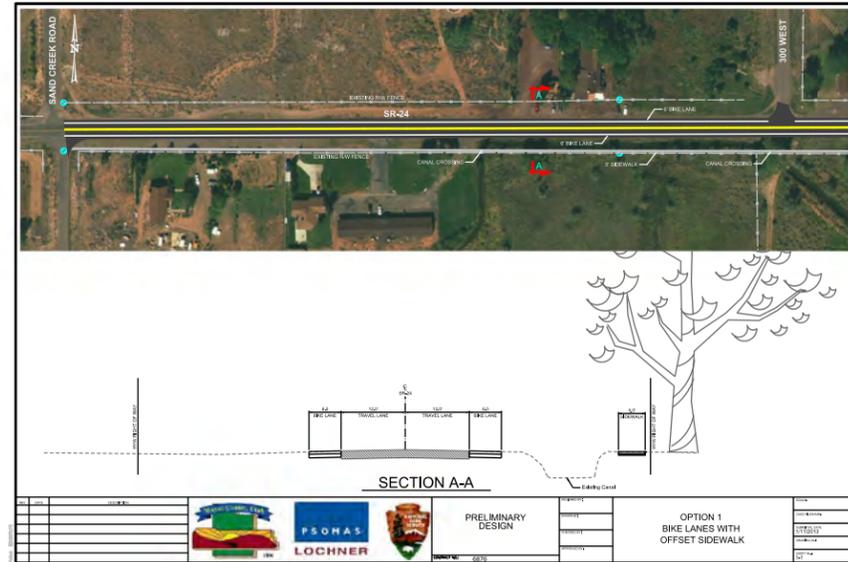
Initial Phase Design Options

Torrey Segment Wayne County Connector



Design Option '1' - Bike Lanes with Offset Sidewalk

This Option proposes the construction of a 6-foot-wide bike lane, adjacent to the existing travel lanes, in each direction (on both sides of the road) and a 5-foot-wide, separated sidewalk for pedestrians located behind the canal and trees adjacent to the southern right-of-way line/property line.



Option 1 Cost Estimate - Concept Level			
Prepared By	Date	3/31/2013	
Approximate Route Reference Post (BEGIN) =	67.889	(END) =	68.883
Accumulated Mileage (BEGIN) =	67.889	(END) =	68.883
Project Length =	0.994 miles		5,248 ft
Current Year =	2012		
Assumed Construction Year =	2016		
Construction Items Inflation Factor =	1.23	4 yrs for inflation	
Assumed Yearly Inflation for Engineering Services (PE and CE) (%/yr) =	2.5%		
Assumed Yearly Inflation for Urban Residential Right of Way (%/yr) =	0.0%		
Assumed Yearly Inflation for Urban Commercial Right of Way (%/yr) =	0.0%		
Assumed Yearly Inflation for non-Urban Right of Way (%/yr) =	0.0%		
Items not Estimated (% of Construction) =	20.0%		
Preliminary Engineering (% of Construction + Incentives) =	8.0%		
Construction Engineering (% of Construction + Incentives) =	10.0%		

Construction Items	Cost	Remarks
Roadway and Drainage	\$340,956	
Traffic and Safety	\$0	
Structures	\$0	
Environmental Mitigation	\$0	
ITS	\$0	
	Subtotal	\$340,956
	Items not Estimated (20%)	\$68,191
	Construction Subtotal	\$409,147
P.E. Cost	P.E. Subtotal	\$32,732 8%
C.E. Cost	C.E. Subtotal	\$40,915 10%
Right of Way Urban Suburban Commercial	Right of Way Subtotal	\$0
Utilities	Utilities Subtotal	\$0
Incentives	Incentives Subtotal	\$0
Miscellaneous	Miscellaneous Subtotal	\$0

Cost Estimate (ePM screen 505)	2012	2016
P.E.	\$33,000	\$36,000
Right of Way	\$0	\$0
Utilities	\$0	\$0
Construction	\$409,000	\$502,000
C.E.	\$41,000	\$45,000
Incentives	\$0	\$0
Aesthetics	1% \$4,000	\$5,000
Change Order Contingency	9% \$37,170	\$46,000
UDOT Oversight	\$0	\$0
Miscellaneous	\$0	\$0
TOTAL	\$524,170	\$634,000

PROPOSED COMMISSION REQUEST	TOTAL	TOTAL
	\$524,170	\$634,000

Note:
See Lochner's May 10, 2013 "Final Memo" for the "Wayne County Connector: Trail Pathway System - Torrey Segment Preliminary Engineering For Phase 1" for detailed drawing and cost estimates. This section of the Feasibility Study presents a summary of the engineering documents.

Section 8 Date: 8/15/2013

Initial Phase Design Options

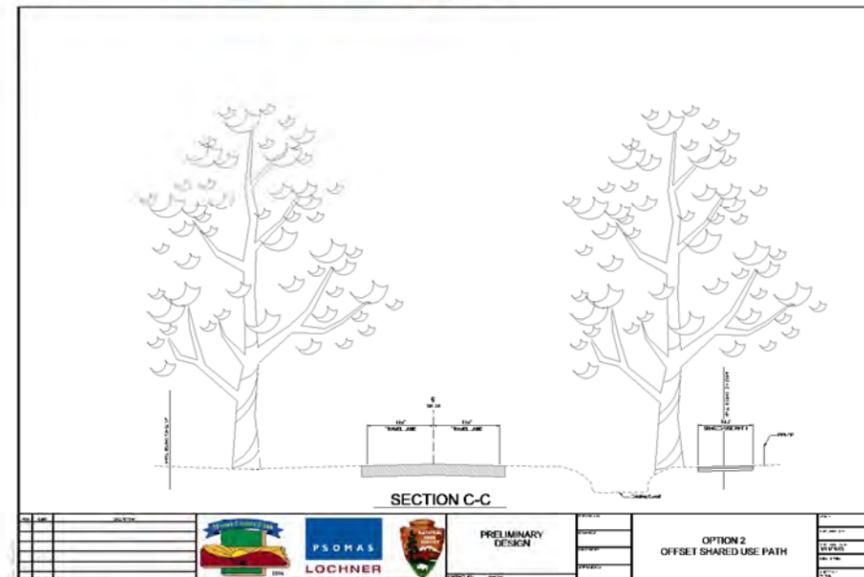
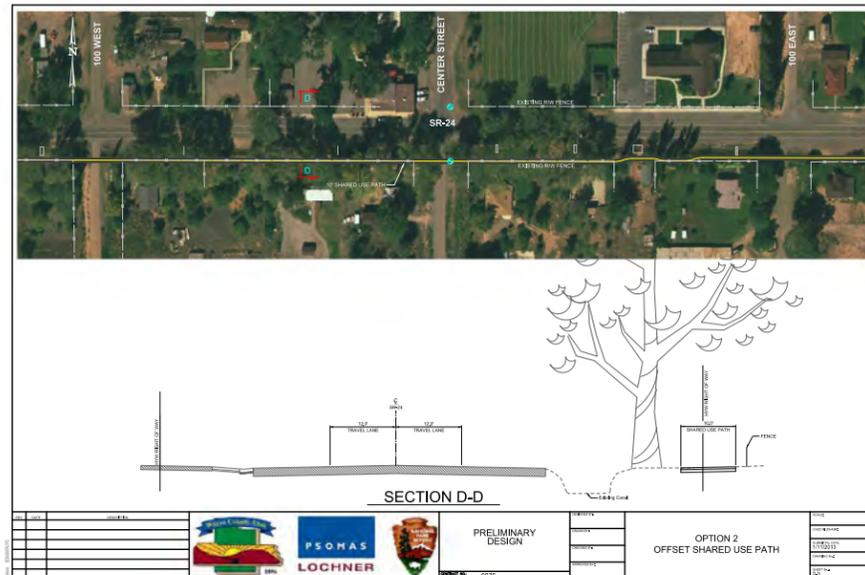
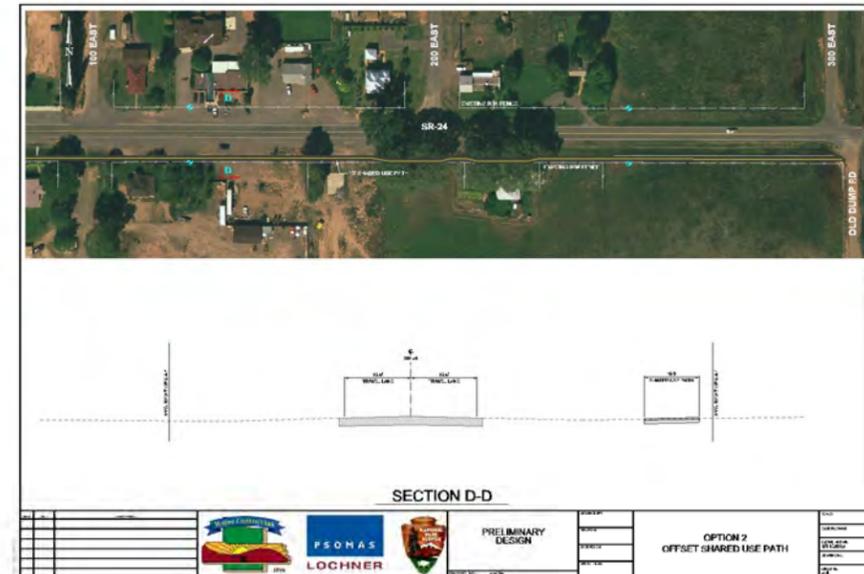
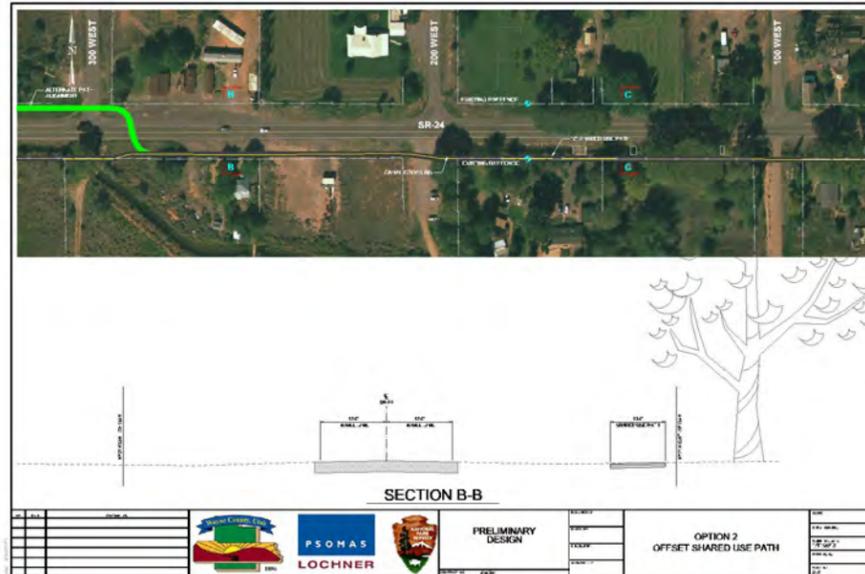
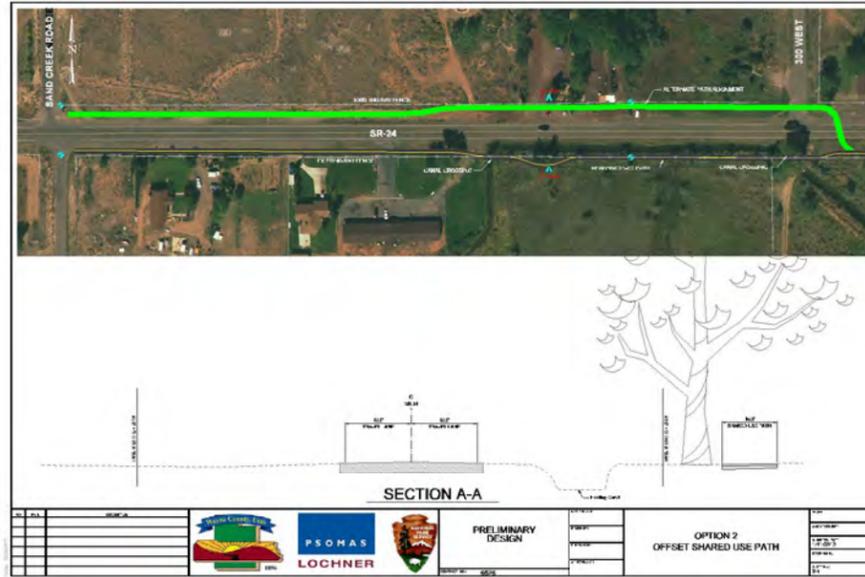
Torrey Segment Wayne County Connector



Design Option '2' - Offset Shared Use Path

This Option proposed a shared-use pathway located between the canal and trees and the southern right-of-way fence.

A 10-foot-wide shared-use path south of the canal with a 2-foot minimum clearance zone would be required between the trees and the pathway.



Option 2	
Cost Estimate - Concept Level	
Prepared By	Date
Approximate Route Reference Post (BEGIN) =	67,889 (END) = 68,883
Accumulated Mileage (BEGIN) =	67,889 (END) = 68,883
Project Length =	0.994 miles 5,246 ft
Current Year =	2012
Assumed Construction Year =	2016
Construction Items Inflation Factor =	1.23 4 yrs for inflation
Assumed Yearly Inflation for Engineering Services (PE and CE) (%/yr) =	2.5%
Assumed Yearly Inflation for Urban Residential Right of Way (%/yr) =	0.0%
Assumed Yearly Inflation for Urban Commercial Right of Way (%/yr) =	0.0%
Assumed Yearly Inflation for non-Urban Right of Way (%/yr) =	0.0%
Items not Estimated (% of Construction) =	20.0%
Preliminary Engineering (% of Construction + Incentives) =	8.0%
Construction Engineering (% of Construction + Incentives) =	10.0%

Construction Items	Cost	Remarks
Roadway and Drainage	\$214,071	
Traffic and Safety	\$0	
Structures	\$0	
Environmental Mitigation	\$0	
ITS	\$0	
	Subtotal	\$214,071
	Items not Estimated (20%)	\$42,814
	Construction Subtotal	\$256,885
P.F. Cost	P.E. Subtotal	\$20,551 8%
C.E. Cost	C.E. Subtotal	\$25,689 10%
Right of Way Urban Suburban Commercial	Right of Way Subtotal	\$173,000 Approximately 17,300 Sq Ft
Utilities	Utilities Subtotal	\$0
Incentives	Incentives Subtotal	\$0
Miscellaneous	Miscellaneous Subtotal	\$0

Cost Estimate (ePM screen 505)	2012	2016
P.E.	\$21,000	\$23,000
Right of Way	\$173,000	\$173,000
Utilities	\$0	\$0
Construction	\$257,000	\$315,000
C.E.	\$26,000	\$29,000
Incentives	\$0	\$0
Aesthetics	\$3,000	\$4,000
Change Order Contingency	9% \$23,400	\$29,000
UDOT Oversight	\$0	\$0
Miscellaneous	\$0	\$0
TOTAL	\$503,400	\$573,000

PROPOSED COMMISSION REQUEST	TOTAL	TOTAL
	\$503,400	\$573,000

Note:
See Lochner's May 10, 2013 "Final Memo" for the "Wayne County Connector: Trail Pathway System - Torrey Segment Preliminary Engineering For Phase 1" for detailed drawing and cost estimates. This section of the Feasibility Study presents a summary of the engineering documents.

Date: 8/15/2013

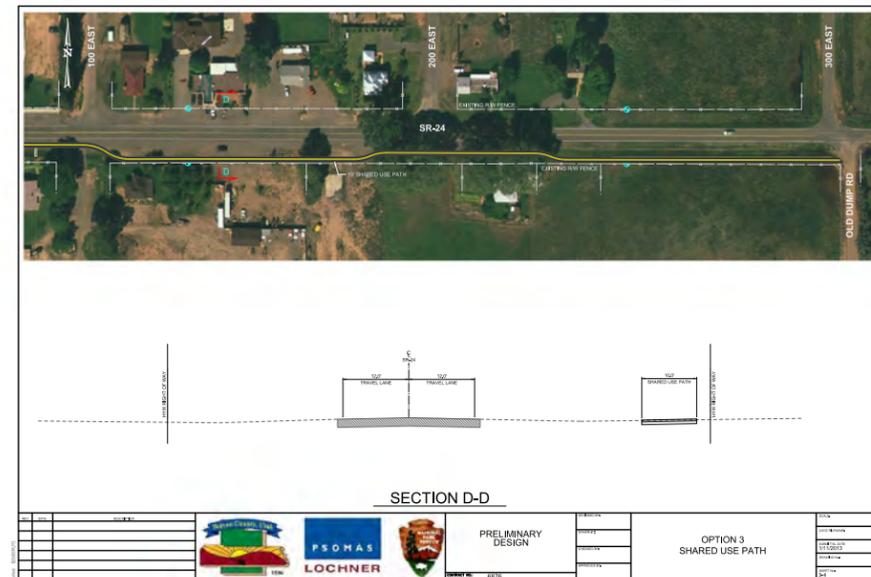
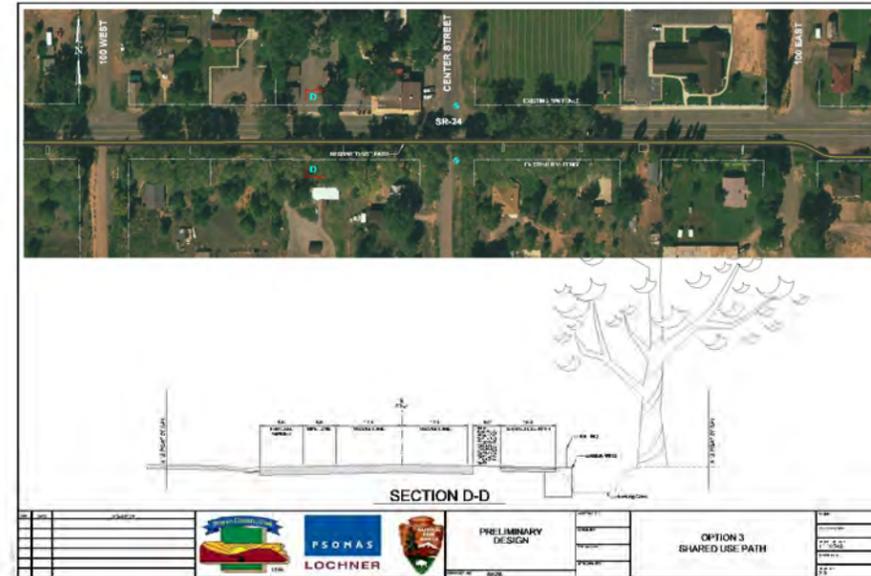
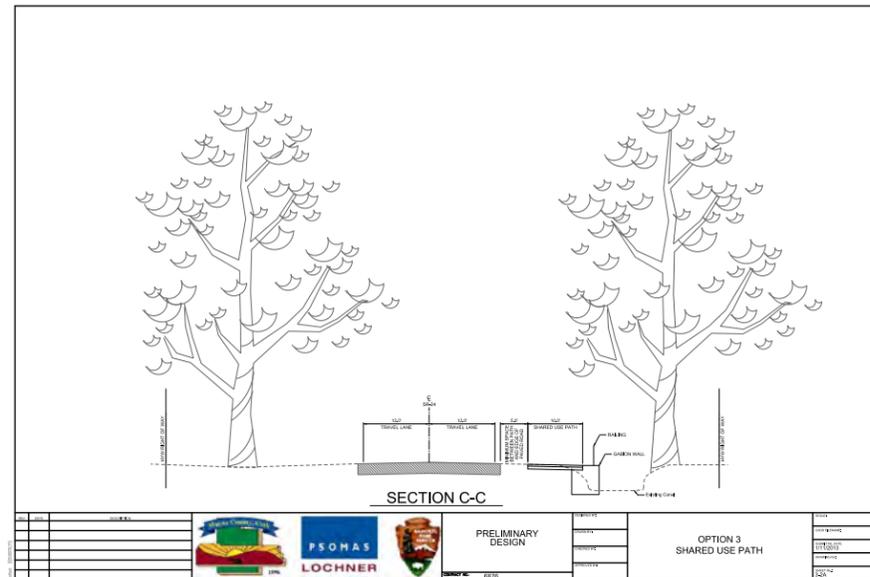
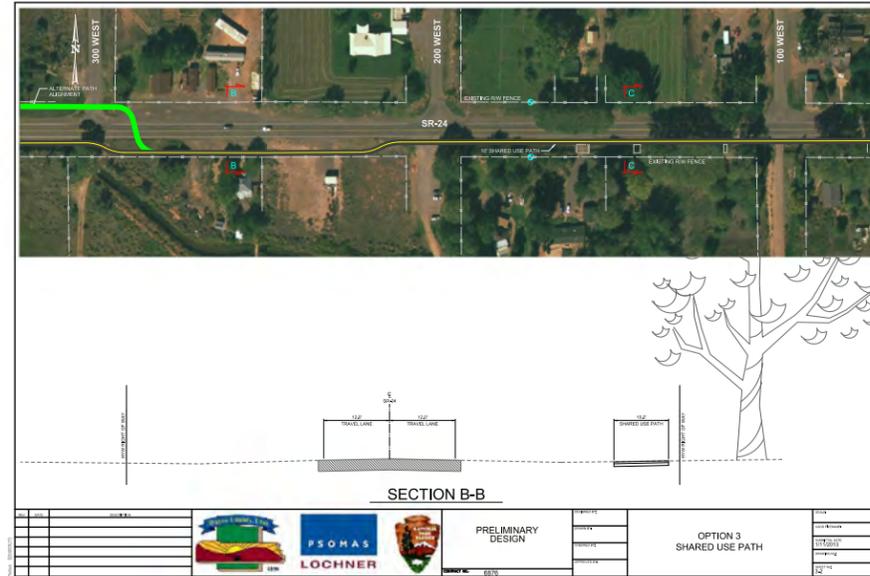
Section 8

Initial Phase Design Options

Torrey Segment Wayne County Connector



Design Option '3' - Shared Use Path



This Option proposed a shared-use pathway located between the existing roadway and the canal.

A 10-foot-wide shared-use path situated between the road and canal, requiring a 5-foot minimum clearance required between the edge of the paved road and the pathway.

This Option would have the greatest affect on the existing parking for the commercial businesses.

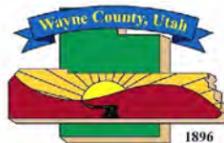
Note:
See Lochner's May 10, 2013 "Final Memo" for the "Wayne County Connector: Trail Pathway System - Torrey Segment Preliminary Engineering For Phase 1" for detailed drawing and cost estimates. This section of the Feasibility Study presents a summary of the engineering documents.

Section 8

Date: 8/15/2013

Initial Phase Design Options

Torrey Segment Wayne County Connector



1896

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Phase 1 Pathway Preliminary Design

This section describes the preliminary design recommendations and cost estimates for Phase 1 of the pathway project that runs from Thousand Lakes RV Park to the junction of SR-24 and SR-12. Preliminary pathway alignments, cross sections, and cost estimates for the initial phase are contained within this section of the study. Phase 1 was identified based on the prior analysis of the corridor, comments received during the Open house process and meetings with the Steering Committee. The location serves the most immediate needs of the community and is located in the visible area of the corridor. It is critical to the long-term success of the project that the initial expenditures for construction results in a pathway that is highly utilized thereby building continued public support. The design is based on the UDOT review of the alternative design solutions for the Torrey corridor from Thousand Lakes RV to the Intersection of S.R. 12.

Alignment, Cross Sections and Estimated Costs

Phase 1 is divided into three sections with different alignments, cross sections, and estimated costs, as described in Table 3 shown below. These sections could be constructed in phases as funding allows. The cost estimates are approximate and are intended for planning purposes only. (See sheets 9-16 through 9-18 for detail drawings RD-01 through RD-10).

Table 3: Phase 1 Section Comparison

Location	Alignment and Cross Section Description	Figure ¹	Cost ²
Thousand Lakes RV Park to Sand Creek Road	10-foot-wide shared-use path on the north side of the road adjacent to the existing right-of-way fence. The existing right-of-way width varies; it may be necessary to acquire right-of-way immediately west of Sand Creek Road in order to maintain a minimum of 5 feet between the road and path.	RD-01 to RD-03	\$220K
Sand Creek Road to 300 East	6-foot-wide bicycle lanes adjacent to the travel lanes on both sides of the road with a 5-foot-wide sidewalk offset from the road (on the south side behind the canal and trees).	RD-03 to RD-07	\$570K ³
300 East to junction of SR-24 and SR-12	10-foot-wide shared-use path on the south side of the road adjacent to the existing right-of-way fence. A boardwalk may be required for a 250-foot-long section near MP 69.5 west of the Red Sands Motel.	RD-07 to RD-10	\$300K ⁴
Phase 1 Total Cost			\$1.1M

1. Alignment and cross sections are shown on sheets RD-01 to RD-10.
 2. Rough order of magnitude cost includes preliminary engineering, construction, and construction engineering inspection (see detailed cost breakdown).
 3. The cost estimate for Phase I from Sand Creek Road to 300 East (above) differs from the cost estimate for Option 1 (in Table 2). The cost estimate developed for Options 1-4 was less detailed and used for comparison purposes only.
 4. Assumes boardwalk required through wetland (cost would be less if path could be constructed on fill).

Design details to be determined during final design include the following:

- How to transition from a shared-use path to bicycle lanes with offset sidewalks.
- Type of road crossing (e.g., painted crosswalks or HAWK signals). It should be noted that UDOT Policy 06C-27 requires 20+ pedestrians during any one hour of the day to qualify for a crosswalk.
- Memorandum of Understanding between UDOT and Wayne County regarding conditions on path within right-of-way. UDOT has stated in meetings and through correspondence that the use of the highway right-of-way for the path is not guaranteed if future widening is required. UDOT would require an agreement that the path could be removed, not relocated or replaced, if necessary for future widening.
- Pavement section.
- Type of canal crossing (e.g., bridged walkway, box or pipe culvert).
- How to construct path through wetlands (e.g., boardwalk or on approved fill).
- Signing - directional and interpretive (refer to guidelines in Section 11).
- Trailheads and interpretive site details and facilities.

Transition from Shared Use Path to Bicycle Lanes and Sidewalk

Preliminary design recommendations assume transitioning from a shared-use path on the north side of the road to bike lanes with a sidewalk at Sand Creek Road, and transitioning back to a shared use-path on the south side of the road at 300 East. However, the transition locations may change during final design. For example, the transition from bike lanes to a shared-use path on the south side of the road may occur at 100 East instead of 300 East. The transition would require westbound bicyclists to cross from the multi-use path on the south side of the road to the bicycle lane on the north side of the road. It is not ideal to have a mid-block crossing for safety reasons; therefore, the transition would likely be at an existing intersection. During final design, several factors would be taken into consideration to determine the best location for a crossing including the following:

- Traffic on side streets
- Right-of-way
- Parking
- Public input.

Details for Final Design

The preliminary design recommendations and cost estimates described in this memorandum are very high level. Many of the details will be worked out during final design including the following:

- How to transition from shared-use path to bicycle lanes with offset sidewalk.
- Type of road crossing (e.g., painted crosswalk or HAWK signal). Note that UDOT Policy 06C-27 requires 20+ pedestrians during any one hour of the day to qualify for a crosswalk.
- Memorandum of Understanding between UDOT and Wayne County regarding conditions on path within right-of-way. (UDOT has stated in meetings and through correspondence that the use of the highway right-of-way for the path is not guaranteed if future widening is required. UDOT would require an agreement that the path could be removed (not relocated or replaced) if necessary for future widening.)
- Pavement section.
- Type of canal crossing (e.g., box or pipe culvert).
- How to construct path through wetlands (e.g., boardwalk or on fill).
- Signing (directional and interpretive).
- Trailhead and interpretive site details.

Environmental Clearance Cost Estimate

Before any project is constructed, environmental clearance must be obtained (see Environmental Scan Memorandum dated June 28, 2012, for detail). The estimated cost for environmental clearance (assuming a categorical exclusion) for Phase 1 is estimated at \$51,632 (see attached Cost Estimate - Sheet 9-19 - for detail).

Date: 8/15/2013

Section 9

Phase 1 Preliminary Engineering

Torrey Segment Wayne County Connector



References

American Association of State Highway and Transportation Officials. 2011. A Policy on Geometric Design of Highways and Streets, 6th Edition.

American Association of State Highway and Transportation Officials. 2012. Guide for the Development of Bicycle Facilities, 4th Edition.

National Association of City Transportation Officials. 2012. Urban Bikeway Design Guide, 2nd Edition.

Potential For Smaller Project Segments

Funding for construction has not been identified. Grants could possibly be obtained in the range of \$100K. An estimated length of project that could be constructed for roughly \$100,000 is described in Table 4 (below).

Table 4: Possible Length of Project Construction per \$100,000 Expenditure

Location	Approximate Length of Trail Constructed for \$100K
1000 Lakes RV Park to Sand Creek Road	1,700 lin. ft.
Sand Creek Road to 300 East	900 lin. ft.
300 East to junction of SR-24 and SR-12	1,100 lin. ft.

The most expensive section to construct is from Sand Creek Road to 300 East because the bike lanes are between the highway and parking. The cost estimate assumes the pavement section must accommodate trucks. The higher cost of the shared-use path from 300 East to the junction of SR-24 and SR-12 (compared to Thousand Lakes RV Park to Sand Creek Road) is due to the wetlands; either a boardwalk or wetland mitigation would be required.

Any proposed project segment should consider the independent utility of that segment and the logical termini that would represent the starting and ending points. The project should be useful regardless of whether future phases are constructed, and should connect logical origins and destinations thereby creating a useful pathway segment. All efforts should be made to avoid creating a pathway segment that appears to lead to a dead end situation.

Phase 1 Project Design Criteria

Torrey Segment Wayne County Connector



Project Design Criteria (page 1 of 2)

The Utah Department of Transportation (UDOT) requires that all projects constructed within State rights-of-way must comply with their established standards for design. The details governing the design are submitted for review according to the format established within the Project Design Criteria application form.

This form lists all of the minimum criteria that has been utilized by the planning and engineering team in completing the project documents and drawings. Any exceptions to the minimum established criteria must be described in completing the form.

The Project Design Criteria is the basis for UDOT's review and approval process for each transportation project.

PROJECT DESIGN CRITERIA - TRAILS					
I. PROJECT DESCRIPTION			DATE:	1/16/2013	
Project No	Not assigned yet	Location	Wayne Co. SR-24 outside of Torrey (approx. MP 67 - MP 68 & MP 69 - 69.6)		
PIN	Not assigned yet	Concept			
Describe the scope of the project <u>This PDC prepared by Lochner for Wayne County Pathway Trail Feasibility Study, 2013</u>					
II. DESIGN STANDARDS					
Trail Name: <u>Wayne County Pathway - Torrey Segment, Phase I</u>			Comments		
Trail Characteristics			Proposed Phase I extends roughly 2.4 miles along SR-24 from the Thousand Lakes RV Park (~MP 67) to the junction of SR-24 and SR-12 (MP 69.6). This PDC is recommended for the the west end (Thousand Lakes RV Park to Sand Creek Road; MP 67 to MP 68) and for the east end (300 East to SR-24/SR-12 junction; MP 69 to MP 69.6). Bicycle lanes and offset sidewalk are recommended for the middle section (Sand Creek Road to 300 East); this PDC does not apply in the middle section.		
Functional Class	Trail / Shared Use Path	Surface Type			HMA 1/2"
		Terrain			Rolling
Design Vehicle	AASHTO GB (Bike)	Design Speed (mph)			20-30
Proposed Trail Characteristics					
	Number of Lanes <u>2</u>		One way? <u>No</u>		
	Shoulder Width (Typ) <u>2</u>				
Order of Precedence: SD - Standard Drawings (if applicable); MOI - Roadway Design Manual of Instruction (Section 9); GB (Bike) - AASHTO Guide for the development of Bicycle Facilities, 1999; AASHTO Guide for the Planning, Design and Operation of Pedestrian Facilities, 2004; AASHTO Guide for Design of Pedestrian Bridges (Ped Bridges); AASHTO LRFD Bridge Design Specifications					
Design Elements	UDOT Guidelines	Proposed	References	Date of Decision, Comments, Mitigation, etc.	
Design Speed	20 - 30 mph	20	GB (Bike) pp.5-14; MOI	20 mph min. for shared use. If downgrade exceeds 4% or strong prevailing winds exist, design speed of 30 mph ,or more, is advisable	
Trail Width	10'	10	GB (Bike) pp.5-3 to 5-7 ; MOI	On one-way trails, 6' width may be acceptable if one-way operation is enforced	
Shoulder Width	2'	2	GB (Bike) pp.5-5; MOI	Minimum 2' wide 6:1 graded slope on both sides of trail.	
Superelevation	2% max	2%	GB (Bike) pp.5-15 to 5-16		
Horizontal Alignment	Minimum Radii Value	Minimum Radii Value	GB (Bike) pp.37-39 Table 5-2	based on design speed	
	74' - 166'	74			
PDC Version 2.1 2/28/2013					

PROJECT DESIGN CRITERIA - TRAILS (cont.)

I. PROJECT DESCRIPTION

DATE: 1/16/2013

Project No	Not assigned yet	Location	Wayne Co. SR-24 outside of Torrey (approx. MP 67 - MP 68 & MP 69 - 69.6)
PIN	Not assigned yet	Concept	

Order of Precedence: SD - Standard Drawings (if applicable); MOI - Roadway Design Manual of Instruction (Section 9); GB (Bike) - AASHTO Guide for the development of Bicycle Facilities, 1999; AASHTO Guide Guide for the Planning, Design and Operation of Pedestrian Facilities, 2004; AASHTO Guide for Design of Pedestrian Bridges (Ped Bridges); AASHTO LRFD Bridge Design Specifications

Design Elements (continued)	UDOT Guidelines		Proposed		References	Date of Decision, Comments, Mitigation, etc.
	% Min	% Max	% Min	% Max		
Profile Grades	0.02%	5%	2%	5%	GB (Bike) pp. 5-16 to 5-17; MOI	
Cross Slope	Standard Value		Value Proposed/Used		GB (Bike) pp.5-15 to 5-16; MOI	
	2%		2%			
Stopping-Sight Distance	Minimum		Minimum		GB (Bike) p 5-17 to 5-25; MOI	
	130'		130			
Structural Capacity Live load	Design Loading		Design Loading		MOI; AASHTO (Ped Bridges) & AASHTO LRFD	
	65 psf min, 85 psf desirable		85 psf			
Bridge Width	Minimum		Minimum		GB (Bike) pp. 5-26 to 5-28; MOI	
	12'		12			
Vertical Clearance	Minimum		Minimum		GB (Bike) pp 5-26; MOI	
	8' min., 10' desirable		10			
Lateral Offset to Obstruction	Minimum		Minimum		GB (Bike) pp.5-5	
	2' min., 3' desirable		2			

Prepared by Nick Betts, Lochner

Verified Only _____
- Local Government Projects Only

Approved by _____

On local government projects that are not on a UDOT road, the Region Preconstruction Engineer signs the "Verified Only" line and the Engineer of Record signs the "Approved by" line. For all other projects, the "Verified Only" line is left blank and the Region Preconstruction Engineer signs the "Approved by" line.

The following pages (9-4 through 9-19) contain the Preliminary Design drawing package and cost estimates for the initial Phase of the project.

Date: 8/15/2013

Section 9

Phase 1
Project Design Criteria

**Torrey Segment
Wayne County Connector**





REV	DATE	DESCRIPTION



PRELIMINARY DESIGN

CONTRACT NO.: 6876

DESIGNED BY:

DRAWN BY:

CHECKED BY:

APPROVED BY:

WAYNE COUNTY
PATHWAY
FEASIBILITY STUDY

Date: 8/15/2013

SCALE:

CADD FILENAME:

SUBMITTAL DATE
1/11/2013

DRAWING No.:

SHEET No.:
RD-01

Photo: (SUBSTR.?)



REV	DATE	DESCRIPTION



PRELIMINARY DESIGN
CONTRACT NO.: 6876

DESIGNED BY:
DRAWN BY:
CHECKED BY:
APPROVED BY:

WAYNE COUNTY
PATHWAY
FEASIBILITY STUDY
Date: 8/15/2013

SCALE:
CADD FILENAME:
SUBMITTAL DATE
1/11/2013
DRAWING No.:
SHEET No.:
RD-02

Plotted: \$(SUBSTR,??)



REV	DATE	DESCRIPTION



PRELIMINARY DESIGN

CONTRACT NO.: 6876

DESIGNED BY:
DRAWN BY:
CHECKED BY:
APPROVED BY:

WAYNE COUNTY
PATHWAY
FEASIBILITY STUDY

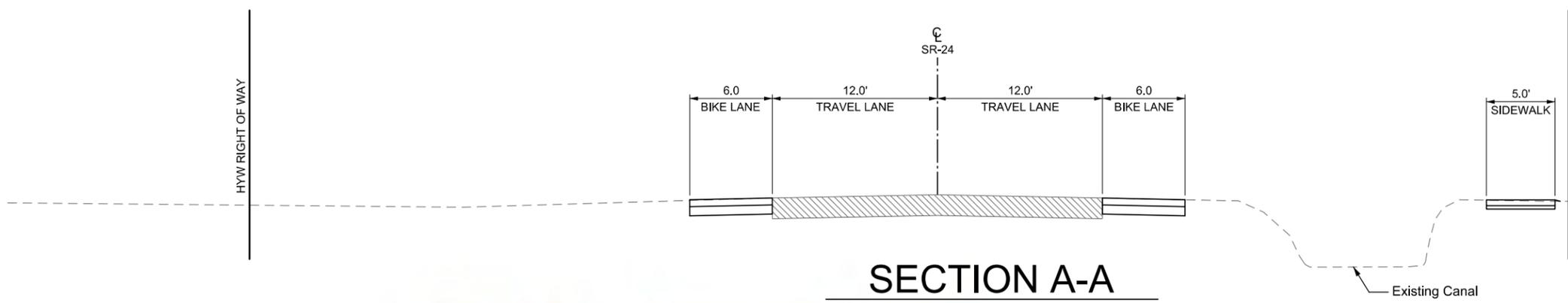
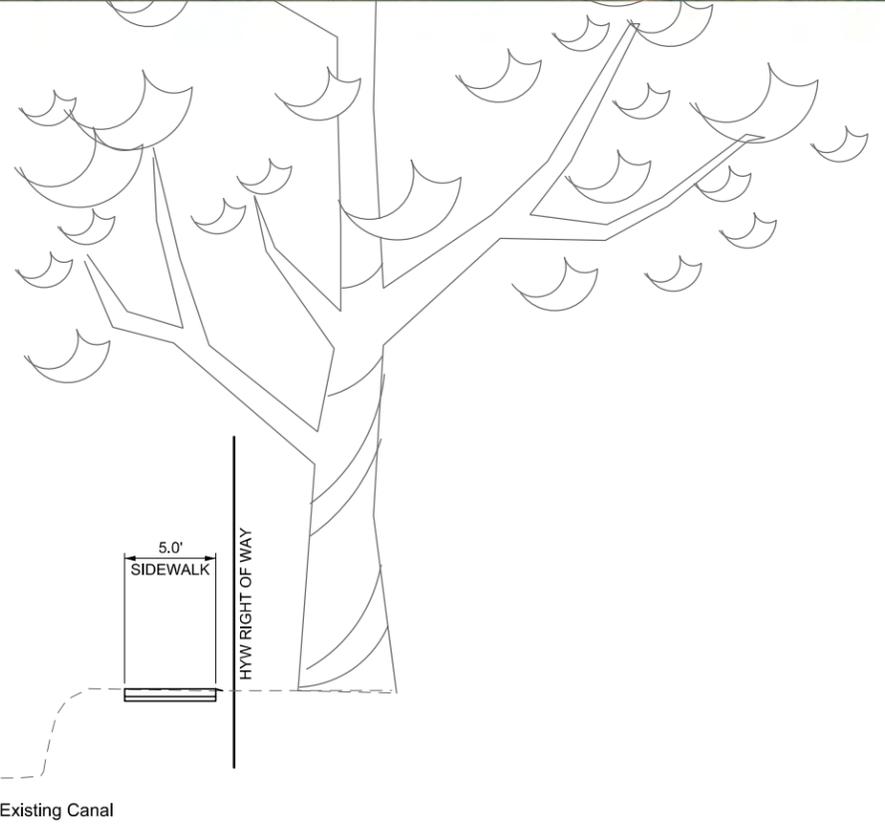
Date: 8/15/2013

SCALE:
CADD FILENAME:
SUBMITTAL DATE 1/11/2013
DRAWING No.:
SHEET No.: RD-03



Design Note:

It is anticipated that this specific cross-section for the Pathway will only occur in the Main Street are of Torrey where conflicts exist with respect to the existing canal and the Cottonwood trees. The purpose of utilizing on-street bike lanes and separated sidewalks is to provide a safe means of transportation without negatively impacting the health of the trees or the historic nature of the canal. The area between 300 East and 300 West will be studied to provide direction with respect to the actual point of beginning and end of this cross section. Providing safe locations for roadway crossings will be critical to the success of this element of the pathway design.



SECTION A-A

REV	DATE	DESCRIPTION



PRELIMINARY DESIGN

CONTRACT NO.: 6876

DESIGNED BY:
DRAWN BY:
CHECKED BY:
APPROVED BY:

WAYNE COUNTY PATHWAY FEASIBILITY STUDY

Date: 8/15/2013

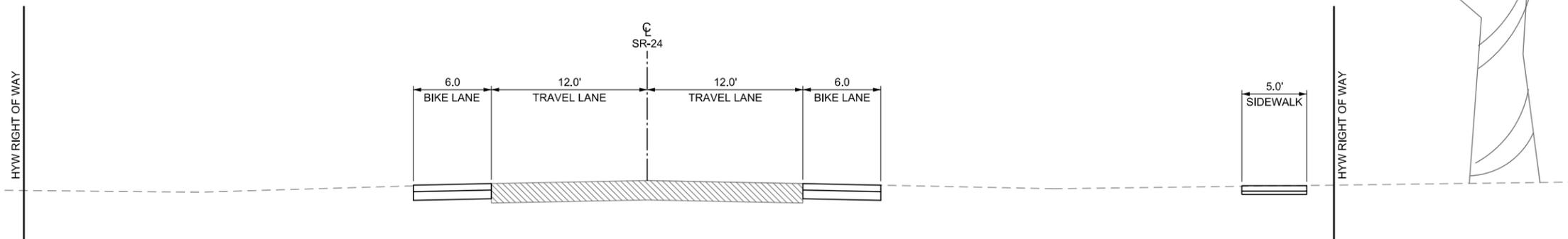
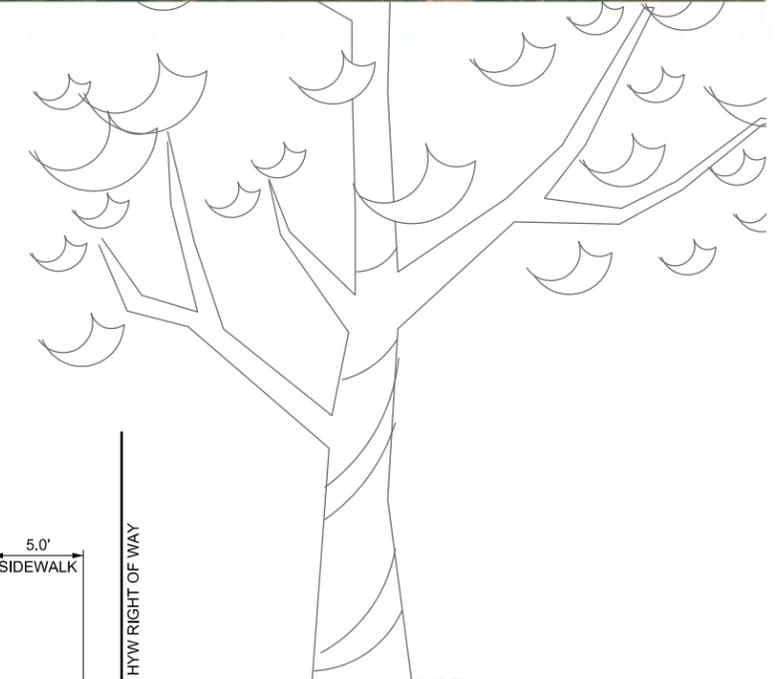
SCALE:
CADD FILENAME:
SUBMITTAL DATE: 1/11/2013
DRAWING No.:
SHEET No.: RD-04

Plotted: \$(SUBSTR(??))



Design Note:

It is anticipated that this specific cross-section for the Pathway will only occur in the Main Street are of Torrey where conflicts exist with respect to the existing canal and the Cottonwood trees. The purpose of utilizing on-street bike lanes and separated sidewalks is to provide a safe means of transportation without negatively impacting the health of the trees or the historic nature of the canal. The area between 300 East and 300 West will be studied to provide direction with respect to the actual point of beginning and end of this cross section. Providing safe locations for roadway crossings will be critical to the success of this element of the pathway design.



SECTION B-B

REV	DATE	DESCRIPTION



PRELIMINARY DESIGN

CONTRACT NO.: 6876

DESIGNED BY:
DRAWN BY:
CHECKED BY:
APPROVED BY:

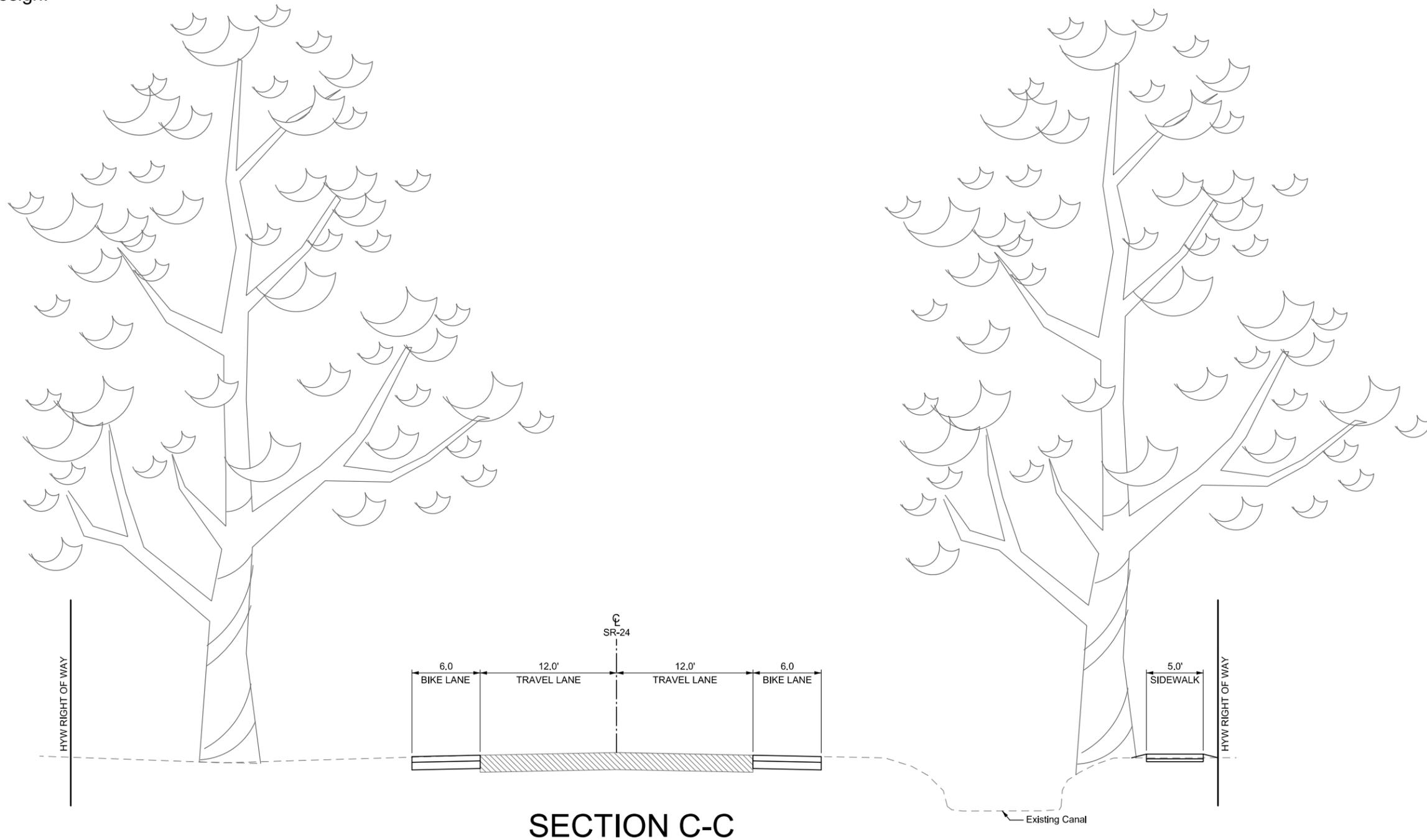
WAYNE COUNTY
PATHWAY
FEASIBILITY STUDY

Date: 8/15/2013

SCALE:
CADD FILENAME:
SUBMITTAL DATE 1/11/2013
DRAWING No.:
SHEET No.: RD-05

Design Note:

It is anticipated that this specific cross-section for the Pathway will only occur in the Main Street area of Torrey where conflicts exist with respect to the existing canal and the Cottonwood trees. The purpose of utilizing on-street bike lanes and separated sidewalks is to provide a safe means of transportation without negatively impacting the health of the trees or the historic nature of the canal. The area between 300 East and 300 West will be studied to provide direction with respect to the actual point of beginning and end of this cross section. Providing safe locations for roadway crossings will be critical to the success of this element of the pathway design.



REV	DATE	DESCRIPTION



PRELIMINARY
DESIGN

CONTRACT NO.: 6876

DESIGNED BY:
DRAWN BY:
CHECKED BY:
APPROVED BY:

WAYNE COUNTY
PATHWAY
FEASIBILITY STUDY

Date: 8/15/2013

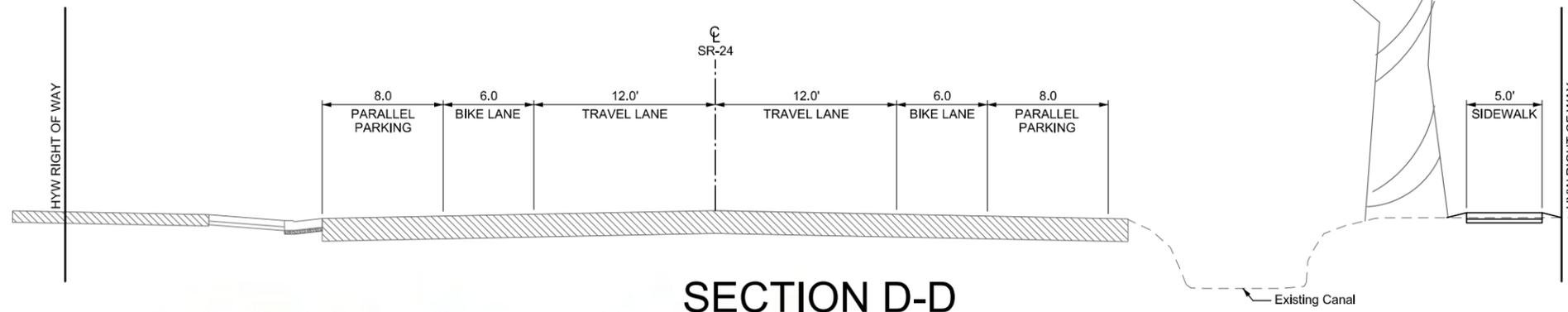
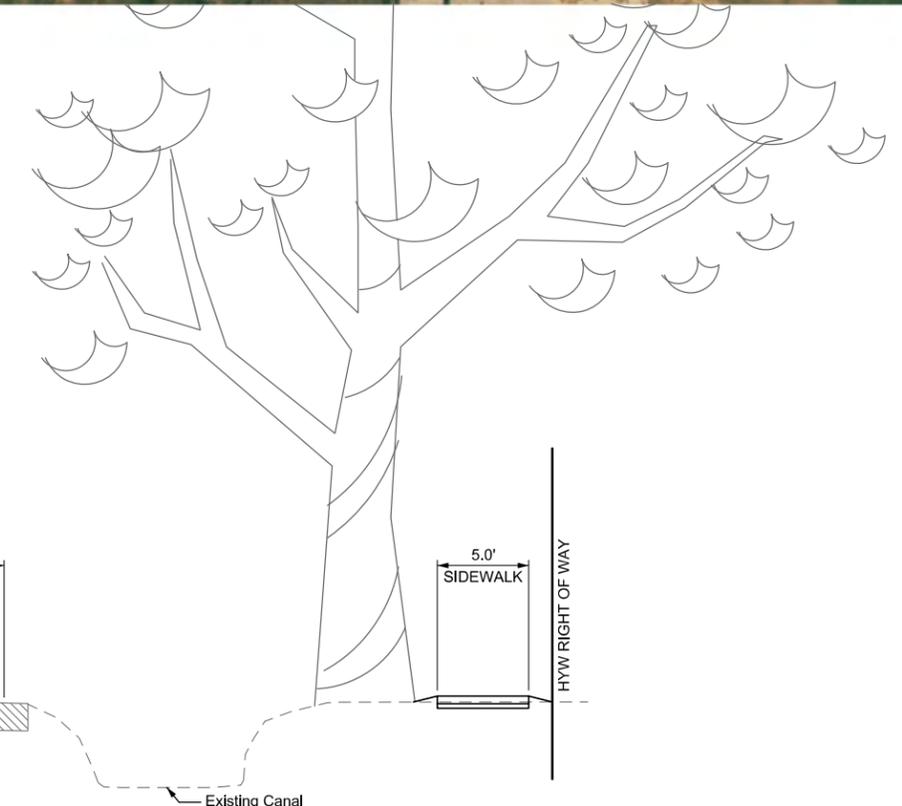
SCALE:
CADD FILENAME:
SUBMITTAL DATE 1/11/2013
DRAWING No.:
SHEET No.: RD-05A

Plotted: \$(SUBSTR(??))



Design Note:

It is anticipated that this specific cross-section for the Pathway will only occur in the Main Street area of Torrey where conflicts exist with respect to the existing canal and the Cottonwood trees. The purpose of utilizing on-street bike lanes and separated sidewalks is to provide a safe means of transportation without negatively impacting the health of the trees or the historic nature of the canal. The area between 300 East and 300 West will be studied to provide direction with respect to the actual point of beginning and end of this cross section. Providing safe locations for roadway crossings will be critical to the success of this element of the pathway design.



SECTION D-D

REV	DATE	DESCRIPTION



PRELIMINARY DESIGN

DESIGNED BY: _____

DRAWN BY: _____

CHECKED BY: _____

APPROVED BY: _____

CONTRACT NO.: 6876

WAYNE COUNTY PATHWAY FEASIBILITY STUDY

Date: 8/15/2013

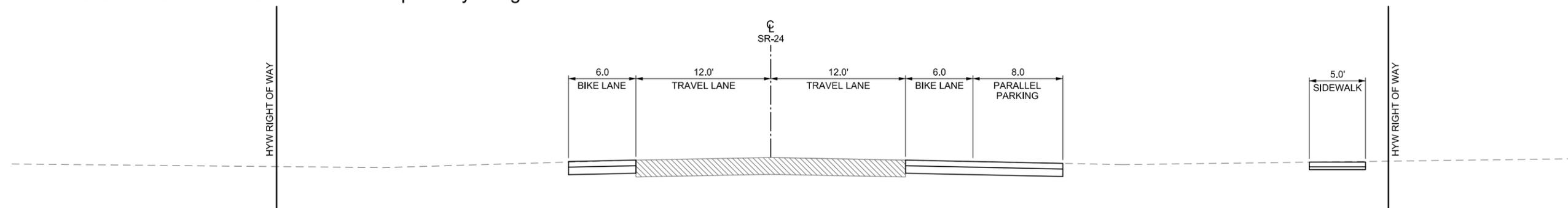
SCALE:
CADD FILENAME:
SUBMITTAL DATE 1/11/2013
DRAWING No.:
SHEET No.: RD-06

Picture: (SUBSTR 27)



Design Note:

It is anticipated that this specific cross-section for the Pathway will only occur in the Main Street area of Torrey where conflicts exist with respect to the existing canal and the Cottonwood trees. The purpose of utilizing on-street bike lanes and separated sidewalks is to provide a safe means of transportation without negatively impacting the health of the trees or the historic nature of the canal. The area between 300 East and 300 West will be studied to provide direction with respect to the actual point of beginning and end of this cross section. Providing safe locations for roadway crossings will be critical to the success of this element of the pathway design.



SECTION E-E

REV	DATE	DESCRIPTION



PRELIMINARY DESIGN

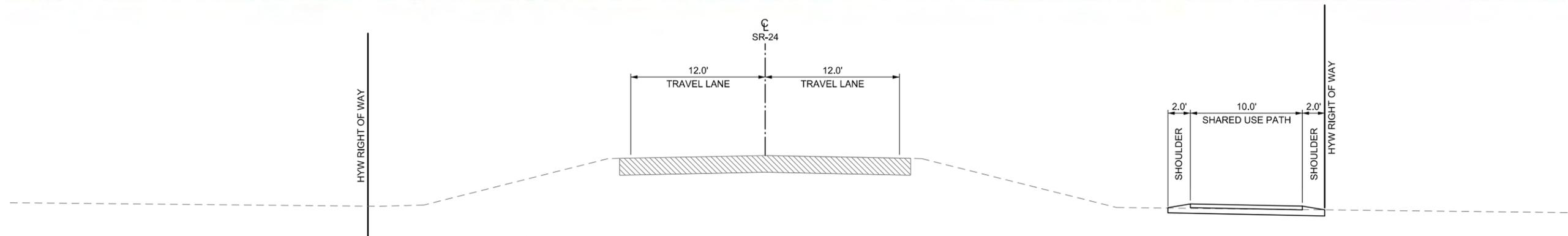
CONTRACT NO.: 6876

DESIGNED BY:
DRAWN BY:
CHECKED BY:
APPROVED BY:

WAYNE COUNTY PATHWAY FEASIBILITY STUDY

Date: 8/15/2013

SCALE:
CADD FILENAME:
SUBMITTAL DATE: 1/11/2013
DRAWING No.:
SHEET No.: RD-07



SECTION F-F

REV	DATE	DESCRIPTION



PRELIMINARY DESIGN

CONTRACT NO.: 6876

DESIGNED BY:
DRAWN BY:
CHECKED BY:
APPROVED BY:

WAYNE COUNTY
PATHWAY
FEASIBILITY STUDY

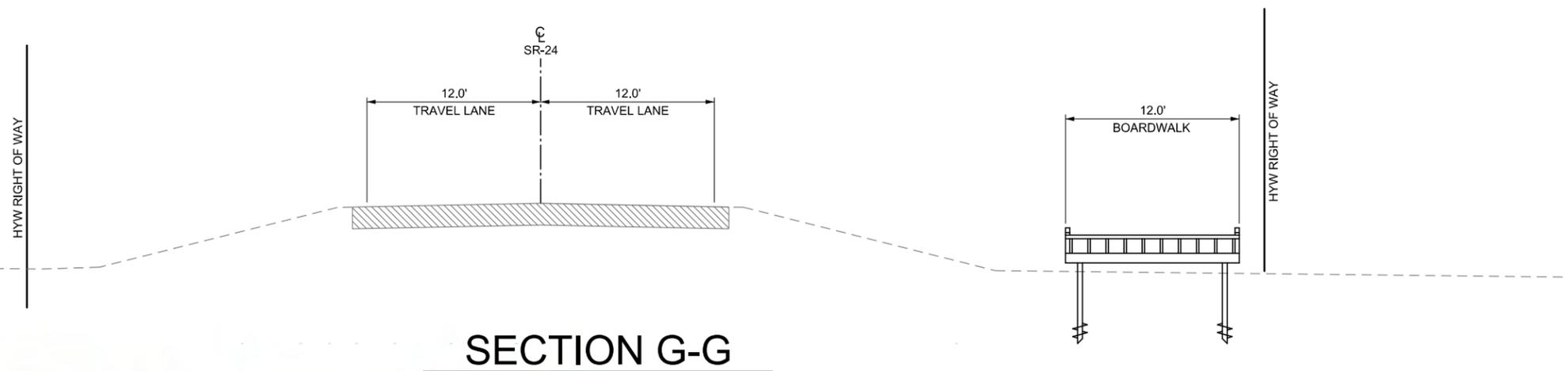
Date: 8/15/2013

SCALE:
CADD FILENAME:
SUBMITTAL DATE 1/11/2013
DRAWING No.:
SHEET No.: RD-08



Design Note:

The need to use this specific cross section, and its location, will be determined based on the completion of a wetland delineation and acceptance of the delineation and the design solution by the U.S. Army Corps of Engineers.



REV	DATE	DESCRIPTION



PRELIMINARY DESIGN
 CONTRACT NO.: 6876

DESIGNED BY:
 DRAWN BY:
 CHECKED BY:
 APPROVED BY:

WAYNE COUNTY PATHWAY FEASIBILITY STUDY
 Date: 8/15/2013

SCALE:
CADD FILENAME:
SUBMITTAL DATE 1/11/2013
DRAWING No.:
SHEET No.: RD-09



REV	DATE	DESCRIPTION



PRELIMINARY
DESIGN

CONTRACT NO.: 6876

DESIGNED BY:
DRAWN BY:
CHECKED BY:
APPROVED BY:

WAYNE COUNTY
PATHWAY
FEASIBILITY STUDY

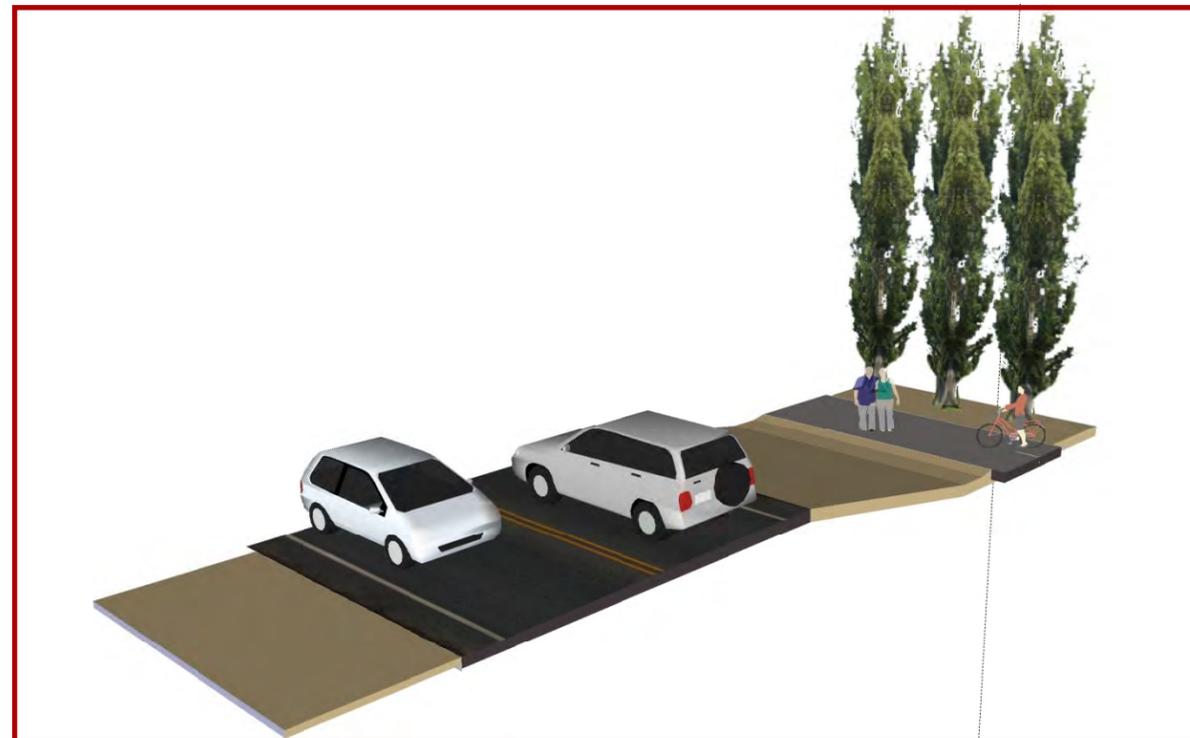
Date: 8/15/2013

SCALE:
CADD FILENAME:
SUBMITTAL DATE 1/11/2013
DRAWING No.:
SHEET No.: RD-10



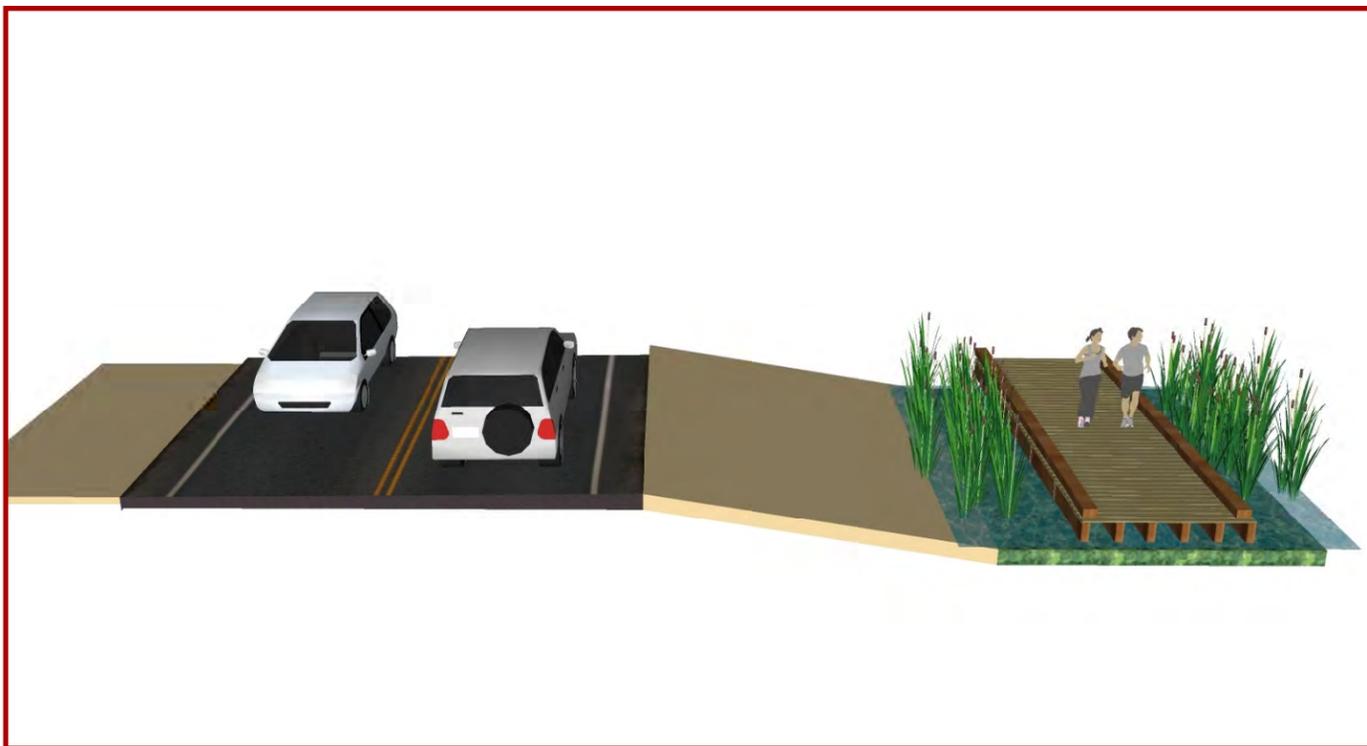
9-15-a Typical Section C-C Bike Lanes with Separated Walkway

Illustration of bike lanes sharing the roadway with automobiles while pedestrian use is placed on a narrower walkway that is separated from the roadway surface. (See sheet 9-9)



9-15-c Typical Section F-F Separated Multi-Use Pathway

Illustration of a typical 10-foot wide shared use pathway serving both pedestrians and bicyclists along an alignment that is separated from the roadway travel surface. (See sheet 9-12)



9-15-b Typical Section G-G Elevated Pathway Across Wetlands

Illustration of a raised boardwalk or trestle pathway with pier footings. this type of pathway is used to cross a wetland area with minimal impacts to the wetland surface. (See sheet 9-13)

Typical Road Sections

Illustrations on this page are examples of three dimensional projection of the sections referenced in the preliminary pathway designs. Page references are given for each illustration relating it to the original engineering section.

Date: 8/15/2013

Section 9

Phase 1 Typical Section Illustrations

Torrey Segment Wayne County Connector



Thousand Lakes RV to Sand Creek Rd Cost Estimate - Concept Level

Prepared By Lochner Date 2/26/2013

Approximate Route Reference Post (BEGIN) =	67.187	(END) =	67.884
Accumulated Mileage (BEGIN) =	67.187	(END) =	67.884
Project Length =	0.697	miles	3,680 ft
Current Year =	2012		
Assumed Construction Year =	2016		
Construction Items Inflation Factor =	1.23	4 yrs for inflation	
Assumed Yearly Inflation for Engineering Services (PE and CE) (%/yr) =	2.5%		
Assumed Yearly Inflation for Urban Residential Right of Way (%/yr) =	0.0%		
Assumed Yearly Inflation for Urban Commercial Right of Way (%/yr) =	0.0%		
Assumed Yearly Inflation for non-Urban Right of Way (%/yr) =	0.0%		
Items not Estimated (% of Construction) =	20.0%		
Preliminary Engineering (% of Construction + Incentives) =	8.0%		
Construction Engineering (% of Construction + Incentives) =	10.0%		

Construction Items	Cost	Remarks
Roadway and Drainage	\$137,215	
Traffic and Safety	\$2,730	
Structures	\$0	To Be Determined
Environmental Mitigation	\$0	To Be Determined
ITS	\$0	
	Subtotal	
	Items not Estimated (20%)	
	Construction Subtotal	
P.E. Cost	P.E. Subtotal	8%
C.E. Cost	C.E. Subtotal	10%
Right of Way Urban Suburban Commercial	Right of Way Subtotal	\$0
Utilities	Utilities Subtotal	\$0
Incentives	Incentives Subtotal	\$0
Miscellaneous	Miscellaneous Subtotal	\$0

Cost Estimate (ePM screen 505)	2012	2016
P.E.	\$13,000	\$14,000
Right of Way	\$0	\$0
Utilities	\$0	\$0
Construction	\$168,000	\$206,000
C.E.	\$17,000	\$19,000
Incentives	\$0	\$0
Aesthetics	1% \$2,000	\$2,000
Change Order Contingency	9% \$15,300	\$19,000
UDOT Oversight	\$0	\$0
Miscellaneous	\$0	\$0
TOTAL	\$215,300	\$260,000

Segment Cost	PROPOSED COMMISSION REQUEST	TOTAL	TOTAL
		\$215,300	\$260,000

Thousand Lakes RV to Sand Creek Rd

Item #	Item	Quantity	Units	Price	Cost	Remarks
Roadway and Drainage						
012850010	Mobilization	1	Lump	\$16,000.00	\$16,000	Usually 7-10% of construction
013150010	Public Information Services		Lump		\$0	
015540005	Traffic Control	1	Lump	\$3,000.00	\$3,000	Usually 3-5% of construction
015720010	Dust Control & Watering	35	1000 gal	\$15.00	\$525	
017210010	Survey	1	Lump	\$4,000.00	\$4,000	Usually 1% of construction
023160020	Roadway Excavation (Plan Quantity)	909	Cu yd	\$12.00	\$10,908	
027210020	Untreated Base Course (Plan Quantity)	682	Cu yd	\$26.00	\$17,732	Assumes 6" UTBC
027410040	HMA - 3/8 bike ped path	470	Ton	\$115.00	\$54,050	Assumes 2" HMA
02744007*	SMA - 1/2 Inch	0	Ton	\$95.00	\$0	
027710025	Concrete Curb and Gutter Type B1		ft	\$15.00	\$0	
027760015	Concrete Sidewalk		Sq yd	\$8.00	\$0	
	Pedestrian Access Ramp	4	Each	\$4,000.00	\$16,000	
	Canal Crossing	1	Each	\$15,000.00	\$15,000	
Roadway and Drainage Subtotal					\$137,215	Back to Main

Thousand Lakes RV to Sand Creek Rd

Item	Quantity	Units	Price	Cost	Remarks	
Traffic						
027650050	Pavement Marking Paint	39	gal	\$70.00	\$2,730	
027650020	Pavement Message Paint		Each			
028910028	Sign Type A-1, 12 Inch X 36 Inch		Each			
028910270	Remove Sign Less Than 20 Square Feet		Each			
028910285	Relocate Sign Less Than 20 Square Feet		Each			
Signals						
02892001D	Traffic Signal System		Lump			
Lighting						
16525001D	Highway Lighting System		Lump			
Traffic and Safety Subtotal					\$2,730	
ITS						
135530035	1D Conduit		ft			
ITS Subtotal					\$0	Back to MAIN

Section 9 Date: 8/15/2013
Preliminary Cost Estimate
 Thousand Lakes to Sand Creek Road

Torrey Segment
Wayne County Connector



300 East to SR-12 Cost Estimate - Concept Level

Prepared By Lochner Date 2/26/2013

Approximate Route Reference Post (BEGIN) =	68.883	(END) =	69.524
Accumulated Mileage (BEGIN) =	68.883	(END) =	69.524
Project Length =	0.641	miles	3,384 ft
Current Year =	2012		
Assumed Construction Year =	2016		
Construction Items Inflation Factor =	1.23		4 yrs for inflation
Assumed Yearly Inflation for Engineering Services (PE and CE) (%/yr) =	2.5%		
Assumed Yearly Inflation for Urban Residential Right of Way (%/yr) =	0.0%		
Assumed Yearly Inflation for Urban Commercial Right of Way (%/yr) =	0.0%		
Assumed Yearly Inflation for non-Urban Right of Way (%/yr) =	0.0%		
Items not Estimated (% of Construction) =	20.0%		
Preliminary Engineering (% of Construction + Incentives) =	8.0%		
Construction Engineering (% of Construction + Incentives) =	10.0%		

Construction Items	Cost	Remarks
Roadway and Drainage	\$117,509	←
Traffic and Safety	\$2,520	←
Structures	\$75,000	←
Environmental Mitigation	\$0	To Be Determined
ITS	\$0	←
	Subtotal	
	Items not Estimated (20%)	
	Construction Subtotal	
P.E. Cost	P.E. Subtotal	8%
C.E. Cost	C.E. Subtotal	10%
Right of Way Urban Suburban Commercial	Right of Way Subtotal	
Utilities	Utilities Subtotal	
Incentives	Incentives Subtotal	
Miscellaneous	Miscellaneous Subtotal	

Cost Estimate (ePM screen 505)	2012	2016
P.E.	\$19,000	\$21,000
Right of Way	\$0	\$0
Utilities	\$0	\$0
Construction	\$234,000	\$287,000
C.E.	\$23,000	\$25,000
Incentives	\$0	\$0
Aesthetics	1% \$2,000	\$2,000
Change Order Contingency	9% \$21,240	\$26,000
UDOT Oversight	\$0	\$0
Miscellaneous	\$0	\$0
TOTAL	\$299,240	\$361,000

Segment Cost	PROPOSED COMMISSION REQUEST	TOTAL	2012	TOTAL	2016
		TOTAL	\$299,240	TOTAL	\$361,000

300 East to SR-12

Item #	Item	Quantity	Units	Price	Cost	Remarks
Roadway and Drainage						
012850010	Mobilization	1	Lump	\$22,000.00	\$22,000	Usually 7-10% of construction
013150010	Public Information Services		Lump		\$0	
015540005	Traffic Control	1	Lump	\$2,500.00	\$2,500	Usually 3-5% of construction
015720010	Dust Control & Watering	30	1000 gal	\$15.00	\$450	
017210010	Survey	1	Lump	\$6,000.00	\$6,000	Usually 1% of construction
023160020	Roadway Excavation (Plan Quantity)	776	Cu yd	\$12.00	\$9,312	
027210020	Untreated Base Course (Plan Quantity)	582	Cu yd	\$26.00	\$15,132	Assumes 6" UTBC
027410040	HMA - 3/8 bike ped path	401	Ton	\$115.00	\$46,115	Assumes 2" HMA
02744007*	SMA - 1/2 Inch	0	Ton	\$95.00	\$0	
027710025	Concrete Curb and Gutter Type B1		ft	\$15.00	\$0	
027760015	Concrete Sidewalk		Sq yd	\$8.00	\$0	
	Pedestrian Access Ramp	4	Each	\$4,000.00	\$16,000	
Roadway and Drainage Subtotal					\$117,509	Back to Main

300 East to SR-12

Item #	Item	Quantity	Units	Price	Cost	Remarks
Traffic						
027650050	Pavement Marking Paint	36	gal	\$70.00	\$2,520	
027650020	Pavement Message Paint		Each			
028910028	Sign Type A-1, 12 Inch X 36 Inch		Each			
028910270	Remove Sign Less Than 20 Square Feet		Each			
028910285	Relocate Sign Less Than 20 Square Feet		Each			
Signals						
02892001D	Traffic Signal System		Lump			
Lighting						
16525001D	Highway Lighting System		Lump			
Traffic and Safety Subtotal					\$2,520	
ITS						
135530035	1D Conduit		ft			
ITS Subtotal					\$0	Back to MAIN

300 East to SR-12

Item #	Item	Quantity	Units	Price	Cost	Remarks
Walls						
	Retaining Wall	0	Sq ft	\$35.00	\$0	Assumed 6x75 (wall area)
Minor Structure						
	Timber Boardwalk	250	ft	\$300.00	\$75,000	Length is Assumed
Hydraulics						
	Extend Box Culvert		ft			
	New Box Culvert		Lump			
	Loose Riprap		cu yd			
Geotech						
	Geotech Report	1	Lump		\$0	
	Drilling	1	Lump		\$0	
Structures Subtotal					\$75,000	Back to MAIN

Section 9

Date: 8/15/2013

Preliminary Cost Estimates 300 East to S.R. 12 Intersection

Torrey Segment Wayne County Connector



WAYNE COUNTY PATHWAY

Phase I -Thousand Lakes RV in Torrey to SR-12/SR-24 junction

Cost Estimate for Categorical Exclusion (CE)

Environmental Clearance under the National Environmental Policy Act (NEPA)

TASK	COST
Project Management	\$9,686.86
Public Involvement	\$4,278.39
Preliminary Engineering	\$6,764.08
Analyze Environmental Resources	\$5,903.01
Develop Categorical Exclusion	\$6,959.48
Wetland Delineation	\$6,000.00
Cultural Reports/DOEFOE	\$5,000.00
Survey	\$6,000.00
Direct costs	\$1,031.80
TOTAL	\$51,623.62

Deliverables:

- Public Open House
- Wetland delineation report
- Cultural resource inventory and reports
- Preliminary design (conservative impact footprint, to be refined during final design)
- Approved CE (environmental clearance under NEPA)

Assumptions:

- Project extent: Thousand Lakes RV Park to SR-12/SR-24 junction
- CE per UDOT delegated process (UDOT approval)
- Multi-use path separated from roadway outside of downtown Torrey, bike lanes in downtown Torrey
- Trail within UDOT ROW (no private property acquisition)
- "No Adverse Effect" to cultural resources
- de minimis* Section 4(f) impacts only, no full 4(f) Evaluation
- low level of public controversy
- Six month schedule
- One Kickoff meeting in Richfield
- One open house in Torrey
- Four project meetings by telephone
- No field review for preliminary engineering necessary, topo mapping available

Date: 8/15/2013

Section 9

Preliminary Cost Estimates

Environmental Clearances (CE)

Torrey Segment

Wayne County Connector





State of Utah
GARY R. HERBERT
Governor
GREG BELL
Lieutenant Governor

DEPARTMENT OF TRANSPORTATION

JOHN R. NJORD, P.E.
Executive Director

CARLOS M. BRACERAS, P.E.
Deputy Director

May 2, 2011

Wayne County Bicycle & Pedestrian Pathway Committee
C/O Wayne County Commission
PO Box 189
Loa, UT 84747

SUBJECT: Wayne County Bicycle and Pedestrian Pathway, Phase I.

Dear Committee Chair:

The Utah Department of Transportation (UDOT) believes walking and biking are viable modes of transportation and an important part of the overall transportation system.

As part of our Context Sensitive Solutions philosophy, UDOT is committed to working in a team environment to address the infrastructure needs of pedestrians and bicyclists throughout the state as much as is technically, environmentally, and financially feasible. Developing and connecting these routes with all the various interests are complex and many sensitive issues are involved, particularly in the sensitive settings within Wayne County.

UDOT supports these various groups in the development of alternative transportation use within Wayne County. Developing these alternative uses will improve safety for bicyclists, pedestrians, and motorists, which is of vital importance to our agency. Access, location, right of way and many other details are required to be secured for a successful project. UDOT is committed to working with the Wayne County Pathway Committee to help them try to develop a system they can own and maintain to help users have an enjoyable and safe experience.

If funding is secured, and you desire to construct trails within the UDOT ROW, UDOT will investigate the potential use of our ROW, prepare a betterment agreement, and develop the expectations required for a permit. The approval of funding for this project does not guarantee that the UDOT ROW will accommodate the proposed project, but UDOT commits to provide the consideration for such a request.

Thank you for the opportunity to participate in this process and look forward to working with the various groups in helping this project happen.

Sincerely,

Nathan D. Lee
Director, Region Four

RD/rga

Region Four Headquarters • 1345 South 350 West • Richfield, Utah 84701
telephone 435-893-4799 • facsimile 435-896-6458 • www.udot.utah.gov/region4



State of Utah
GARY R. HERBERT
Governor

GREG BELL
Lieutenant Governor

DEPARTMENT OF TRANSPORTATION

JOHN R. NJORD, P.E.
Executive Director

CARLOS M. BRACERAS, P.E.
Deputy Director

July 16, 2012

Mr. Gerry Tully
Psorras
4179 S Riverboat Rd. Suite 200
Salt Lake City, UT 84123

Mr. Tully,

SUBJECT: Conceptual Approval and Subsequent Guidance for Wayne County Bike/Ped Path

After reviewing your conceptual drawings that were submitted to UDOT, we approve the concept plan for this project. This does not provide approval for construction of the project. UDOT will require a full review of any and all plan sets before construction approval will be discussed.

The following items are requested by UDOT for a complete review of the project:

1. Provide typical roadway cross-section showing location of proposed bike path, existing highway R/W line, edge of road, and any other pertinent features for both SR-24 and SR-12. This information is necessary to evaluate the impacts of the proposed path to the state R/W to assess the practicality of a bike path in the UDOT R/W.
2. Provide specific information through the Torrey Town of the location of the proposed path. UDOT would recommend that the path be located on the backside of the canal between the trees and the R/W fence.
3. The use of the highway R/W for the path is not guaranteed as the need for future widening needs to be provided for. Because of this we would ask that all options for the path be pursued prior to settling on the highway R/W as the location. Documentation for potential route considered but not acceptable will need to be provided to UDOT.
4. As the path will be located on one side of the roadway in Torrey it is important to understand that the expectation of crosswalks for the crossing of this will be in accordance with UDOT Policy 06C-27 which requires 20+ pedestrians during any one hour of the day to qualify.
5. UDOT is not in a position to be providing financial assistance to this project. In-kind assistance may be limited as current funding sources are very tight.

We applaud you in your efforts thus far and wish you success as you endeavor to construct a multi-use path within Wayne County.

Region Four, 210 West 800 South, Richfield, Utah 84701
telephone 435-893-4799 • facsimile 435-896-6458 • www.udot.utah.gov/region4

UDOT Letters of Support

Torrey Segment Wayne County Connector



Correspondence from the Utah Department of Transportation

The letters shown above are copies of the letters of support for this planning effort that have been received from UDOT Region 4 managers based in Richfield, Utah. UDOT's team at Region 4 has been involved in reviewing the progress of this study throughout the planning and preliminary design process. Copies of these letters are included in the background files for this project.



State of Utah

GARY R. HERBERT
Governor

GREG BELL
Lieutenant Governor

DEPARTMENT OF TRANSPORTATION

JOHN R. NJORD, P.E.
Executive Director

CARLOS M. BRACERAS, P.E.
Deputy Director

October 28, 2012

Wayne County Commission
18 South Main
Loa, UT 84747

Dear Commissioners,

SUBJECT: Wayne County Bike Path Feasibility Study

The Region Director has asked me to respond to your letter dated September 4, 2012 regarding the proposed Wayne County Bike Path. The Utah Department of Transportation (UDOT) believes walking and biking are viable modes of transportation and an important part of the overall transportation system. We appreciate the opportunity to participate in the steering committee for the proposed bike path.

We understand the need to complete a comprehensive feasibility study and the challenges associated with limited funding for projects of this type. As participants in the steering committee we have provided all the known environmental data available, without conducting field surveys, as the UDOT typically does not provide environmental field surveys for local government projects. These activities are performed by environmental consultants hired by the local government agency. Due to the large number of projects and limited availability of our environmental personnel the UDOT frequently hires consultants to complete these work items for our projects as well.

UDOT supports Wayne County in their efforts in developing alternative transportation uses within the County. Developing these alternative uses may improve safety for bicyclists, pedestrians, and motorists, which is of vital importance to our agency. In addition to the environmental clearances it is important to understand the challenges associated with access, location, right of way (ROW) and many other details that are required to be addressed for a successful project. While UDOT may not be able to provide all these resources, we are committed to working with Wayne County to help you develop a system you can own and maintain that will help users have an enjoyable and safe experience.

Region Four • 210 West 800 South • Richfield, Utah 84701
telephone 435-893-4799 • facsimile 435-896-6458 • www.udot.utah.gov/go/region4

We would advise you to note a challenge we have experienced on projects occurs when we complete an environmental document too far in advance of securing funding for design and construction. The challenge is created by defining potential ROW needs, in the environmental document, without a funding mechanism to obtain the ROW. This has the potential to create challenges for land owners in the form of uncertainty on the status of their land. If you are successful in obtaining funding for design and construction UDOT will continue to investigate the potential use of its ROW and how the proposed path may fit within the highways overall transportation plan. These efforts may allow for cooperative agency agreements, and the development of permit expectations. The approval of funding for this project does not guarantee that the UDOT ROW will accommodate the proposed project, but UDOT commits to cooperate and provide consideration for such a request.

Thank you for the opportunity to participate in this process. We look forward to working with the various groups in helping this project happen.

Sincerely,

Monte Aldridge, P.E.
Preconstruction Engineer, Region Four

NL/jg

Date: 8/15/2013

Section 9

UDOT Letters of Support

Torrey Segment Wayne County Connector



Correspondence from the Utah Department of Transportation

The letters shown above are copies of the letters of support for this planning effort that have been received from UDOT Region 4 managers based in Richfield, Utah. UDOT's team at Region 4 has been involved in reviewing the progress of this study throughout the planning and preliminary design process. Copies of these letters are included in the background files for this project.

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Image 10-1-a Private or Sponsored Rest Areas

Sponsored rest areas along the pathway may occur adjacent to local businesses or lodging facilities. These areas should be privately funded and constructed on public use easements within private property adjacent to the pathway corridor. They may contain more elaborate facilities than will generally be constructed as part of the public process and may include elements such as benches, shade structures, bike rack, and water fountains. Ownership of the facility should be clearly indicated and advertising should be in keeping with the nature of the pathway guidelines. Maintenance and seasonal upkeep will be the responsibility of the area's owner or sponsor.



Image 10-1-c Small Rest Areas

These small areas may occur at crossroads along the path or at the location of a business that wishes to support the pathway network with minor facilities. Components of these areas may include benches, interpretive signs, and approved trash cans. If privately sponsored, the sponsor should also be required to provide the County with a public use easement and a maintenance agreement.

Pathway Support Facilities

Supportive facilities, such as rest areas, canal crossing points, parking areas, interpretive locations and trail heads may occur at key locations along the corridor. The size and content of each facility will be dependent upon location, user needs, funding sources and sponsorship. These facilities may be constructed by either a public or private entity. They must not be added to the pathway corridor in a manner that interrupts the flow of bicycles and pedestrians that use the pathway. All designs should be reviewed and approved by the pathway Steering Committee to ensure that materials, access, public safety and long-term maintenance expectations support the mission and overall intent of the Wayne County Connector system.

Support Facility Costs

The costs for these support facilities can vary depending on the location, included elements and methods of construction. Smaller pathway rest areas may be nothing more than a cleared area along the pathway with some boulders placed for seating. More expansive rest areas with shade structures, benches and water sources may cost in the range of \$3000 to \$6000. Final design of each segment of the pathway should include locations for potential public or private support facilities based on surveys and land ownership patterns. The use of County or town parcels and private land is encouraged to minimize permitting and construction costs.



Image 10-1-b Primitive Interpretive Locations and Rest Areas

Smaller interpretive or rest areas along the pathway can be constructed using local boulders for seating areas. These facilities may be as simple as a widened area alongside the shared pathway. Interpretive locations may also contain a small information sign.

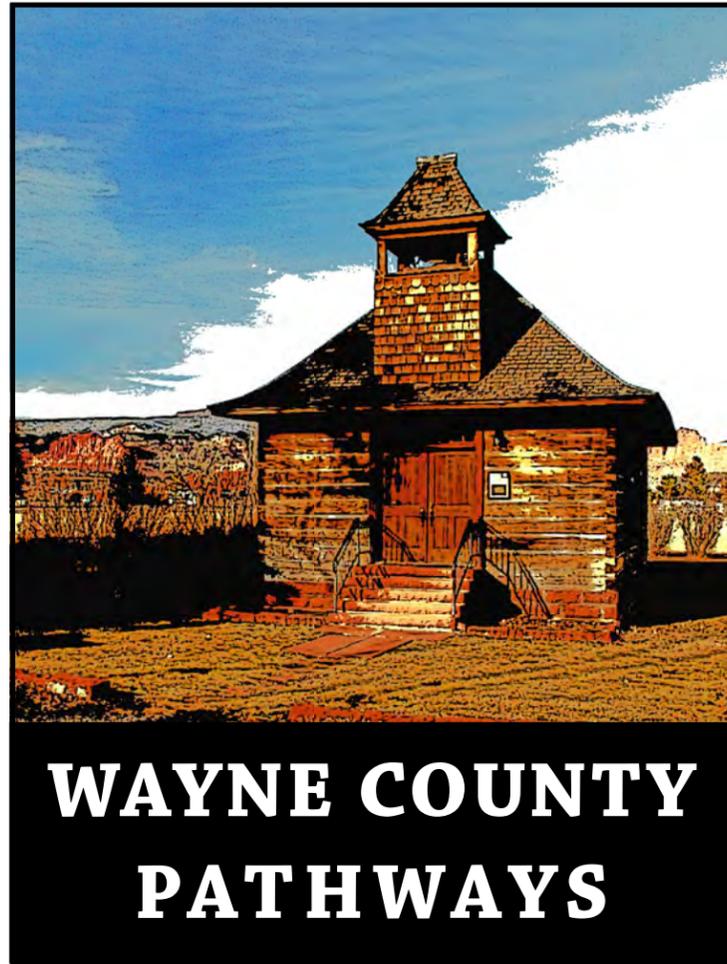
Facility Recommendations

**Torrey Segment
Wayne County Connector**

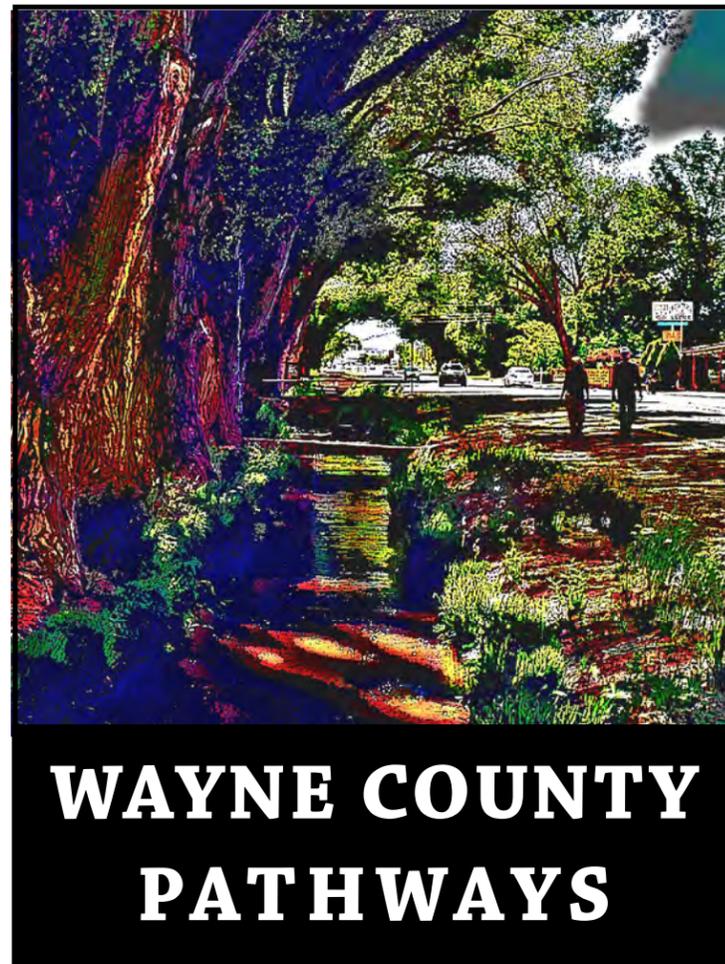


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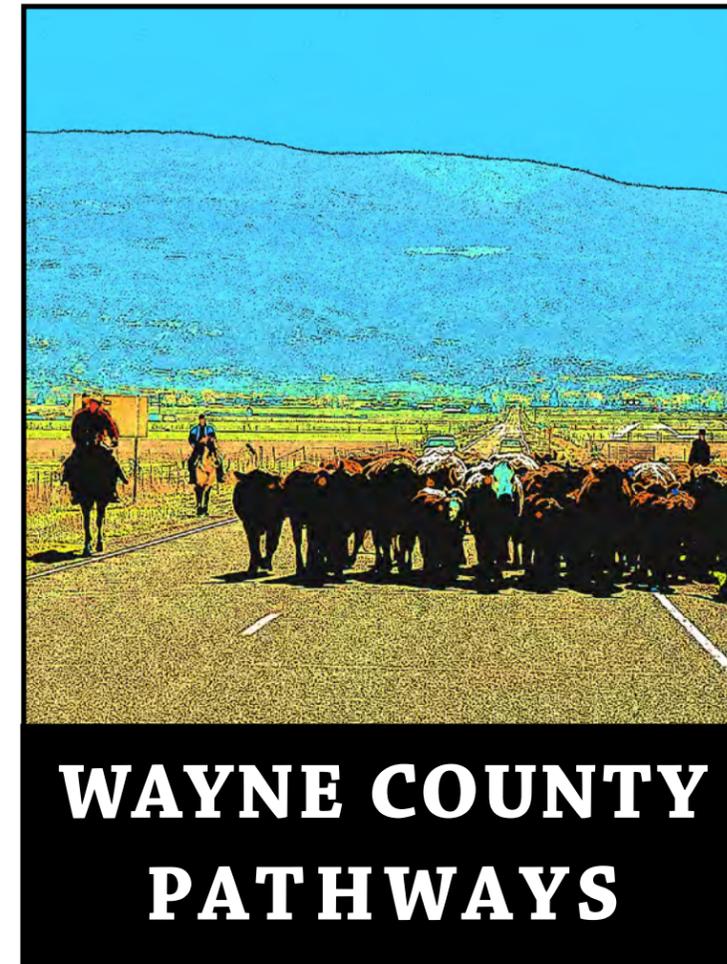
Historic Schoolhouse Image



Torrey Trees and Canal Image



S.R. 12 Cattle Drive Image



11-1-a County History Theme

11-1-b Local Community Theme

11-1-c Agricultural Theme

Potential Thematic Images

Thematic Elements and Branding

When evaluating thematic images for use on the Wayne County Connector pathway network it became clear that certain goals should be considered with respect to the identifying elements of the project. It was determined that images that emphasize the uniqueness of the area were preferable to images of generic recreational uses such as hiking and biking. Pathway users already know what they are doing and they do not need additional images, such as bicycles, to reinforce their actions along the pathway network or its intended use.

Pathway users should be reminded of the nature of the community they are moving through and the local culture that supports it. As the pathway network is completed throughout the County there should be opportunities to relate each segment of the pathway to its immediate surroundings or location. It is anticipated that, from the examples of the images that are selected, each segment can be uniquely identified so that the user can recognize where they are along the path and when they transition from one segment or community into the next.

Date: 8/15/2013

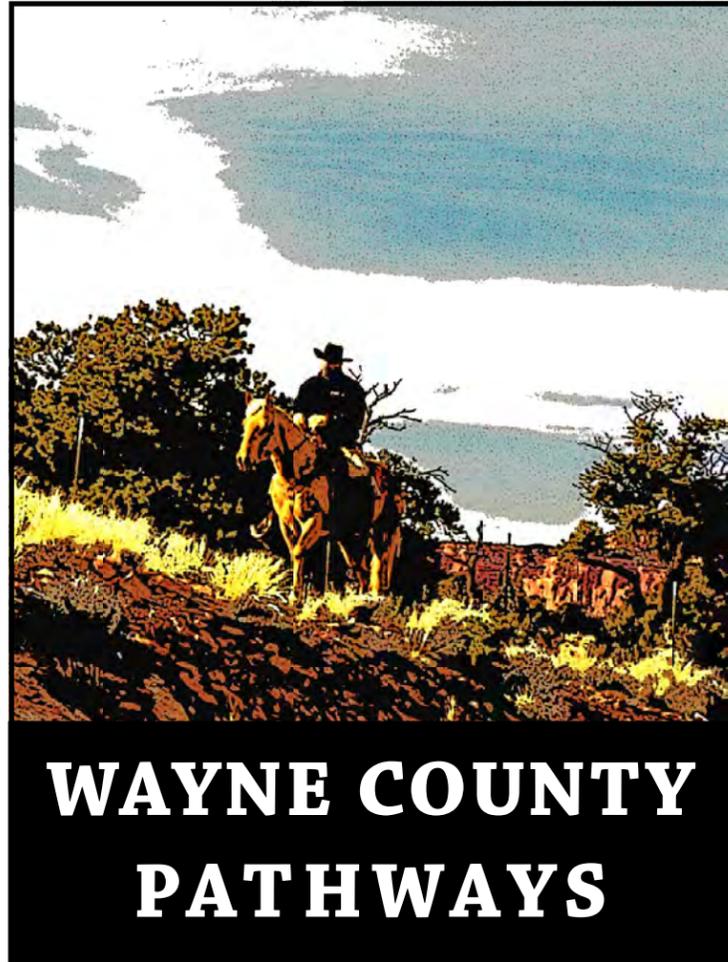
Section 11

Themes and Signage

Torrey Segment Wayne County Connector

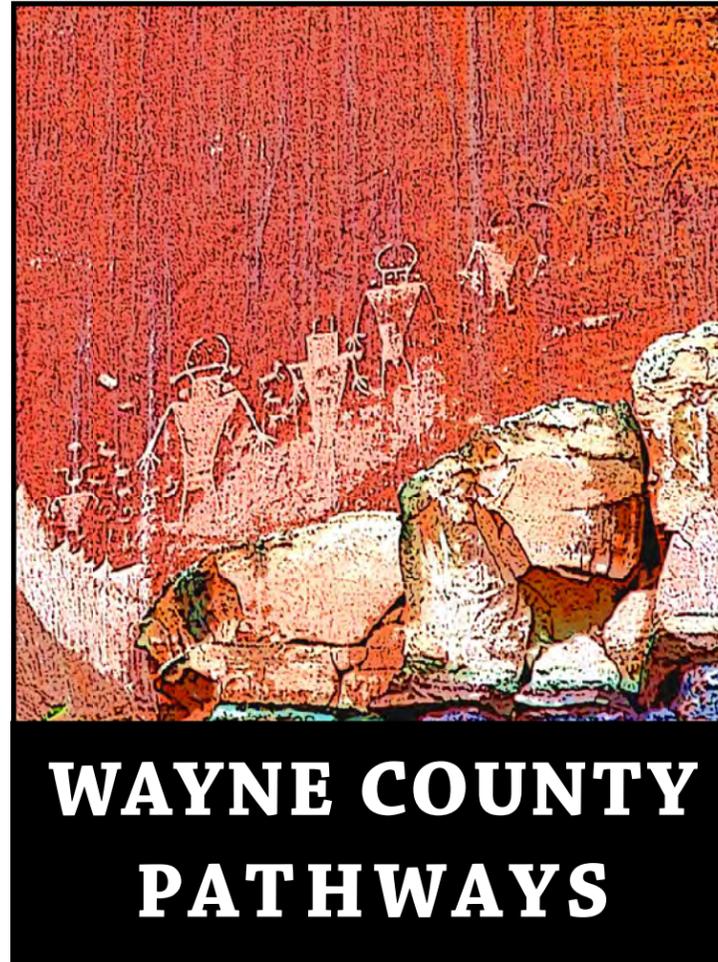


Western Horseman Image



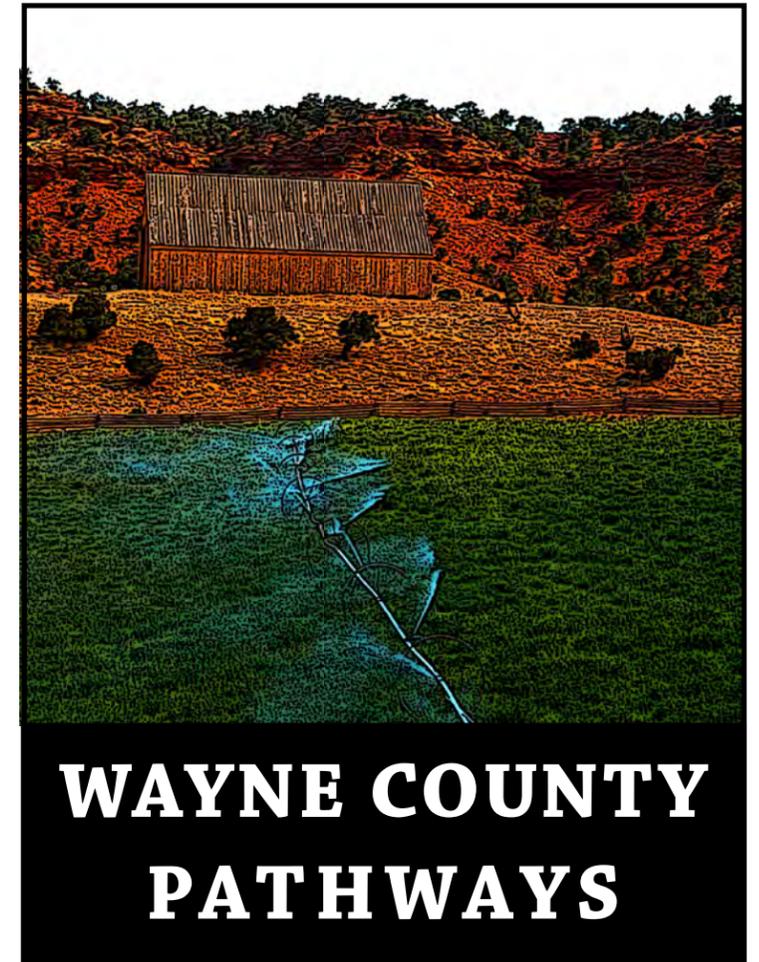
1 1-2-a County Culture Theme

Capitol Reef Petroglyphs Image



1 1-2-b Archeological Theme

S.R. 12 Barn and Irrigation Line Image



1 1-2-c Agricultural Theme

Potential Thematic Images

Section 11

Date: 8/15/2013

Themes and Signage

Torrey Segment Wayne County Connector

Thematic Elements and Branding

The use of local images that represent activities and culture in Wayne County is recommended for all signs and way-finding elements. The images should be rendered as high-contrast images utilizing a limited range of colors so that they are easily recognizable.

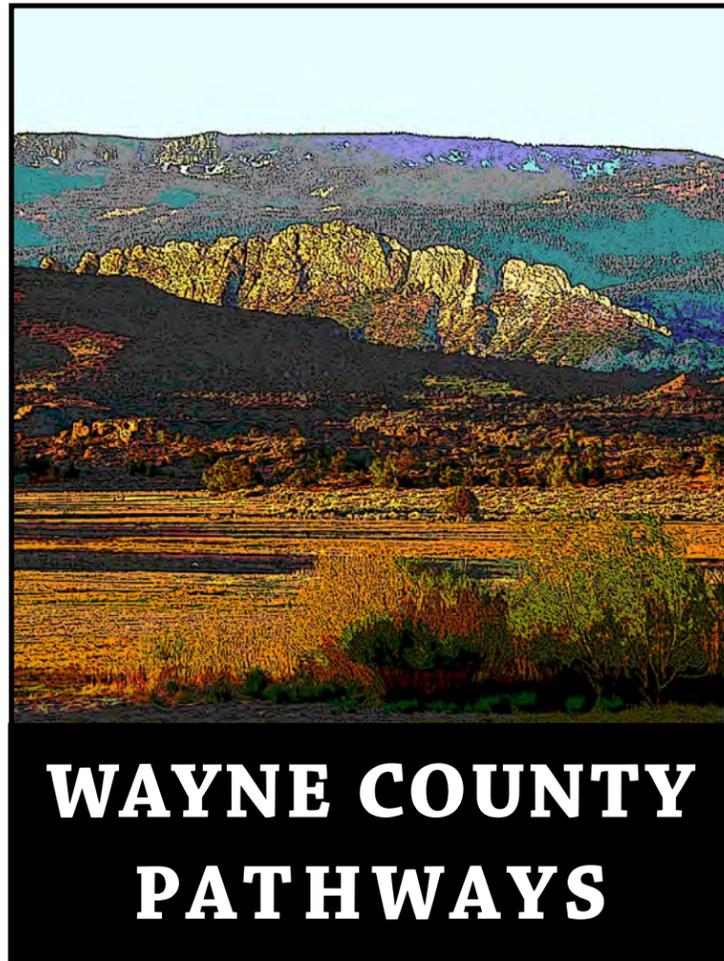
The use of bright hues and saturated colors will complement the striking beauty of the natural landscapes of the area. The themes suggested in this study should be used as a guideline when finalizing the branding elements for the pathway network.

The use of local artists and photographers as a source of the preferred images for the pathway signs is strongly encouraged.

When used as signs for posts or incorporated into interpretive elements the images should be screen printed into laminated sign boards. These weather protective panels can be printed in larger areas of 6' x 8' and can contain multiple images and panels that are then cut to size. Costs for printed panels range from \$45 to \$75 per square foot, depending on material type, thickness, weather resistance and process selected. The printing of full panels is recommended to minimize production costs and to provide replacement panels when necessary.

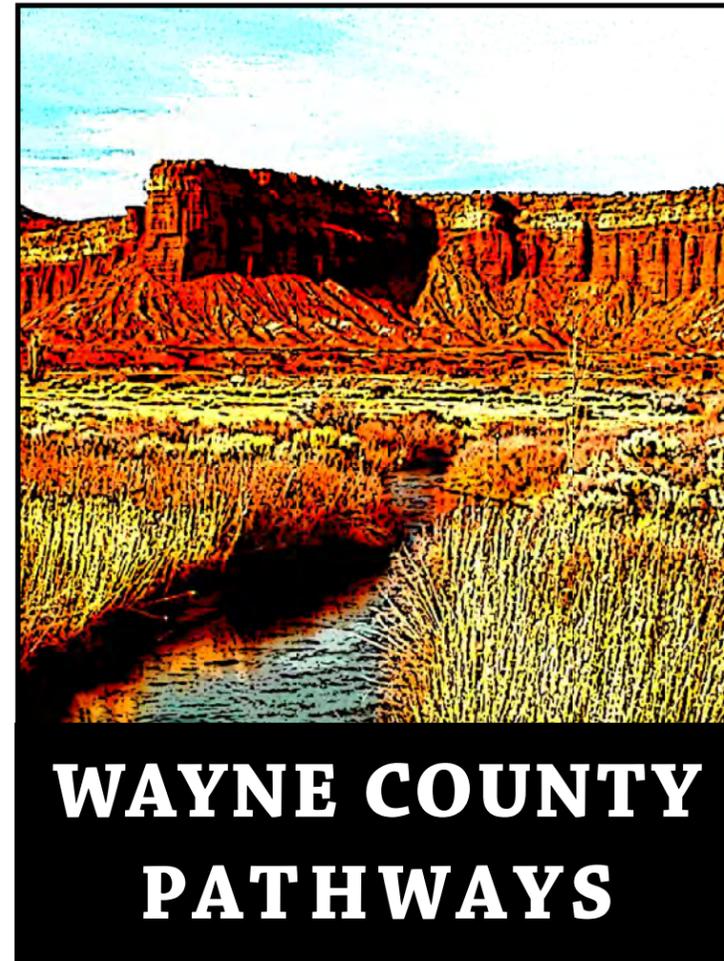


Wayne County Scenic Landscape



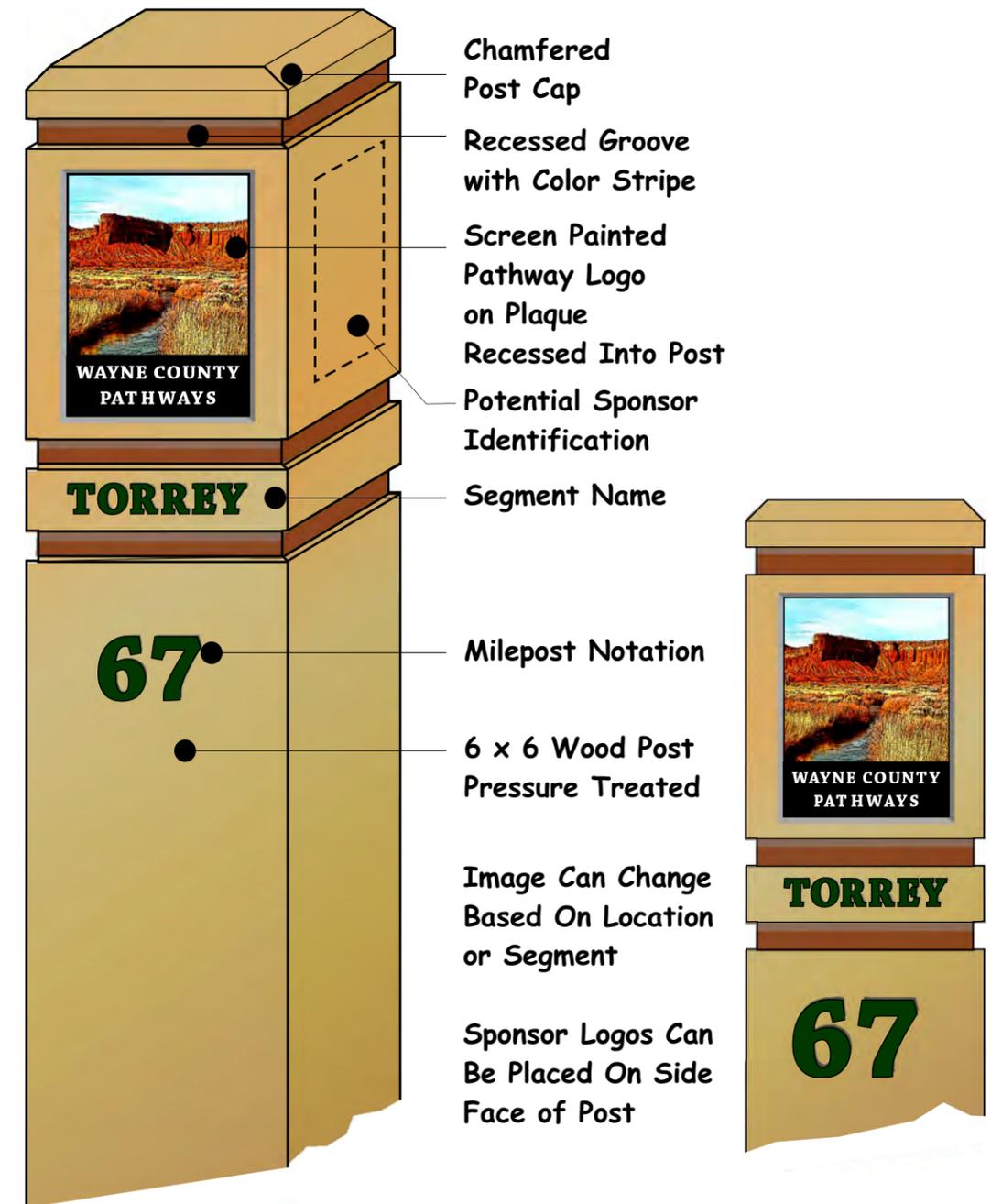
11-3-a Landscape Theme

Red Velvet Cliffs Image



11-3-b Landscape Theme

Potential Thematic Images



11-3-c Marker Post with Thematic Elements

Timber marker posts may occur at major intersections or at mile posts along the roadway corridor. Height of posts may vary according to need and placement with a range of 48" to 96" from finish grade to top of post. Sponsors may be enlisted to offset cost of installation. Directional 'blade signs may be added at intersections and points of interest. Post installation includes the fabricated timber post, a concrete post hole and applied signage panels. Installed cost: \$200 to \$600.

Date: 8/15/2013

Section 11

Themes and Signage

Torrey Segment
Wayne County Connector



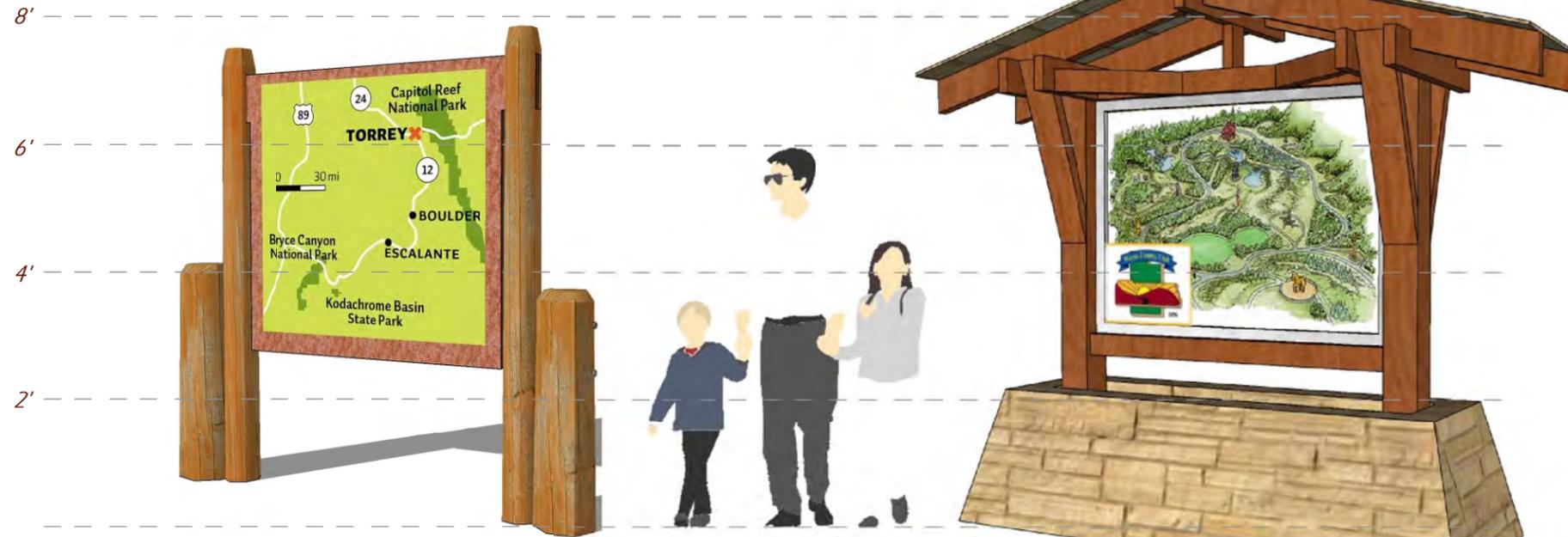


Image 11-4-a Trailheads Map Board

Sign includes timber frame construction set in concrete post holes with a laminated sign. Installed Cost: \$450 - \$650

Image 11-4-b Information Kiosk

Sign includes a concrete foundation, decorative stone base and timber frame construction with a protective roof element over a laminated sign. Installed Cost: \$3500 - \$7500

Notes on Signage Illustrations

Images are presented as general guidelines to illustrate the types of facilities and methods of construction that may occur along the pathway network. Costs associated with any sign element may vary depending on the size, location, materials and associated improvements. Costs listed are shown as an estimated range of costs for each image or description based on materials included in the illustration.

Section 11 Date: 8/15/2013

Themes and Signage

**Torrey Segment
Wayne County Connector**



Image 11-4-c Trailheads and Information Centers

Primary trailheads should include information signs or kiosks that give the user significant information related to activities in the immediate vicinity and directional maps showing the relative location along the pathway. Additional elements such as seating surfaces, trash receptacles and bike racks may occur at these locations.



Wayne County Pathways

Carsonite trail markers should be placed at consistent intervals along the pathway to guide users. These durable, low-cost signs can contain applied markers that indicate location, pathway segment and points of interest.

Height varies based on depth of burial during installation. Average height above finish grade is 48".

Typical Carsonite Sign Markers



Carsonite trail marker signs may be placed at quarter-mile increments and at point of interest or trail crossings. Marker consists of the basis flexible post with applied decal signs. Installed Cost: \$55 to \$85 per marker sign.

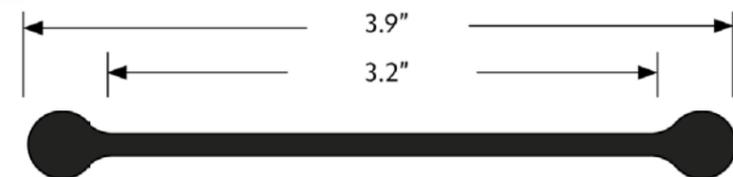


Image 11-4-d Carsonite Trail Markers

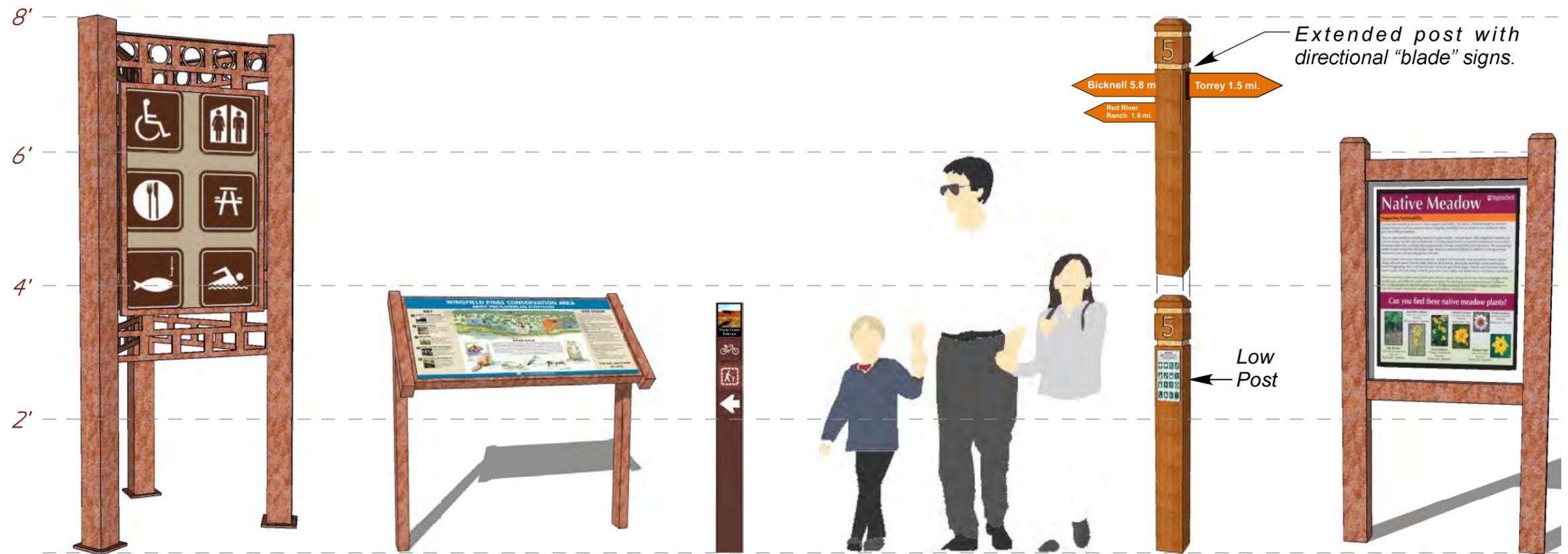


Image 11-5-a
Steel 3-Sided Information Sign
Cost: \$3,500 to \$6,500

Image 11-5-b
Low-rise Interpretive Sign
Cost: \$1,000 to \$1,500

Image 11-5-c
Carsonite Trail Marker
Cost: \$55 to \$85

Image 11-5-d
Wooden Trail Post
Cost: \$200 to \$600

Image 11-5-e
Steel Interpretive Sign
Cost: \$1,000 to \$1,500

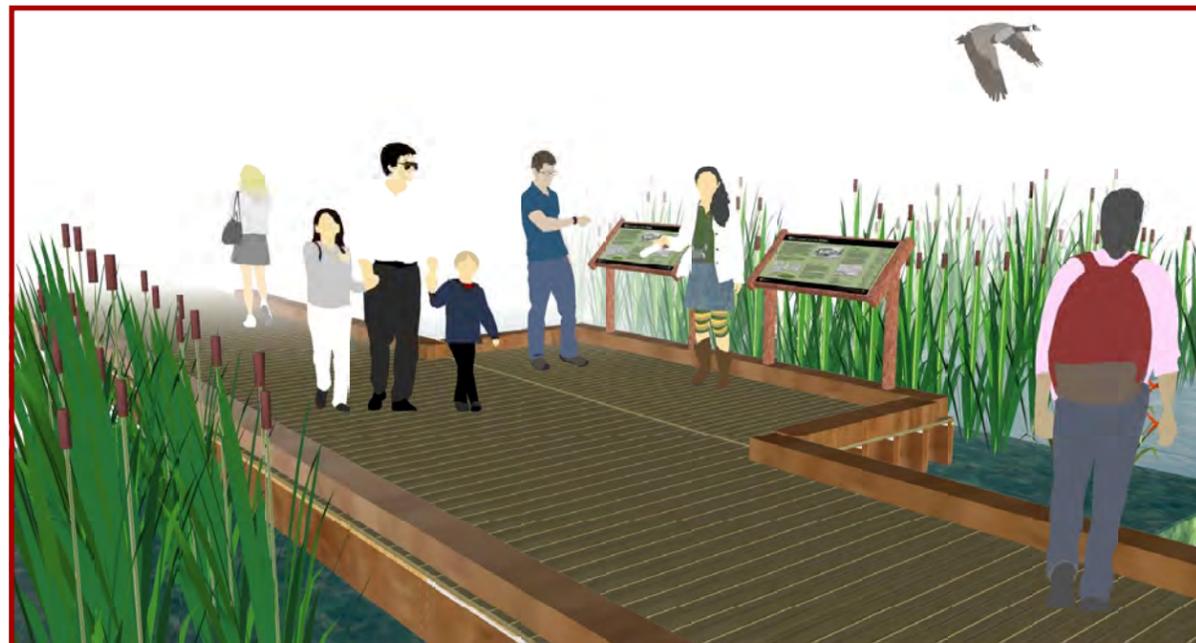


Image 11-5-f Interpretive Area Signs
At designated areas along the pathway system, such as river crossings, view areas or cultural landmarks, there is the opportunity for smaller interpretive signs that inform the user of the significance of the specific location.

Materials

The use of materials that blend with the natural landscape is encouraged for all signs and facilities along the pathway system. Structures made from timbers, stone and steel that develops a 'rusted' finish should be utilized.

Date: 8/15/2013

Section 11

Themes and Signage

**Torrey Segment
Wayne County Connector**



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