



# Bicycle Tourism Trails Study

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## Technical Memorandum 4: Stakeholder Engagement

Jacobs for TxDOT Public Transportation Division

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### **Acknowledgements**

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## Introduction

The purpose of the Bicycle Tourism Trails Study (BTTS) is to investigate the development of a statewide bicycle tourism trail network. The study was initiated by the Texas Department of Transportation's (TxDOT's) Public Transportation Division (PTN) Bicycle and Pedestrian Program in response to 2005 legislation (Texas Transportation Code § 201.9025 Texas Bicycle Tourism Trails).

The 2005 Bicycle Tourism Trails legislation states:

*(a) The Texas Department of Transportation Bicycle Advisory Committee shall advise and make recommendations to the commission on the development of bicycle tourism trails in this state. Recommendations on bicycle tourism trails developed under this section:*

- (1) shall be made in consultation with the Parks and Wildlife Commission and the Texas Economic Development and Tourism Office;*
- (2) shall reflect the geography, scenery, history, and cultural diversity of this state;*
- (3) shall maximize federal and private sources of funding for the designation, construction, improvement, maintenance, and signage of the trails and the promotion of bicycle tourism; and*
- (4) may include multiuse trails to accommodate equestrians, pedestrians, and other nonmotorized trail users when practicable.*

*(b) The department may contract with a statewide bicycle nonprofit organization for assistance in identifying, developing, promoting, or coordinating agreements and participation among political subdivisions of this state to advance bicycle tourism trails.<sup>1</sup>*

TxDOT-PTN staff and its consultant, CH2M (now Jacobs), worked with TxDOT's Bicycle Advisory Committee (BAC) and TxDOT-PTN staff to propose recommendations for the development of bicycle tourism trails in Texas. This study applies BAC and TxDOT-developed quantitative and qualitative routing criteria to provide an example vision of a statewide network of tourism bikeways. The products produced as a result of this study will serve as an initial high-level network analysis for statewide bicycle tourism consideration and future development.

Bicycle tourism can be defined as any travel or tourism-related activity that incorporates a bicycle. Bicycle tourism activities include, but are not limited to, long-distance bicycle touring, bike-packing, local day rides, urban cycling, and bicycle events that include races and/or destinations. Bicycle tourism activities occur in urban, suburban, and rural locations on a variety of on-road and off-road bikeways.

A network of bicycle tourism trails across Texas would highlight the natural, historic, and exceptional landscapes across the many unique regions of the state. These tourism trails

could attract bicyclists from around the world, showcase communities across the state, and boost economic development. The bicycle tourism trail network could also provide recreational and travel opportunities for local Texans craving a Monday-night ride or perhaps a weekend family adventure.

The purpose of this technical memorandum is to document the stakeholder engagement process used by TxDOT-PTN and Jacobs to inform, guide, and validate BTTs products.

### Stakeholder Engagement Approach

At the earliest stages, TxDOT-PTN determined the BTTs stakeholder engagement approach should match both the scale and depth of analysis for a statewide planning-level study. More specifically, stakeholder engagement methods should complement the depth of detail anticipated for this statewide, high-level analysis. The stakeholder engagement approach used for the BTTs involved guidance from a steering committee (BAC Working Group) and input and validation from broad, interregional, and statewide stakeholders. TxDOT-PTN and Jacobs staff (hereafter “the project team”) used TxDOT’s BAC to confirm needs and priorities, while engaging staff at regional entities (metropolitan planning organizations [MPOs], Councils of Government [COGs], and TxDOT Districts) for critical local knowledge of bikeway plans, projects, and infrastructure.

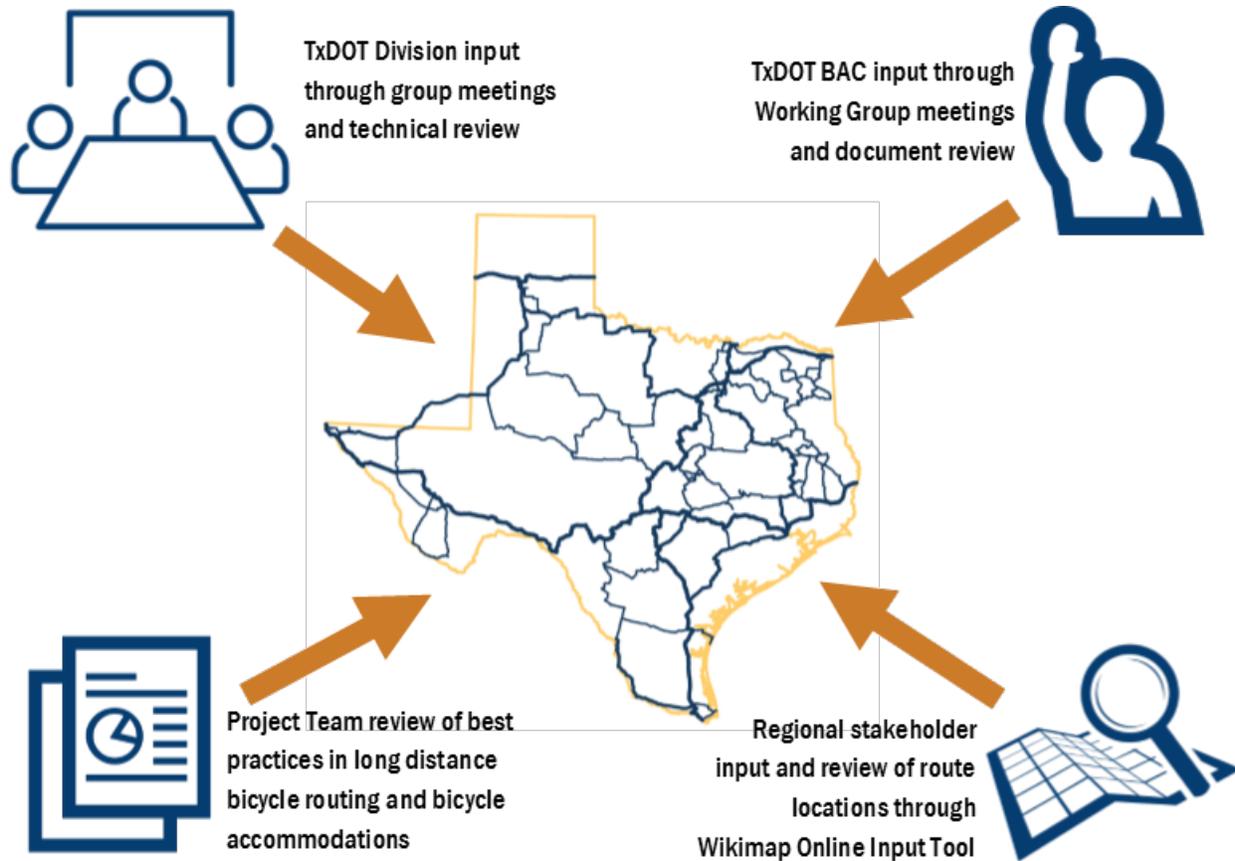
Additionally, TxDOT-PTN acknowledges that a more thorough analysis of local conditions and extensive stakeholder engagement are necessary to advance BTTs Example Network routes. Indeed, the Example Network was so named because it represents one broad application of the qualitative and quantitative criteria established as part of the study.

TxDOT’s BAC and the BAC Working Group played a critical role to steer this study. The project team’s interaction with the Working Group was essential to the development of a transparent, data-driven process for identifying proposed bicycle tourism route locations. Using an iterative, consensus-driven approach, the project team sought monthly approval and/or direction from the Working Group on various interim products throughout project development (see Figures 1 and 2). Project team members presented and led discussions to update all BAC members quarterly, resulting in a unanimous BAC endorsement of interim products and the final report.

Figure 1: Simplified BTTs Stakeholder Engagement Schedule

Project Team Activities		2017												2018		
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	JAN		
Project Development	Vision, goals, objectives, and scope development															
	Bikeway and bicycle tourism benefits research															
	Example Network development															
	Bikeway design criteria															
Stakeholder Engagement	BAC Meetings															
	Working Group Conference Call Meetings															
	Texas State Agency Tourism Council Meetings															
	Regional stakeholder outreach (Wikimap)															

Figure 2: BTTs Development Diagram



### TxDOT’s Bicycle Advisory Committee and Working Group

TxDOT’s BAC is comprised of 11 Texas citizens who volunteer their time and travel expenses to represent bicycling communities from across the state. BAC members are appointed by the Texas Transportation Commission to serve a 3-year term. Members represent various professions and diverse backgrounds but share a passion for bicycles. The main objective of the committee is to advance the consideration of bicycling as part of transportation planning and development. TxDOT’s BAC meets quarterly in-person at a TxDOT campus in Austin to advise TxDOT on bicycle issues. BAC members help TxDOT incorporate a bicyclist’s perspective into

Figure 3: TxDOT’s Bicycle Advisory Committee



departmental policies affecting bicycle use, including the design, construction, and maintenance of roads.

**Working Group**

A subset of BAC members volunteered to be a part of a Working Group to help guide the efforts of the project team as the study progressed. The Working Group was charged with advising and advancing the study between quarterly BAC meetings. At the quarterly BAC meetings, members

provided confirmation/direction to the project team on activities and priorities. During monthly in-person meetings or WebEx-style video and audio conference calls, the Working Group reviewed interim products and made suggestions for improvement. Figure 4 illustrates BTTs project partners

Figure 4: BTTs Project Partners Diagram

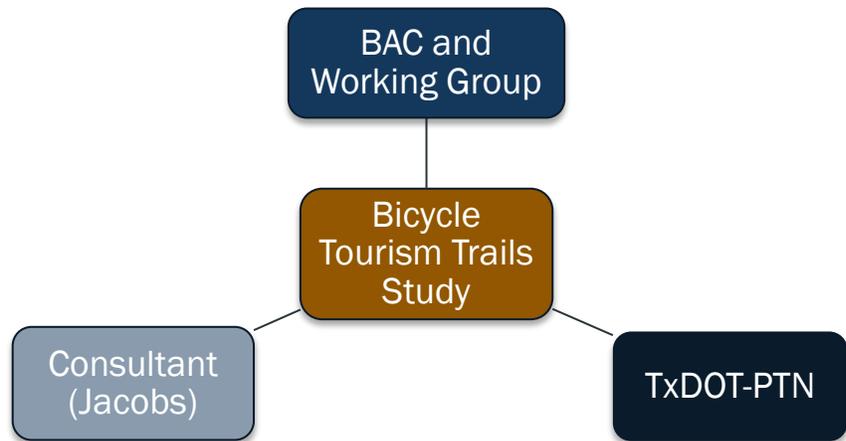


Table 1 lists the names of the BAC and Working Group members.

Table 1: BAC and Working Group Members

	BAC Members	Working Group Member
2017 BAC Members	Allison Fink	
	Robert Gonzales	<input checked="" type="checkbox"/>
	Ramiro Gonzalez	<input checked="" type="checkbox"/>
	Billy Hibbs	<input checked="" type="checkbox"/>
	George Mendes	
	Joseph Pitchford	<input checked="" type="checkbox"/>
	DawnElla Rust	<input checked="" type="checkbox"/>
	David Steiner	
	Shawn Twing	<input checked="" type="checkbox"/>
	Karla Weaver	<input checked="" type="checkbox"/>

*Table 1: BAC and Working Group Members*

	BAC Members	Working Group Member
	Anne-Marie Williamson	
New BAC Members added in October 2017	David Ham	
	Margaret O'Brien-Nelson	
	Jeffrey Pollack	
	Cristian Sandoval	

Appendix A documents the project team’s 12 Working Group meetings. Table 2 provides a summary of BAC and Working Group meeting activities over the duration of the study.

*Table 2: TxDOT BAC and Working Group Meeting Activities*

Group	Date	Activities
Working Group	1/12/2017	<ul style="list-style-type: none"> <li>• Introduction to Bicycle Tourism Trails Study</li> </ul>
BAC	1/20/2017	<ul style="list-style-type: none"> <li>• Introduction to Bicycle Tourism Trails Study</li> </ul>
Working Group	2/21/2017	<ul style="list-style-type: none"> <li>• Develop vision, goals, and objectives (Part 1)</li> </ul>
Working Group	3/20/2017	<ul style="list-style-type: none"> <li>• Develop vision, goals, and objectives (Part 2)</li> <li>• Define stakeholders</li> <li>• Review national/regional examples of tourism trails</li> <li>• Discuss statewide approaches to bicycle tourism</li> </ul>
BAC	4/10/2017	<ul style="list-style-type: none"> <li>• Approve vision, goals, and objectives</li> <li>• Review national/regional examples of tourism trails</li> <li>• Discuss statewide approaches to bicycle tourism</li> </ul>
Working Group	4/10/2017	<ul style="list-style-type: none"> <li>• Initial routes exercise</li> <li>• Prioritizing route location criteria exercise</li> </ul>
Working Group	5/15/2017	<ul style="list-style-type: none"> <li>• Review Working Group drawn routes (April exercise results)</li> <li>• Review route location criteria (April exercise results)</li> <li>• Review Preliminary Routes based on exercise results</li> </ul>
Working Group	6/20/2017	<ul style="list-style-type: none"> <li>• Review Preliminary Route updates</li> </ul>

*Table 2: TxDOT BAC and Working Group Meeting Activities*

Group	Date	Activities
		<ul style="list-style-type: none"> <li>• Discuss process for applying quantitative route location criteria metrics</li> <li>• Introduce Wikimap Online Input Tool for regional stakeholders input</li> </ul>
BAC	7/17/2017	<ul style="list-style-type: none"> <li>• Review Preliminary Route updates</li> <li>• Discuss stakeholder outreach</li> </ul>
Working Group	7/17/2017	<ul style="list-style-type: none"> <li>• Review Preliminary Route updates</li> <li>• Application of quantitative route location criteria</li> <li>• Discuss benefits of bicycle tourism and bikeways research</li> </ul>
Working Group	8/22/2017	<ul style="list-style-type: none"> <li>• Present Conceptual Routes</li> <li>• Discuss bikeway types and design criteria (Part 1)</li> <li>• Present Wikimap Online Input Tool interface for regional stakeholders input</li> </ul>
Working Group	9/29/2017	<ul style="list-style-type: none"> <li>• Review Wikimap (regional stakeholder) feedback (Part 1)</li> <li>• Review bikeway types and design criteria (Part 2)</li> </ul>
BAC	10/27/2017	<ul style="list-style-type: none"> <li>• Review Wikimap (regional stakeholder) feedback (Part 2)</li> <li>• Discuss bikeway types and design criteria</li> <li>• Stakeholder outreach update</li> </ul>
Working Group	10/27/2017	<ul style="list-style-type: none"> <li>• Review Conceptual Route changes in response to Wikimap feedback</li> <li>• Discuss bikeway types and design criteria (Part 3)</li> <li>• Review U.S. Bicycle Route System Route Designation process</li> </ul>
Working Group	12/12/2017	<ul style="list-style-type: none"> <li>• Present Example Network</li> <li>• Discuss cost estimates for BTTS bikeway types</li> </ul>
Working Group	1/19/2018	<ul style="list-style-type: none"> <li>• Review all draft final products</li> <li>• Discuss next steps</li> </ul>
BAC	1/22/2018	<ul style="list-style-type: none"> <li>• Seek BAC endorsement for all products</li> <li>• Discuss next steps</li> </ul>

*TxDOT's Bicycle Advisory Committee (BAC) was heavily involved in the work of the Bicycle Tourism Trails Study (BTTS) from start to finish. The eleven members of the BAC represent a diverse cross-section of cycling advocates from around the state. This became extremely useful when various routes, parks, and places of interest were under consideration. We believe that the BTTS will help revive the economies of hundreds of small towns, while firmly placing Texas at the top of all cycling tourism destinations. We strongly, and unanimously, endorse its results.*

*- Billy Hibbs, Chair, TxDOT's Bicycle Advisory Committee*

## Defining Stakeholders

In the beginning stages of the study, the project team and Working Group identified the stakeholders. The project team suggested that stakeholder qualities may include one or more of the following:

- Knowledge of regional bikeways in Texas
- Expertise in bicycle tourism
- Responsibilities related to development, promotion, and/or implementation of Texas bicycle tourism trails

Additionally, stakeholders may be asked to do the following:

- Identify potential routes
- Review route location criteria
- Review bikeway design details
- Identify issues or concerns
- Review draft bicycle tourism route locations

Table 3 presents the BTTS stakeholders as identified by the BAC, Working Group, and project team.

*Table 3: BTTS Stakeholders*

Stakeholder	Attributes
TxDOT Division and District staff	<ul style="list-style-type: none"> <li>• Knowledge of project development (including cost estimation, safety requirements, recommended design guidance, etc.)</li> <li>• Expertise and access to geographic information system (GIS) data</li> </ul>

Table 3: BTTS Stakeholders

Stakeholder	Attributes
	<ul style="list-style-type: none"> <li>• Experience constructing bikeways on state-maintained roadways</li> <li>• Knowledge of planned, funded, and constructed projects across Texas</li> </ul>
Texas Parks and Wildlife Department (TPWD)	<ul style="list-style-type: none"> <li>• Knowledge of recreational trails and other long-distance bicyclist destinations across Texas</li> <li>• Experience constructing recreational trails and bicycle/pedestrian facilities</li> </ul>
Governor’s Office of Economic Development and Tourism (EDT)	<ul style="list-style-type: none"> <li>• Practical knowledge of tourism spending models and economic benefits</li> <li>• Potential partner during future promotional phases</li> </ul>
Texas Historical Commission (THC)	<ul style="list-style-type: none"> <li>• Knowledge of long-distance bicyclist destinations, Texas Heritage Trails program, and Texas Main Street program</li> </ul>
Metropolitan Planning Organizations (MPOs)	<ul style="list-style-type: none"> <li>• Knowledge of local bicycle infrastructure, planning efforts, bicycle project development, and local GIS data</li> </ul>
Councils of Governments (COGs)	<ul style="list-style-type: none"> <li>• Knowledge of regional destinations, economic development, local transportation infrastructure, planning efforts, and local GIS data</li> </ul>
BikeTexas	<ul style="list-style-type: none"> <li>• Knowledge of previously considered bicycle tourism trail routes</li> <li>• Valuable partner for future support and promotion of BTTS Routes</li> </ul>
Texas Department of State Health Services	<ul style="list-style-type: none"> <li>• Knowledge of public health issues and potential partner during future promotional phases</li> </ul>
Texas Commission on the Arts	<ul style="list-style-type: none"> <li>• Knowledge of arts and tourism destinations and potential partner during future promotional phases</li> </ul>

## TxDOT Divisions and Districts

TxDOT's 33 Divisions are responsible for a diverse range of services for the agency ranging from procurement and occupational safety to maritime and strategic planning. Division staff with skills and abilities in areas related to planning, data management, traffic operations, and project development (including design, construction, and maintenance) were particularly important to the project team. The TxDOT Divisions engaged during the study included:

- Design (DES)
- Transportation Planning and Programming (TPP)
- Traffic Operations (TRF)
- Travel Information (TRV)

As these Divisions are likely to be involved in future implementation stages, it was important to inform and engage Division leadership. Division staff assisted the project team in several ways including, but not limited to, the following:

- Reviewed BTTs bikeway design criteria and suggested changes according to their knowledge of TxDOT and Federal Highway Administration (FHWA) guidance and procedures
- Provided guidance on the usage of TxDOT GIS data during quantitative criteria application and route development
- Provided insights into long-range planning and development of the Texas Transportation Plan at TxDOT

There are 25 TxDOT Districts across the state, in which District staff oversee the planning, design, construction, and maintenance of state roadways. As a result, TxDOT District staff are not only knowledgeable about the state-maintained roadway network within their District, but also about municipal and regional trends, issues, and transportation plans in their area. TxDOT District Bicycle Coordinators and Transportation Alternative Program (TAP) and Transportation Alternative Set-Aside Program (TASA) Coordinators were directly solicited for feedback regarding the Conceptual Routes via the Wikimap Online Input Tool. For more information regarding Wikimap feedback from TxDOT District, MPO, and COG staff, please see the Wikimap Online Input Tool section below and refer to *Technical Memorandum 2: Routing Criteria and Example Network Development*.

## Consultation with Texas State Agencies

In the 2005 legislation for Texas Bicycle Tourism Trails (Texas Transportation Code § 201.9025 Texas Bicycle Tourism Trails), TxDOT's BAC is directed to consult with the Parks and Wildlife Commission and the Texas Economic Development and Tourism Office. The study team worked with these and other agency officials during the study. The

recommendations of the study will be shared with agencies as they will be valuable partners in developing a bicycle tourism trail network. As noted in Table 3, additional state agencies have knowledge and responsibilities directly related to the products developed during this study and may be involved during future implementation of a bicycle tourism trail network.

Representatives from the Governor’s Office of Economic Development and Tourism (EDT), Texas Historical Commission (THC), Texas Parks and Wildlife Department (TPWD), and the Texas Commission on the Arts (TCA) regularly meet to discuss Texas tourism concerns under the designation of the Texas State Agency Tourism Council (TSATC). Project team representatives attended two TSATC meetings to discuss the study.

The identified state agencies are discussed in more detail as follows.

*Office of the Governor, Economic Development and Tourism Division (EDT)*

According to their website, the EDT supports the Governor’s efforts to position Texas as the world’s premier business location and travel destination. EDT coordinates the promotion of Texas tourism for the state and works in concert with local/regional partners (convention and visitors bureaus, local chambers of commerce, private travel-related organizations and associations) to promote economic opportunity through domestic and international tourism marketing<sup>2</sup>.



EDT would play a critical role in successfully marketing a future bicycle tourism trail network and could help ensure a higher return on investment for future bikeway infrastructure. EDT’s Travel Research staff provide and analyze information about domestic and international travel behavior and trends, which will assist future bicycle tourism trail route/network planning efforts. Additionally, EDT’s Research and Economic Analysis Department could assist in targeting strategic bikeway investments within appropriate Texas geographies and markets. EDT’s Director of Tourism has been an active member of the TSATC and was an active collaborator during TSATC meetings with the project team.

*Texas Historical Commission (THC)*

THC works to preserve the history of Texas and quantify the impacts that historic preservation and tourism have on the Texas economy. Within the THC, the Community Heritage Development Division partners with communities and regions to revitalize historic areas, stimulate tourism, and encourage economic development using historic preservation strategies. This division administers the Texas Main Street and Texas Heritage Trails programs, while separately evaluating the economic impact of historic preservation and heritage tourism in Texas.



The project team engaged THC to gain insights into Texas Heritage Trails networks and small town/main street communities. Texas Heritage Trails is a tourism and economic development initiative which promotes Texas' historic and cultural resources through 10 Texas Heritage Trail Regions and historic sites. Through this and other programs, THC has developed stakeholders and partners in small towns across Texas. Future collaborative efforts between these small town economic development/revitalization efforts and any future bicycle tourism trails should be encouraged. THC provided data describing locations of Texas Main Street programs and heritage trails.

### *Texas Parks and Wildlife Department (TPWD)*

According to the TPWD website, this state agency works:

*“to manage and conserve the natural and cultural resources of Texas and to provide hunting, fishing and outdoor recreation opportunities for the use and enjoyment of present and future generations.”<sup>3</sup>*



The project team engaged TPWD to gain insight into previous and continuing investments in recreational trails around the state. TPWD operates the Texas Recreation and Parks Account grant program (\$15 million every 2 years) and the Recreational Trail Fund Program (funded through the Federal Highway Administration's [FHWA's] Transportation Alternatives Program). In communicating with the project team, TPWD staff shared their experiences creating different types of recreational trails such as paved and unpaved trails as well as paddling, birding, and other wildlife trails to encourage nature tourism and visitation of state parks. Future collaborative marketing efforts between these recreational trails and any future bicycle tourism routes/networks should be encouraged.

Additionally, TPWD provided valuable GIS data representing the locations of trails and boundaries of state and national parks, wildlife areas, and similar preserved public lands. These protected natural and scenic areas could act as bicycle tourism destinations and lodging sites; their location was important to the route development process.

If TxDOT or another state agency champions the development of bicycle tourism trails or a bicycle tourism network, having TPWD as a partner will be critical. TPWD has a history of constructing a variety of paved and unpaved bicycle and pedestrian accommodations in state parks. Future bicycle tourism infrastructure investments should be coordinated with TPWD staff including both the State Parks Trails Coordinator and Marketing Director.

### *Texas Commission on the Arts (TCA)*

TCA's mission is to "advance Texas economically and culturally by investing in a creative Texas"<sup>4</sup>. TCA invests public funds in the form of grants to cultural, educational, artistic, and civic organizations.

TCA is a member of the TSATC and as such encourages arts and cultural tourism activities and designates Texas cultural districts. Bicycle destinations may be enhanced by the diverse and innovative arts and activities promoted by TCA; future collaboration between arts/cultural investments and bicycle tourism investments should be encouraged.

### **Regional Planning Entities**

The BTTS is an initial statewide investigation into the development of a bicycle tourism trail network in Texas. Given the preliminary nature of this study, regional stakeholders were engaged to gain a better understanding of local-level bikeway infrastructure and planning efforts at a high level. Development of the BTTS into a statewide Bicycle Tourism Trails Plan would require engagement and endorsement from local jurisdictions (cities, towns, counties, etc.) across Texas. Indeed, a more thorough analysis of local conditions and further stakeholder engagement is needed to advance any routes.

### *Metropolitan Planning Organizations*

MPOs are federally mandated and designated to carry out the transportation planning processes within their jurisdictional boundaries. As such, the federal government allocates funding to MPOs to program and plan transportation infrastructure improvements and to mitigate regional transportation concerns, such as air pollution and traffic congestion. MPOs are required to represent urban areas with a population of 50,000 or more. Decisions are governed by a policy board of the MPO. The MPO provides an ongoing, cooperative, regional transportation planning process that results in plans and programs which consider all transportation modes. Because of these responsibilities, MPO staff are generally knowledgeable about current and planned bikeways within their jurisdiction.

The Association of Texas Metropolitan Planning Organizations (TEMPO) is a membership association for the 25 Texas MPOs. To distribute information about the BTTS to MPO staff across Texas, the project team coordinated with TEMPO staff and TxDOT MPO Coordinators.

### *Regional Councils*

Regional councils or COGs are voluntary organizations of local governmental entities that coordinate programs and services to address needs across jurisdictional boundaries. Texas is divided into 24 regional councils. Unlike MPOs, regional councils are not required to have transportation planning or funding responsibilities and routinely represent rural and small population areas rather than urbanized areas. Regional council responsibilities range from emergency preparedness strategies and services for the elderly to community and economic

development. Regional councils provide planning, education, and support for areas of Texas that do not have MPO representation.

The Texas Association of Regional Councils (TARC) is a statewide association of regional councils which assists local governments across Texas by sharing best practices and education, as well as acting as a representative of regional councils to state elected officials and agencies. Project team staff coordinated with TARC staff to disseminate information about the BTTS to regional council staff across Texas. As regional councils do not necessarily have transportation planning staff, TARC assisted in identification of appropriate staff to receive BTTS solicitations for input.

### Wikimap Online Input Tool

The Wikimap Online Input Tool is a customizable, interactive, online map product used to collect geographically specific point and line comments/feedback from regional stakeholders across Texas. From September 5 to 29, 2017, TxDOT District, MPO, and regional council staff were solicited to review and provide comments on BTTS Conceptual Routes through the Wikimap tool. Specifically, regional stakeholders were asked to place comment pins or draw routes based on their knowledge of local and regional bicycle infrastructure, transportation plans, transportation needs, and economic development. The introductory screen of the Wikimap tool is shown on Figure 5.

Figure 5: Wikimap Introduction Screen and Legend



### Outreach Methods and Responses

To solicit information from regional planning entities, the project team coordinated with two membership/umbrella organizations representing regional planning entities around the state. Specifically, the project team gave presentations to MPO Executive Directors at the 2017 Summer Meeting of TEMPO in Harlingen, Texas and to TARC to introduce members to the Bicycle Tourism Trails Study and inform them of a future opportunity to provide input. In

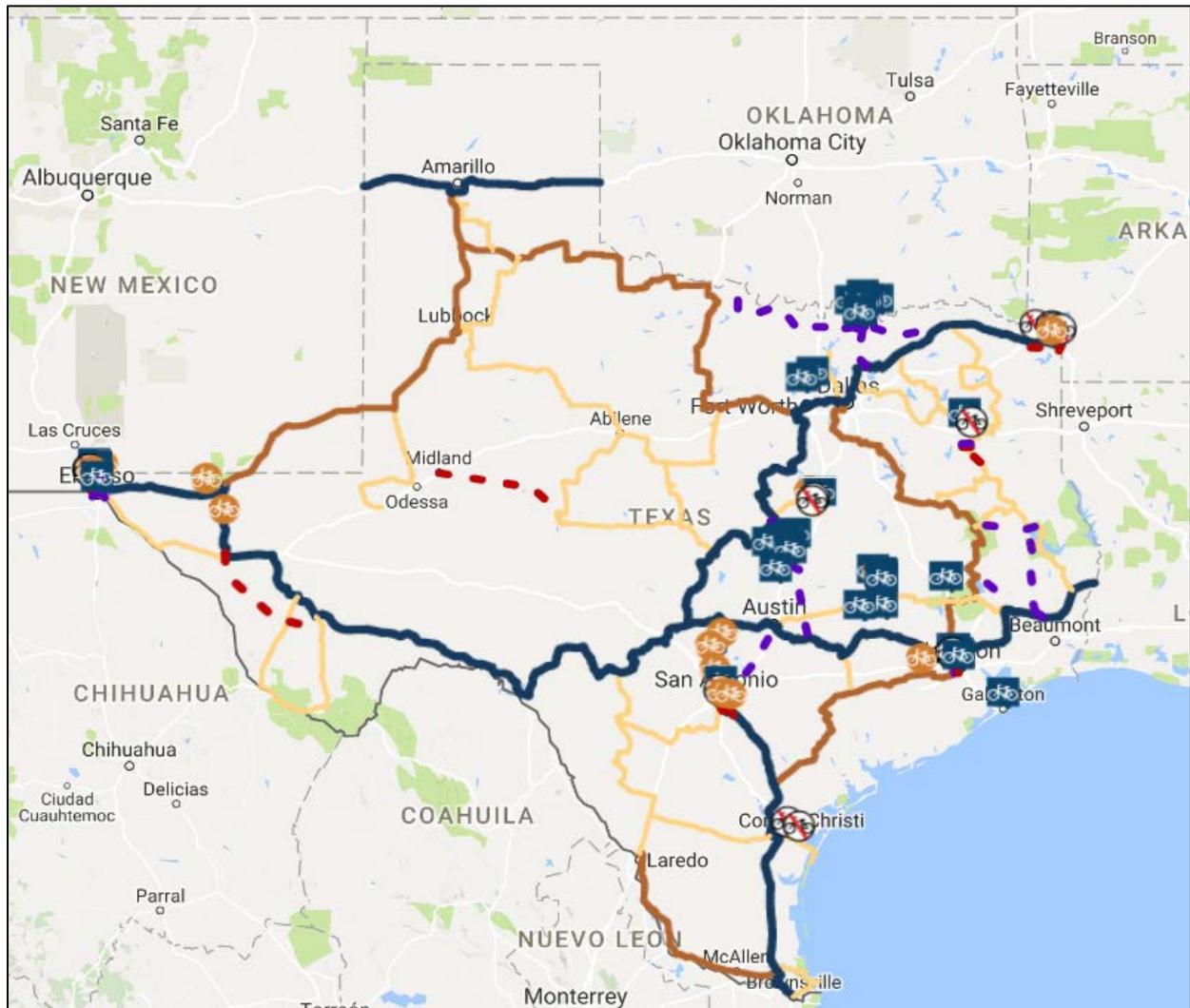
September 2017, the project team used both TxDOT MPO Coordinators and two statewide organizations (TEMPO and TARC) to distribute solicitation emails to MPOs, regional councils, and TxDOT District staff to add inputs to the Wikimap.

After a 1-month comment period, the project team received more than 200 point or line comments from 58 users in 13 regions. Additionally, the regional stakeholder outreach process initiated conversations with several MPOs in Texas, which led to MPOs sharing local bike plans and GIS bikeway data with the project team. Table 4 and Figure 6 summarize the Wikimap feedback received statewide.

*Table 4: Wikimap Online Input Tool: Written comments summary*

Comment Type	Comment Category	Number	Totals
Point	New bicycle destination	66	99
	Route not suitable for bicycle use	17	
	Route only for fearless cyclists	16	
Line	Recommended route change	27	107
	Significant route connection	80	

Figure 6: Wikimap Online Input Tool: Feedback Map



Conceptual Route Modifications in Response to Wikimap Feedback

Some point comments, such as “New bicycle destination” comments, were more informational in nature, indicating locations of local bike shops, mountain biking courses, wildflower blooming locations, etc. Other comments had no written text attached, but instead were points identifying roadways as “Only for fearless cyclists” or “Not suitable for bicycle use.” Most of the point and line comments contained valuable information on local roadway conditions, planning efforts, well-traveled bicycle routes, and local cyclist interests.

In general, the project team adopted the suggestions of regional stakeholders unless they conflicted with a higher-scoring routing option or routed away from existing/planned bicycling infrastructure. Specific responses to Wikimap feedback were categorized and documented. For more information on Wikimap feedback from TxDOT District, MPO, and COG staff, refer to *Technical Memorandum 2: Routing Criteria and Example Network*

*Development.* Documentation of all Wikimap comments and project team responses can be found in Appendices B and C of Technical Memorandum 2.

## **BikeTexas and Users**

BikeTexas, a statewide nonprofit bicycle advocacy organization, promotes and advances bicycle safety, access, and education. BikeTexas membership includes many bicycle shops, bicycle advocates, and bicycle groups around Texas. BikeTexas, which has supported bicycle tourism for many years, was among the voices advocating for the 2005 Texas Bicycle Tourism Trails legislation (Texas Transportation Code § 201.9025).

In July 2016, BikeTexas reminded the BAC of the legislation in a presentation titled, “Developing Texas Connections to the U.S. Bicycle Route System.” Furthermore, BikeTexas had previously made cross-state bicycle route recommendations. The project team used these route recommendations as one of the initial inputs in the route location development process (see Technical Memorandum 2 for additional initial inputs and a detailed process description).

BikeTexas remained active over the course of the study, attending all five BAC meetings conducted during the study period. Additionally, the project team had two meetings with BikeTexas staff to review their previous efforts and gain a thorough understanding of the behind-the-scenes, ongoing work occurring over their many years of advocacy. BikeTexas reviewed all BTTs products and fully endorses the study results.

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*BikeTexas is very pleased with the products resulting from TxDOT's Bicycle Tourism Trails Study. Future investments in bicycle infrastructure will encourage economic development in towns and cities across Texas. We look forward to partnering with state and regional partners as we all endeavor to build a future network of bicycle tourism trails across Texas.*

*- Robin Stallings, Executive Director, BikeTexas*

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BikeTexas should play a critical role in the successful promotion and marketing of a future bicycle tourism trail network. This important partnership should be leveraged in the future to communicate with bicyclists, bicycle entrepreneurs, and bicycle groups around Texas.

## Collaborative Approaches to Bicycle Tourism

An investigation of states around the country reveals differing approaches to promoting bikeways and bicycle networks. Some states have begun some level of statewide promotion/marketing of long-distance bicycle tourism.

- A first group of states have chosen to focus marketing and infrastructure investments on long-distance or touring bicyclists. These touring bicyclists are routed onto low-volume roadways with limited accommodations and signage. This approach requires little infrastructure investment but aims to attract and accommodate a narrow spectrum of bicyclists.
- Other states have focused their marketing and investments on short-distance recreational or weekend bicyclists. Many of the bikeway investments are off-road in state parks or recreational areas that attract mountain bikers, gravel riders, and/or long-distance bicyclists who don't need a paved surface.
- A final group of states are not marketing or focusing infrastructure investments on any one type of bicyclist, but instead adopt a multiple user focus. Multiple levels of government (state, regional, and local) aim to promote and invest in bicycling in general. These states offer a variety of bikeway accommodations depending on the geographic area and market their facilities based on seasonal or regionally-specific attributes.

### *Leadership*

The study provides an example vision of a statewide network of tourism bikeways and provides recommendations for various bikeway types. However, a statewide champion or leader is needed to guide interagency coordination and designation of statewide bicycle tourism trail routes. Other states have had different champions leading the bicycle tourism cause, including:

- Department of Transportation
- Tourism department
- Parks and wildlife department
- Local government/MPO
- Bicycle advocacy groups

TxDOT is poised to be a valuable collaborator in bicycle tourism route promotion and marketing. Tourism departments and statewide bicycle advocacy groups in other states perform central roles in long-distance bicycle tourism planning and promotion. In Texas, a synchronized approach by state agencies will be required to advance bicycle tourism trails. Additionally, a focused marketing effort involving a variety of digital and printed products (available from a variety of digital platforms and physical locations) is recommended to

maximize bicycle tourism route promotion. A common practice used in other states is to highlight bicycle amenities and businesses in addition to bicycle and cultural events along promoted routes to channel bicycle tourism dollars into rural and small-town economic development.

### **Conclusion and Next Steps**

This technical memorandum documents stakeholder engagement during the 15-month TxDOT Bicycle Tourism Trails Study. TxDOT's BAC and BAC Working Group provided monthly input and feedback to the project team advancing the study. Meanwhile, the project team engaged internal stakeholders at TxDOT and at other state agencies, along with regional planning agencies, and with the state's largest bicycle advocacy group. Stakeholders reviewed interim route locations and provided important regional input about existing and planned bikeway infrastructure.

Engaging state-level stakeholders during this study built trust and developed partners for future bicycle tourism trail implementation. Future development of bicycle tourism trails will require further state agency coordination and extensive local stakeholder engagement.

## References

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- <sup>1</sup> Texas Transportation Code TRANSP § 201.9025. <http://codes.findlaw.com/tx/transportation-code/transp-sect-201-9025.html>. Accessed February 1, 2018.
- <sup>2</sup> Office of the Governor, Economic Development and Tourism Division (EDT) websites: <https://gov.texas.gov/organization/ecodev>, <https://businessintexas.com/about/office-governor>, <https://travel.texas.gov/about/>. Accessed February 1, 2018.
- <sup>3</sup> Texas Parks and Wildlife website. <https://tpwd.texas.gov/about/mission-philosophy>. Accessed February 1, 2018.
- <sup>4</sup> Texas Commission on the Arts website. <http://www.arts.texas.gov/about-us/agency-overview/>. Accessed February 1, 2018.





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# Appendix A: Working Group Meeting Summaries and Presentations

Jacobs for TxDOT Public Transportation Division (PTN)

## **Acknowledgements**

Prepared for: TxDOT PTN

Prepared by: Carl Seifert

Quality Reviewers: Stephanie Lind and Nishant Kukadia

## TxDOT BAC presentations and BTTS Working Group Meeting Summaries

Group	Date	Activities
Working Group	1/12/2017	<ul style="list-style-type: none"> <li>• Introduction to Bicycle Tourism Trails Study</li> </ul>
BAC	1/20/2017	<ul style="list-style-type: none"> <li>• Introduction to Bicycle Tourism Trails Study</li> </ul>
Working Group	2/21/2017	<ul style="list-style-type: none"> <li>• Vision, goals, and objectives (Part 1)</li> </ul>
Working Group	3/20/2017	<ul style="list-style-type: none"> <li>• Vision, goals, and objectives (Part 2)</li> <li>• Define stakeholders</li> <li>• National/regional examples of tourism trails</li> <li>• Statewide approaches to bicycle tourism</li> </ul>
BAC	4/10/2017	<ul style="list-style-type: none"> <li>• Approval of vision, goals, and objectives</li> <li>• National/regional examples of tourism trails</li> <li>• Statewide approaches to bicycle tourism</li> </ul>
Working Group	4/10/2017	<ul style="list-style-type: none"> <li>• Initial routes exercise</li> <li>• Prioritizing route location criteria exercise</li> </ul>
Working Group	5/15/2017	<ul style="list-style-type: none"> <li>• Working Group drawn routes (April exercise results)</li> <li>• Route location criteria (April exercise results)</li> <li>• Preliminary Routes based on exercise results</li> </ul>
Working Group	6/20/2017	<ul style="list-style-type: none"> <li>• Preliminary Routes update</li> <li>• Discuss process for applying quantitative route location criteria metrics</li> <li>• Introduce Wikimap Online Input Tool for regional stakeholders input</li> </ul>
BAC	7/17/2017	<ul style="list-style-type: none"> <li>• Preliminary Routes update</li> <li>• Stakeholder outreach update</li> </ul>
Working Group	7/17/2017	<ul style="list-style-type: none"> <li>• Preliminary Routes update</li> <li>• Application of quantitative route location criteria</li> <li>• Benefits of bicycle tourism and bikeways research</li> </ul>
Working Group	8/22/2017	<ul style="list-style-type: none"> <li>• Present Conceptual Routes</li> <li>• Bikeway types and design criteria (Part 1)</li> <li>• Present Wikimap Online Input Tool interface for regional stakeholders input</li> </ul>
Working Group	9/29/2017	<ul style="list-style-type: none"> <li>• Review Wikimap (regional stakeholder) feedback (Part 1)</li> <li>• Bikeway types and design criteria (Part 2)</li> </ul>
BAC	10/27/2017	<ul style="list-style-type: none"> <li>• Review Wikimap (regional stakeholder) feedback (Part 2)</li> <li>• Bikeway types and design criteria</li> <li>• Stakeholder outreach update</li> </ul>
Working Group	10/27/2017	<ul style="list-style-type: none"> <li>• Review Conceptual Routes changes in response to Wikimap feedback</li> <li>• Bikeway types and design criteria (Part 3)</li> <li>• USBRS Route Designation process</li> </ul>
Working Group	12/12/2017	<ul style="list-style-type: none"> <li>• Present Example Network</li> <li>• Discuss cost estimates for BTTS bikeway types</li> </ul>
Working Group	1/19/2017	<ul style="list-style-type: none"> <li>• Review all draft final products</li> <li>• Discuss next steps</li> </ul>
BAC	1/22/2018	<ul style="list-style-type: none"> <li>• Seek BAC endorsement for all products</li> <li>• Discuss next steps</li> </ul>

NOTE: All Working Group meeting summaries and presentations are found on the following pages. All BAC presentations, agendas, and transcripts can be found on the TxDOT's Bicycle Advisory Committee website - <http://www.txdot.gov/inside-txdot/division/public-transportation/bicycle-committee.html>

## Introductory Meeting

ATTENDEES:	<u>Working Group</u> : Bobby Gonzales, Ramiro Gonzalez, Billy Hibbs, Joseph Pitchford, DawnElla Rust, and Karla Weaver; <u>TxDOT-PTN</u> : Teri Kaplan and Bonnie Sherman; <u>CH2M</u> : Carl Seifert
COPY TO:	File
PREPARED BY:	Carl Seifert, CH2M
DATE:	1/12/17
PROJECT:	Bicycle Tourism Trails Study

## Objectives

- Introduce the working group members to the project and to each other.
- Gather input and excitement on project and current direction

Prior to the meeting, a copy of the PowerPoint presentation (in pdf form) and agenda were distributed via email to the working group members. This conference call was completed via WebEx so all attendees could view the presentation and hear the audio of the group discussion.

## Summary

### Welcome and Introductions

PTN greeted attendees, welcoming them with the excited email text used by members to volunteer to be part of the working group itself. Attendees individually introduced themselves in turn and shared some of their interest in being involved with the BTTS Working Group.

### Review of presentation

CH2M and PTN presented the PowerPoint slides, highlighting places where Working Group members were encouraged to provide input, resources, and experiences.

### Discussion

- *Resources*: Joseph Pitchford, Ramiro Gonzalez, and others shared several resources with the group and agreed to email some later. See the Action Items below for details.
- *Objectives to consider*: Karla Weaver suggested that the BTTS needs to consider several items including: 1) who is our audience?; 2) will there be any minimum thresholds for bikeway designs; and 3) what sort of funding will be available for implementation of tourism trails.
- *Leadership structure*: Teri Kaplan shared with the group a collaborative vision for how the BTTS will be completed. In particular, she described a three legged stool with the BAC, TxDOT-PTN, and CH2M supporting the project equally.
- *Transparency and political matters*: Billy Hibbs asked about the particular structure of the BTTS project and the degree to which this project will engage elected officials. Teri Kaplan answered that at this point this project will be treated the same as any similar TxDOT project. Carl Seifert

added that the selection process of potential bicycle tourism trails should involve specific objective criteria based on best practices.

## Action Items

**CH2M** to send out doodle/Whenisgood poll to identify a good time each month to schedule a regular working group conference call time

**CH2M/PTN** to incorporate ideas and resources mentioned during the conference call, including:

- Karla Weaver- Suggestion - Study needs to consider:
  - Audience of study and users of facilities
  - Minimum design thresholds for bikeways considered as tourism trails
  - Funding for improvements (prioritize existing, where do funding gaps exist?)
- Joseph Pitchford- Resources provided:
  - TrailLink.com
  - PathLessPedaled.com & “How Bicycles can Save Small Town America”

**Ramiro Gonzalez** to provide:

- Economic impact study results from recently completed Active Transportation Plan investigation
- Public health-related details from Active Transportation Plan
- Public health contact information for colleague at UT- Austin.

# TxDOT Bicycle Tourism Trails Study

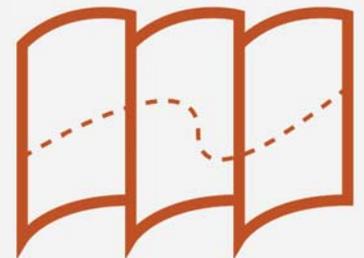
Bicycle Advisory Committee

January 20, 2017

Carl Seifert, AICP

## Overview

- What is the purpose of the Bicycle Tourism Trails Study?
- National and state context for tourism trails
- How is the TxDOT BAC involved?
  - BAC Working Group
  - Schedule
- Next steps
- Resources and Questions



## TxDOT's Bicycle Tourism Trails Study activities

### Investigate:

- long-distance bicycle tourism best-practices
- previously proposed Texas tourism routes
- existing bikeways
- economic benefits of bicycle tourism trails

### Study results:

- establish criteria for route location decisions
- establish/identify design criteria for bikeway tourism trails
- identify potential Texas Bicycle Tourism Trail routes

### Potential partners may include:

- Texas Parks & Wildlife
- Texas Economic Development and Tourism Office
- Texas Historical Commission
- Local governments
- Metropolitan Planning Organizations (MPOs)



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## Potential goals of the Bicycle Tourism Trails Study

- Respond to Bicycle Tourism Trails Act Legislation
- Promote accessible, context-sensitive bicycle accommodations
- Improve safety
- Improve public health outcomes
- Promote economic development
  - Statewide
  - Urban
  - Rural
- Provide leadership to local governments for long-distance bicycle route development



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# Bicycle Tourism Trails Act

*TX Transportation Code Section 201.9025*

(a) The Texas Department of Transportation Bicycle Advisory Committee shall advise and make recommendations to the commission on the development of bicycle tourism trails in this state.

Recommendations on bicycle tourism trails developed under this section:

- (1) shall be made in consultation with the Parks and Wildlife Commission and the Texas Economic Development and Tourism Office;
- (2) **shall reflect the geography, scenery, history, and cultural diversity of this state;**
- (3) shall maximize federal and private sources of funding for the designation, construction, improvement, maintenance, and signage of the trails and the promotion of bicycle tourism; and
- (4) may include multiuse trails to accommodate equestrians, pedestrians, and other nonmotorized trail users when practicable.

(b) The department may contract with a statewide bicycle nonprofit organization for assistance in identifying, developing, promoting, or coordinating agreements and participation among political subdivisions of this state to advance bicycle tourism trails.

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## Bikeway networks contribute to tourism

Bicyclists spend money

- Lodging, food, retail, entertainment, etc.

Bike travel is growing

- Self-guided tours
- Regional bike networks
- Single and multi-day events
- Bicycle rentals

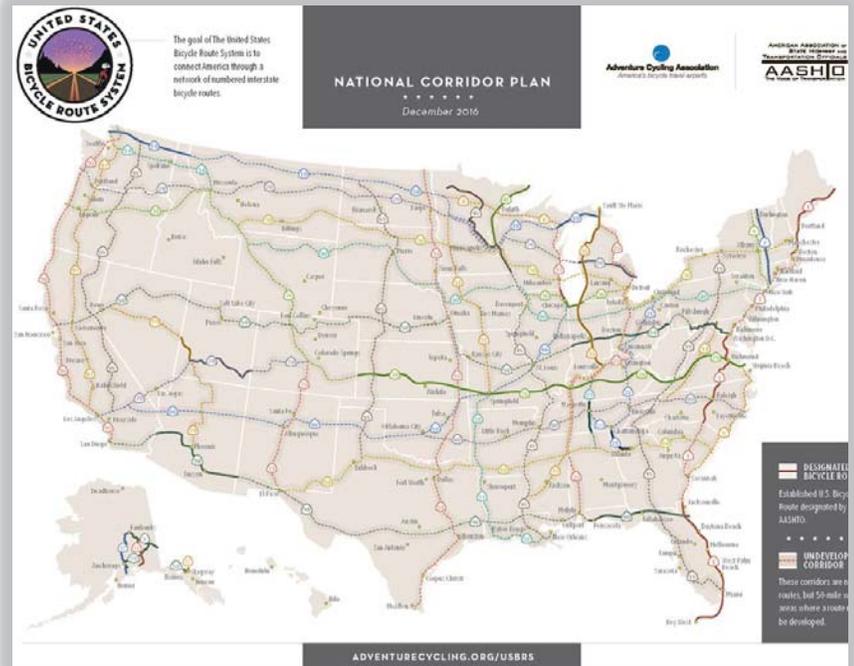
Commuter and recreational users



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# US Bicycle Route System (USBRS)

- Officially numbered and signed nation-wide bicycle route network
- 11,000+ miles in 24 states have been designated. More than 38,000 to go
- Proposed by Adventure Cycling Association in consultation with AASHTO



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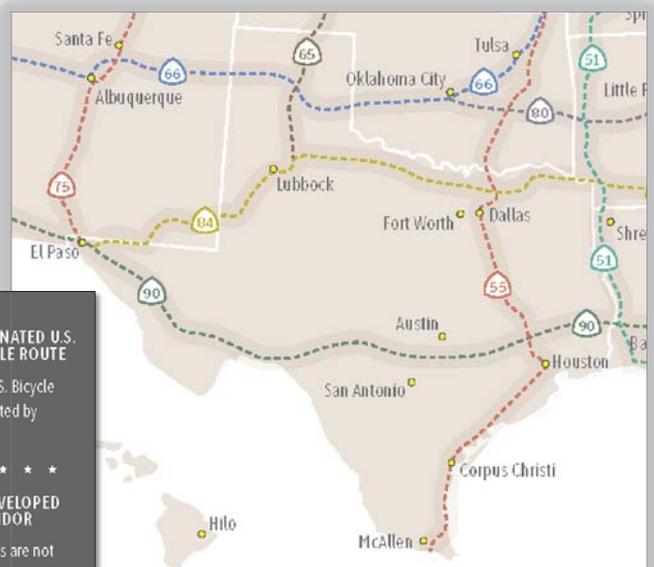
# US Bicycle Route System (USBRS)

## “Undeveloped Corridors”

- 50 mile wide corridors proposed by Adventure Cycling where a USBRS route **could be** developed

## “Designated USBRS Route”

- Local jurisdiction evaluates corridors, decides on actual route, and coordinates with local governments and owners.
- AASHTO approves local government route applications and designates a USBRS route number
- A designated USBRS route must connect:
  - Two or more states,
  - To an international border, or
  - Another USBRS route
- Approximately 20% of the initial corridors have been officially designated as USBRS routes by the local jurisdiction, including state DOTs, where appropriate.



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## State context for potential tourism trails

### Previously proposed bike trails

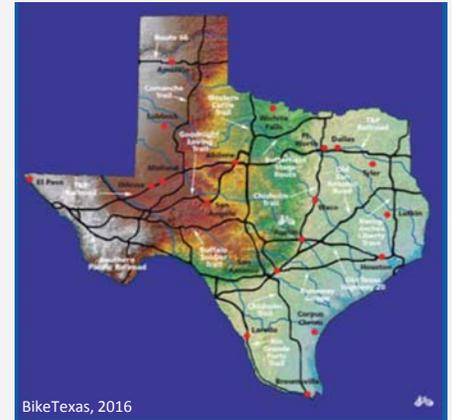
- *Northeast Texas Trail*
- *Old Texas 20*

### Historic trails:

- *Chisholm Trail*
- *Camino Real*
- *Mission Trail*
- *Texas Heritage Trails*
- Other regionally significant trails

### Questions to consider:

- Where are the gaps?
- How can existing trails be combined/completed/improved?
- Other questions the BAC members would like to consider?



## BAC Working Group

### BAC Working Group:

- Bobby Gonzales (*El Paso*)
- Ramiro Gonzalez (*Brownsville*)
- Billy Hibbs (*Tyler*)
- Joseph Pitchford (*Dallas*)
- DawnElla Rust (*Nacagdoches*)
- Shawn Twing (*Amarillo*)
- Karla Weaver (*Dallas/Fort Worth*)

### Monthly Member tasks:

- review interim products
- provide input



## Schedule

- 12 Months
- BAC Working Group
  - Monthly conference calls
  - Quarterly updates to BAC
  - In-person meetings TBD



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## Next Steps

Upcoming BAC Working Group Meeting (*not yet scheduled*)

Meeting #1: Goals and objectives identification

BAC Data Requests:

1. Descriptions of existing bikeways in your area for possible inclusion as Texas Bicycle Tourism Trails
2. Examples of tourism trails from around the US or world that should be considered during development of the study



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## Resources

- [TrailLinks.com](https://www.traillinks.com)
- [pathlesspedaled.com](https://www.pathlesspedaled.com)
  - How Bicycles can Save Small Town America
- [Adventure Cycling Association](https://www.adventurecycling.org)
- Economic impact analysis from City of Brownsville
- Others?



## Questions



Thank You!!

**Carl Seifert**

*Transportation Planner*

[carl.seifert@ch2m.com](mailto:carl.seifert@ch2m.com)

CH2M: 512-249-3351

TxDOT: 512-374-5213





## Working Group Meeting #2

**ATTENDEES:** BAC Working Group: Bobby Gonzales, Ramiro Gonzalez, Shawn Twing, Joseph Pitchford, DawnElla Rust and Karla Weaver;  
TxDOT-PTN: Teri Kaplan and Bonnie Sherman;  
CH2M: Carl Seifert and Stephanie Lind

**MEETING FORMAT:** Conference Call via WebEx (visual & audio access for all)  
Prior to the meeting, a copy of the PowerPoint presentation (in pdf form) and agenda were distributed via email to the working group members.

**COPY TO:** File

**NOTES PREPARED BY:** CH2M and TxDOT-PTN

**DATE:** 2/21/17

## Meeting Objectives

- Discuss project goals
- Discuss possible ways to measure/ meet project goals

## Summary

### Welcome and Introductions

Attendees individually introduced themselves. Carl Seifert with CH2M provided an overview of the agenda. He noted that the focus of the meeting will be on prioritizing project goals and objectives.

### Framing the Bicycle Tourism Trails Study (BTTs)

The stakeholders for the BTTs include:

- Bicyclists
- TxDOT District staff
- Local governments
- Regional planning entities

The study aims to do the following:

- Establish criteria for route location decision-making
- Establish/identify design criteria for statewide tourism routes
- Identify potential bicycle tourism routes (existing and proposed)

A copy of the Tourism Trail Act was provided to the workgroup. A diagram showing how goals and objectives are nested under a vision statement was displayed.

## BTTS Vision Statement

This vision statement was proposed to the group:

*A statewide network of bicycle tourism trail routes that is collaboratively developed to provide safer, non-motorized access to statewide/regional destinations and support economic development across Texas.*

The workgroup would like to review the vision statement outside of the workgroup meeting and will provide comments by the end of the week (2/24/2017).

## BTTS Goals

Carl presented the following draft goals for the study:

- A. Identify tourism trail network
- B. Foster development of safer accommodations for long-distance bicycling
- C. Identify economic benefits of bicycle tourism
- D. Identify public health benefits of bicycle tourism
- E. Provide guiding principles for developing small town and rural bicycle tourism
- F. Coordinate efforts to improve access/connection to Texas parks, recreation areas and cultural/historic areas
- G. Recognize and strengthen transportation connections to existing bicycle, transit, rail, vehicle and pedestrian networks
- H. Support environmentally friendly travel/tourism
- I. Encourage national bicycle route (USBRS) development
- J. Respond to the Bicycle Tourism Trails act

Discussion:

- Some goals can be grouped or are a duplication
- I and J are outcomes
- Group C and D
- Group safety with C and D
- F and G can be grouped
- G is important and should not be grouped
- Urban trails need to be part of the discussion
- Events might be part of the tourism, where people go to a city to do a riding event and that should be part of the consideration
- F is more destination coordination and should be separate from G
- Consider adding a "K" for "event based" tourism

Consensus

- Remove I and J and/or put them as an objective
- H could be under E, although not just small towns, E should be all cities
- CH2M and TxDOT will revise goals and then send it out to the group for review and comment

Carl presented some draft objectives for the group to review, the work group noted that it is difficult to discuss objectives at this time.

The work group discussed how the work group will assess the economic and health benefits of BTT. CH2M clarified that with the assistance of the workgroup, they would present research on these (and other) items to the workgroup.

Next working group meeting will include:

- Review goals and objectives
- Identify BTT stakeholders
- Share and identify regional/national/international best practices associated with bicycle tourism routes

## Action Items

**CH2M will schedule the next workgroup meeting for 3/20 over lunch.**

**CH2M/PTN** to will refine the **vision, goals and objectives** and send them out to the group for refinement.

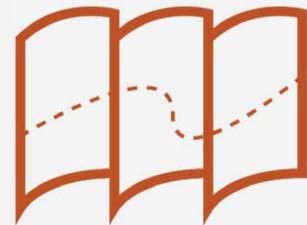
# TxDOT Bicycle Tourism Trails Study

Working Group- Meeting #2

February 21, 2017

## Agenda

- Recent activity
- Framing the Bicycle Tourism Trails Study (BTTS)
- Define vision, goals, and objectives
- Identify goals for the BTTS
  - Vision
  - Proposed goals
  - Discussion
  - Goals prioritization exercise
- Summary and next steps
  - Discuss future BTTS meeting topics and schedule
  - TxDOT, CH2M, and Working Group action items



# Framing the Bicycle Tourism Trails Study (BTTS)

- BTTS Stakeholders

- Bicyclists
- TxDOT District staff
- Local governments
- Regional planning entities



- Bicycle Tourism Trails Act Legislation

- Items we want to accomplish

- Establish criteria for route location decision-making
- Establish/ identify design criteria for statewide tourism trails
- Identify potential Bicycle Tourism Trail Routes (existing & proposed)
- Others?

3

## Bicycle Tourism Trails Act

*TX Transportation Code Section 201.9025*

(a) **The Texas Department of Transportation Bicycle Advisory Committee shall advise and make recommendations to the commission on the development of bicycle tourism trails in this state.** Recommendations on bicycle tourism trails developed under this section:

- (1) shall be made in consultation with the Parks and Wildlife Commission and the Texas Economic Development and Tourism Office;
- (2) **shall reflect the geography, scenery, history, and cultural diversity of this state;**
- (3) shall maximize federal and private sources of funding for the designation, construction, improvement, maintenance, and signage of the trails and the promotion of bicycle tourism; and
- (4) may include multiuse trails to accommodate equestrians, pedestrians, and other nonmotorized trail users when practicable.

(b) The department may contract with a statewide bicycle nonprofit organization for assistance in identifying, developing, promoting, or coordinating agreements and participation among political subdivisions of this state to advance bicycle tourism trails.

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# Defining terminology

- **Vision-**  
*A statement of the overall purpose of the effort*
- **Goals-**  
*A broad statement that describes a desired end state*
- **Objective-**  
*A specific and measurable statement that supports achievement of a goal*
- **Metric-**  
*The qualitative or quantitative measure of the progress toward meeting an objective*



**EXAMPLE**

Goals of the study	Objectives	Metrics
Identify tourism trail routes	• Establish criteria for route locations	Criteria established?
	• Identify potential Bicycle Tourism Trail routes on a map	Identified?
	• Identify typical costs associated with tourism trail facility development	Costs identified?

# Proposed vision

*A statewide network of bicycle tourism trail routes that is collaboratively developed to provide safer, non-motorized access to statewide/regional destinations and support economic development across Texas.*



## Potential Goals

A Identify tourism trail routes

B Foster development of safer accommodations for long-distance bicycling

C Identify economic benefits of bicycle tourism

D Identify public health benefits of bicycle tourism

E Provide guiding principles for developing small town & rural bicycle tourism

F Coordinate efforts to improve access/ connection to Texas parks, recreation areas, and cultural/historic areas

G Recognize and strengthen transportation connections to existing bicycle, transit, rail, vehicle, and pedestrian networks

H Support environmentally friendly travel/ tourism

I Encourage national bicycle route (USBRS) development

J Respond to the Bicycle Tourism Trails Act

K

L

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## Polling BAC Working Group to prioritize goals

Let's see what you think...

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Potential Goals		Priority
A	Identify tourism trail routes	
B	Foster development of safer accommodations for long-distance bicycling	
C	Identify economic benefits of bicycle tourism	
D	Identify public health benefits of bicycle tourism	
E	Provide guiding principles for developing small town & rural bicycle tourism	
F	Coordinate efforts to improve access/ connection to Texas parks, recreation areas, and cultural/historic areas	
G	Recognize and strengthen transportation connections to existing bicycle, transit, rail, vehicle, and pedestrian networks	
H	Support environmentally friendly travel/ tourism	
I	Encourage national bicycle route (USBRS) development	
J	Respond to the Bicycle Tourism Trails Act	
K		
L		

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## Proposed objectives (to be refined with input from TxDOT-PTN, CH2M, and Working Group members)

- Establish criteria for route locations
- Identify and map potential Bicycle Tourism Trail routes
- Identify typical costs associated with tourism trail facility development
- Establish design criteria for tourism trails bikeways
- Provide documentary evidence of economic benefits of building, maintaining, and promoting bicycle tourism trails
- Provide documentary evidence of public health benefits of building, maintaining, and promoting bicycle tourism trails
- Engage Texas Economic Development and Tourism Office
- Engage Parks and Wildlife Commission
- Others?

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## Next Working Group Meeting

### Topics

- Review goals and objectives
- Identify BTTs stakeholders
- Share and identify regional/ national/ international best practices



### Scheduling:

- Determine week and time that is best for BTTs Working Group scheduling BTTs conference calls?
  - Availability during the week of March 13 to March 17?

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## Data Request

### BAC Data Requests:

1. Descriptions of existing bikeways in your area for possible inclusion as Texas Bicycle Tourism Trails
2. Examples of tourism trails from around the US or world that should be considered during development of the study



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## Action items

### CH2M/ TxDOT-PTN:

- Further develop objectives and metrics to measure selected goals and forward to Working Group for feedback

### Working Group members:

- Send CH2M/PTN:
  - Bicycle tourism reports/ analysis associated with public health benefits
  - Information about bicycle tourism trails in your area (GIS, KMZ, websites, PDF, scans, etc.)
- Consider potential stakeholders of statewide significance that we may need to engage for input during this study



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## Questions



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Thank You!!

**Bicycle Advisory  
Committee**

**Carl Seifert**

*Transportation Planner*

[carl.seifert@ch2m.com](mailto:carl.seifert@ch2m.com)

CH2M: 512-249-3351

TxDOT: 512-374-5213



*Public Transportation (PTN)*

**Teri Kaplan**

**Bonnie Sherman**

## Working Group Meeting #3

**ATTENDEES:** BAC Working Group: Joseph Pitchford, DawnElla Rust, Billy Hibbs, and Karla Weaver;  
TxDOT-PTN: Teri Kaplan and Bonnie Sherman;  
CH2M: Carl Seifert

**MEETING FORMAT:** Conference Call via WebEx (visual & audio access for all)  
 Prior to the meeting, a copy of the PowerPoint presentation (in pdf form) and agenda were distributed via email to the working group members.

**COPY TO:** TxDOT-PTN and file

**NOTES PREPARED BY:** CH2M and TxDOT-PTN

**DATE:** 3/20/17

## Meeting Objectives

- Present study vision statement, goals, and objectives
- Identify project stakeholders of statewide significance
- Present examples of tourism trails done by other states
- Discuss statewide approaches to bicycle tourism

## Summary

### Welcome

Carl Seifert with CH2M provided an overview of the agenda. He reviewed the meeting objectives and welcomed those in attendance to interrupt openly encouraging discussion and questions.

### Vision for the Bicycle Tourism Trails Study (BTTS)

This vision statement was reviewed and it received concurrence by those in attendance:

*A network of bicycle tourism routes collaboratively developed to provide safe, non-motorized access to and connectivity between statewide/regional destinations and support economic development across Texas.*

### BTTS Goals and Objectives

Carl went through the refined goals and objectives as listed below.

Goal 1: Identify tourism trail routes

- 1.1. Establish criteria for route locations
- 1.2. Connect existing bicycle, transit, rail, vehicle, and pedestrian networks with potential tourism trails
- 1.3. Identify statewide/regional destinations and annual bicycling events
- 1.4. Identify existing and potential routes
- 1.5. Map routes

## Goal 2: Foster the development of safe bicycle tourism trails

- 2.1. Establish design criteria for various bikeway accommodations
- 2.2. Provide estimated costs associated with development of various bikeway accommodations
- 2.3. Establish procedures for considering state-maintained roadways for inclusion in USBRS
- 2.4. Provide guidance to identify/ coordinate bikeway connections statewide

## Goal 3: Identify benefits of bicycle tourism trails

- 3.1. Identify economic benefits
- 3.2. Identify health benefits
- 3.3. Identify environmental benefits

## Goal 4: Engage stakeholders

- 4.1. Consult and coordinate with state agencies (including Texas Economic Development and Tourism Office and the Texas Parks and Wildlife Department)
- 4.2. Coordinate with other government entities
- 4.3. Engage statewide bicycle interest groups

### Discussion about Goals and Objectives:

- Carl mentioned that TxDOT-PTN and CH2M will provide the PowerPoint presentation with minor revisions to the BAC as a whole for their consensus as well.
- It was recommended to add “bicycle” to the title of Goal 1 for consistency.
- Karla spoke up regarding Goal 1.3 – cyclists won’t likely ride to annual bicycling events. She questioned if this wasn’t more of a marketing aspect.
  - Carl responded that bicycling events occur on facilities that may be utilized for cycling at times other than special events. Bicycling events could help to market/promote infrastructure development, improve ride amenities, and attract future ridership.
- Billy questioned whether we would accept existing infrastructure that didn’t meet the criteria we establish for bicycle tourism routes.
  - Yes. Setting criteria helps to set a safety standard for future accommodations to attain. Existing accommodations can be accepted with the anticipation that accommodations not up to standard can be improved over time.

### Stakeholders:

Carl began by describing how this study would involve additional stakeholders and the qualities that these stakeholders may have.

### Stakeholder involvement to:

- Identify potential routes
- Review route selection criteria
- Review design criteria
- Identify issues or concerns
- Provide comments on TxDOT’s draft Texas bicycle tourism trail map

Stakeholder qualities may include:

- Knowledge of regional bikeways in Texas
- Expertise in bicycle tourism
- Responsibilities related to development, promotion and implementation of Texas bicycle tourism trails
- Potential to be affected by bicycle tourism routing

Potential project stakeholders:

*Texas Parks & Wildlife*

- Knowledge of recreational trails and other long-distance cyclist destinations throughout Texas

*Texas Historical Commission- Community Heritage Development Division*

- Knowledge of long-distance cyclist destinations: Texas Main Street program and the Texas Heritage Trails program

*Texas Economic Development and Tourism Office*

- Knowledge of previous and current tourism efforts or economic development incentives

*BikeTexas*

- Knowledge of previously considered bicycle tourism trail routes
- Valuable partner for future support and promotion of BTTS Routes

*Regional Planning Organizations- Metropolitan Planning Organizations (MPOs)*

- Knowledge of local planning efforts, bicycle project development, and valuable local GIS data

Discussion about stakeholders:

- We may want to include State Public Health organizations as a stakeholder.
  - DawnElla mentioned two associations: 1) Texas Society of Public Health Educators (TSPHE) and 2) Texas Association of Health, Physical Education, Recreation, and Dance (TAHPERD)
  - She also mentioned the state public health agency equivalent to TxDOT- Texas Department of State Health Services (TDSHS)
- Bonnie mentioned that the Councils of Governments may be a conduit for communication to the more rural counties of Texas.

**Examples of bicycle tourism routes done by others:**

National/ regional routes

- East Coast Greenway
- Mississippi River Trail
- Great Allegheny Passage (Pennsylvania and Maryland)
- Katy Trail (Missouri)

Discussion about bicycle tourism route examples:

- Billy requested that we provide or be ready to share statistics on the benefits/impacts of some of these examples. We want to persuasively describe the success stories observed on these trails.
- Joseph later asked for a definition of “recreational and adventurous cyclists” as used on slide 14.

- The text will be changed to reflect that “recreational cyclists” are average cyclists interested in safer accommodations, while “adventurous cyclists” are those comfortable with limited accommodations. These terms don’t reflect off-road or mountain biking conditions of a trail.

### **State approaches to bicycle tourism:**

Carl discussed his findings from a review of various states bicycle tourism programs, including general findings related to construction of bikeways, state DOT involvement, and statewide advocacy groups participation. Then he described how state approaches to bicycle tourism can be broadly placed into three categories:

- Long-distance bicycle tourist approach
  - Focus on long distance bicycle travelers with minimal accommodations
- Short distance bicycle tourist approach
  - Focus on weekend and short-distance travelers
- General approach
  - No specific focus, but generally led by tourism department. Different agencies providing various levels of leadership/resources/accommodations/etc.

He then expanded upon these categories by providing examples of each:

- North Carolina
- Oregon
- Minnesota

A comparison chart (slide 22) for the example state approaches was presented and was followed by a group discussion on the subject.

### Discussion about state approaches to bicycle tourism:

- Billy appreciated that we were already thinking about which state agency will take the lead on maintenance of a bicycle tourism trail map and information dissemination regarding a future bicycle tourism map. He suggested that TxDOT has the data and resources available to provide the leadership to establish the initial statewide bicycle tourism map.
  - Teri stated that while TxDOT does have data regarding the state-maintained network of roads, it does not have bikeway data for locally maintained roads or off-road accommodations.
  - In other states, the tourism department generally plays a large role in promotion and information dissemination. If another agency were to take the lead on the bicycle tourism effort, then TxDOT could annually share bicycle accommodation and road improvement data with the lead agency.
- Karla mentioned how impressed she was with the Texas Parks and Wildlife Department’s website. She shared several examples of their public-facing promotional materials for state parks and various related amenities. They have smart phone applications, interactive maps, and other tools.

- Bonnie pointed out that TxDOT must consider the entire state so the scale of the study needs to be at the statewide and/or regional level, considering cross-state routes or regional loops. She also noted that Texas Historical Commission's Heritage Trails program is an existing statewide auto-tourism program focused on regional loops showcasing cultural/historical features in Texas. It was originally established by TxDOT and is oriented for vehicular touring.

#### **General discussion:**

- Billy suggested that for the BAC presentation we should be prepared to suggest a specific Texas approach to bicycle tourism leadership. We need to be able to answer –“which state agency should lead?” and guide the BAC through this presentation.
- For the working group meeting on 4/10, we plan to meet after the BAC meeting (10am-12pm). It was discussed that the best time to start the Working Group meeting would be 1:00 pm. The meeting invitation should include an invitation to go to the cafeteria inside 200 E Riverside for a lunch break.

## Action Items

#### **CH2M/PTN:**

- Continue outreach and data collection process with identified stakeholders
- Prepare maps for April 10th exercise
- Begin draft on criteria for routes and specific accommodation types

#### **Working Group:**

- Email information/ data related to previously proposed or suggested bicycle tourism trails known to them

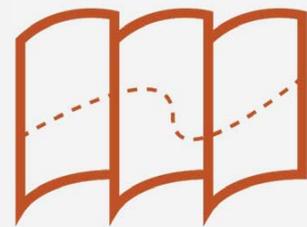
# TxDOT Bicycle Tourism Trails Study

Working Group- Meeting #3

March 20, 2017

## Agenda

- Present study vision statement, goals, and study objectives for working group concurrence
- Identify project stakeholders of statewide significance
- Example tourism trails by other states and statewide approaches for Texas
- Summary and next steps
  - Next meeting topic and scheduling
  - Action items



## Vision

*A network of bicycle tourism routes collaboratively developed to provide safe, non-motorized access to and connectivity between statewide/regional destinations and support economic development across Texas.*



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## Goals



Identify tourism trail routes



Foster the development of safe bicycle tourism trails



Identify benefits of bicycle tourism trails



Engage stakeholders

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## Goal 1: Identify tourism trail routes

### Objectives:

- 1.1 Establish criteria for route locations
- 1.2 Connect existing bicycle, transit, rail, vehicle, and pedestrian networks with potential tourism trails
- 1.3 Identify statewide/regional destinations and annual bicycling events
- 1.4 Identify existing and potential routes
- 1.5 Map routes



## Goal 2: Foster the development of safe bicycle tourism trails

### Objectives:

- 2.1 Establish design criteria for various bikeway accommodations
- 2.2 Provide estimated costs associated with development of various bikeway accommodations
- 2.3 Establish procedures for considering state-maintained roadways for inclusion in USBRS
- 2.4 Provide guidance to identify/ coordinate bikeway connections statewide



## Goal 3: Identify benefits of bicycle tourism trails

### Objectives:

- 3.1 Identify economic benefits
- 3.2 Identify health benefits
- 3.3 Identify environmental benefits



## Goal 4: Engage stakeholders

### Objectives:

- 4.1 Consult and coordinate with state agencies (including Texas Economic Development and Tourism Office and the Texas Parks and Wildlife Department)
- 4.2 Coordinate with other government entities
- 4.3 Engage statewide bicycle interest groups



# Who are project stakeholders?

## Stakeholder involvement:

- Identify potential routes
- Review route selection criteria
- Review design criteria
- Identify issues or concerns
- Comment on TxDOT's draft Texas bicycle tourism trail map

## Stakeholder qualities:

- Has knowledge of regional bikeways in Texas
- Has expertise in bicycle tourism
- Has responsibilities related to development, promotion and implementation of Texas bicycle tourism trails
- Has potential to be affected by bicycle tourism routing

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# Potential project stakeholders

## Texas Parks & Wildlife

- Knowledge of recreational trails and other long-distance cyclist destinations throughout Texas

## Texas Historical Commission- *Community Heritage Development Division*

- Knowledge of long-distance cyclist destinations: Texas Main Street program and the Texas Heritage Trails program

## Texas Economic Development and Tourism Office

- Knowledge of previous and current tourism efforts or economic development incentives

## BikeTexas

- Knowledge of previously considered bicycle tourism trail routes
- Valuable partner for future support and promotion of BTTS Routes

## Regional Planning Organizations- *Metropolitan Planning Organizations (MPOs)*

- Knowledge of local planning efforts, bicycle project development, and valuable local GIS data

## Others to consider

- **Texas Recreation and Park Society (TRAPS):** The Texas Recreation and Park Society (TRAPS) is a nonprofit educational and professional organization founded 77 years ago to advance the profession of parks, recreation, and leisure services in Texas. <http://traps.org/>

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# Example Bicycle Tourism routes done by others

## National/ Regional Routes

- East Coast Greenway
- Mississippi River Trail
- Great Allegheny Passage (Pennsylvania and Maryland)
- Katy Trail (Missouri)

## State Networks

- North Carolina
- Oregon
- Minnesota

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## East Coast Greenway

### Overview:

- 3,000 mile long spine that links urban areas together from Maine to Key West, FL
- Accompanied by 2,000 miles of *complementary* routes
- Currently, 30% of entire length is shared use path (“on trail”), while remaining portions use low-volume roadways (“interim routing”)

### Ultimate design accommodation:

- Build bicycle/pedestrian accommodations for all ages and abilities
- Off-road shared use paths
  - Where shared use paths are not feasible, shared roadways, bike lanes, and sidewalks will be used



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For more info: <http://www.greenway.org/>

# Mississippi River Trail / USBR 45

## Overview:

- Generally parallels the Mississippi River, from the river's headwaters in Minnesota to the it's mouth at the Gulf of Mexico, through MN, WI, IA, IL, MO, KY, TN, AR, MS, and LA.
- No current leadership, multi-state coalition fell apart

## Accommodation description:

- Minnesota portion is designated as USBR 45
- For adventure touring cyclists (advanced users)
- Bikeways include low-volume roadways with shared lanes, shoulders, and off-road shared use paths



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# Great Allegheny Passage (Pittsburgh to DC)

Two trails with historic/regional significance for recreational and adventurous cyclists

## Great Allegheny Passage

150 miles- between Pittsburgh, PA and Cumberland, MD

- Abandoned railroad conversion
- Flat terrain, scenic, off-road shared use path with a crushed limestone surface

## C&O Canal Towpath

185 miles- between Cumberland and Washington DC

- Parallels historic C&O canal tow path
- Hilly terrain, off-road shared use path with crushed limestone or natural surface
- Designated as USBR 50



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For more info: <https://gaptrail.org/>

## Katy Trail - Missouri

### Overview:

- 237 mile route across Missouri generally paralleling the Missouri River on an abandoned railroad corridor
- Included in two of Adventure Cycling's cross-country routes: *Lewis & Clark* and the *American Discovery Trail*



### Accommodation description:

- Flat terrain, scenic, off-road shared use path with a crushed limestone surface
- For recreational and adventurous cyclists alike

## State approaches to bicycle tourism

Three bicycle tourism approaches were identified in reviewing efforts in other states

- Long-distance bicycle tourist approach
  - Focus on long distance bicycle travelers with minimal accommodations
- Short distance bicycle tourist approach
  - Focus on weekend and short-distance travelers
- General approach
  - No specific focus, but generally led by tourism department. Different agencies providing different levels of leadership/resources/accommodations/etc.

# North Carolina - DOT

Long-distance bicycle tourist approach

## State approach:

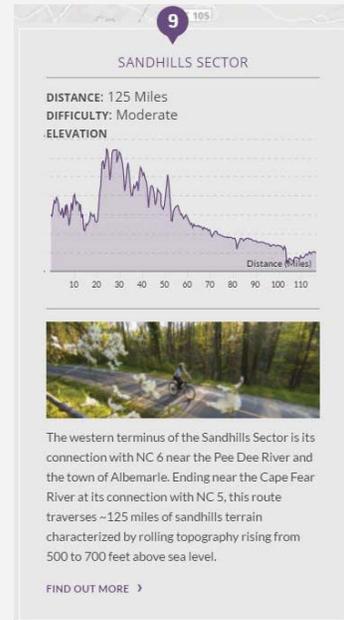
- Cross-state system of recommended bike routes covering 3,000 miles (nine identified routes)
- Routes cyclists on lower-volume roads, generally parallels highways.
- Limited bikeway accommodations (shared lanes and wide shoulders) with limited signage

## Promotion:

- DOT interactive online trip planner map with elevation, turn-by-turn instructions, difficulty, roadside bike amenities, etc.



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For more info: <https://www.ncdot.gov/bikeped/ncbikeways/>

# Oregon – Tourism Department

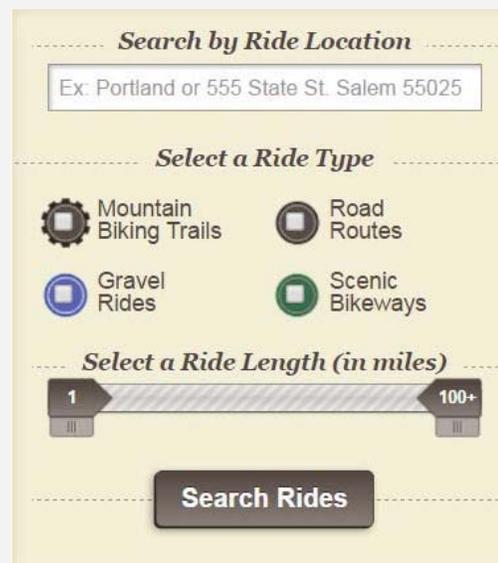
Short distance bicycle tourist approach

## State approach:

- Focus on short, weekend, or daily rides
- Inclusive of different types of bicycle trails:
  - Mountain biking, gravel rides, paved roads, and scenic bikeways

## Promotion:

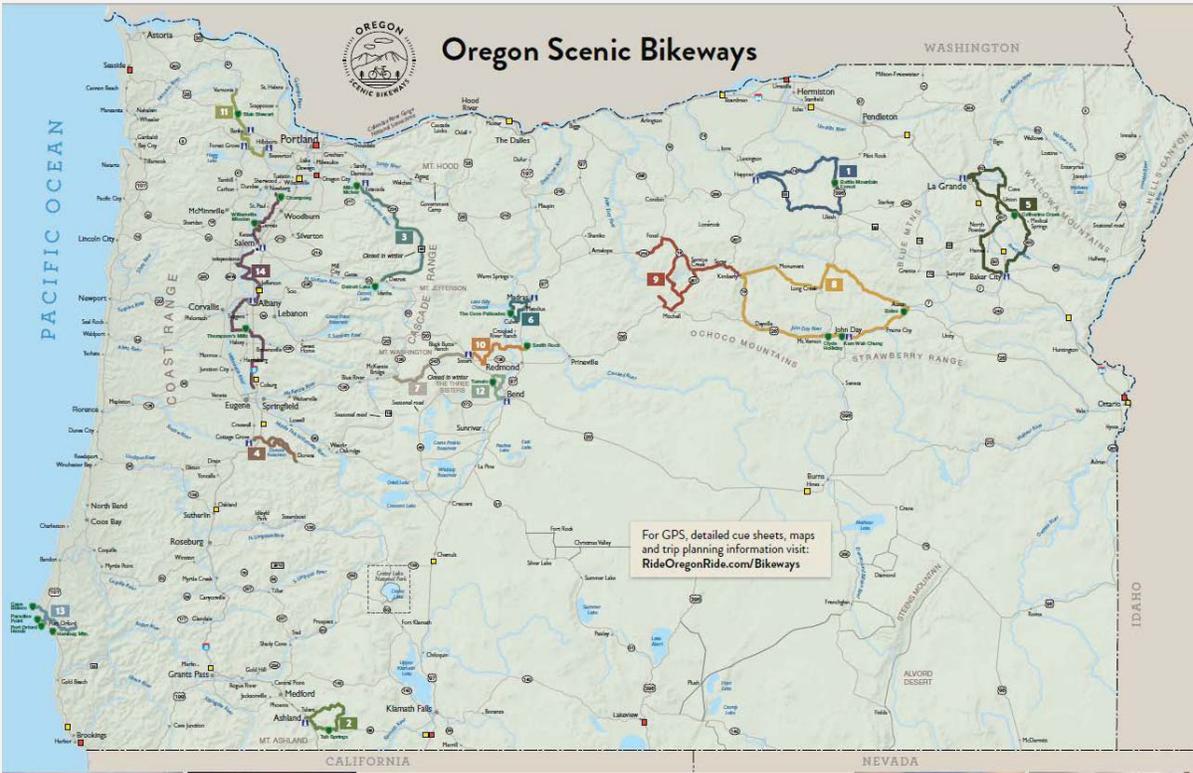
- Printed and interactive online maps with photos, text descriptions, turn-by-turn instructions, ride difficulty, planned bicycle events, etc.
- Highlights businesses along routes (economic development focus)
  - Roadside attractions
  - Food, bicycle retail & repair, and lodging



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For more info: <http://rideoregonride.com>

# Oregon



19 Slides intended for discussion purposes only

For more info: <http://rideoregonride.com>

## Minnesota – Multiple agencies

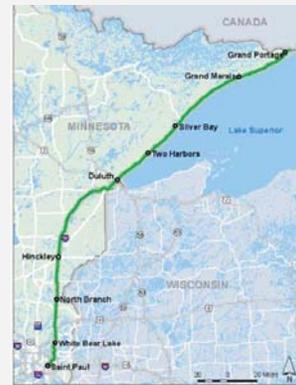
General approach

### State approach:

- Focused on creating a few key routes with minimal accommodations on low-volume roads (USBR 41 and 45)
- Trails/ Off-road shared use path tourism in state parks

### Promotion:

- *Tourism department*: provides interactive maps with amenity information and ride-finding tools
- *MNDOT and each county*: provides static (pdf) bicycle map with roadway ADT and shoulders
- *Dept. of Natural Resources*: provides static maps of off-road trails and shared use paths within state and national parks
- *Non-profit partners*: provides interactive and printed ride maps



For more info:

20 <http://www.dot.state.mn.us/bike/maps.html>

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# What is missing from the current Texas bicycle tourism approach?



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## State approaches to bicycle tourism summary

	North Carolina	Oregon	Minnesota	Texas
<b>Bicycle user focus</b> <i>(advanced cyclists vs 8-80)</i>	Long-distance (advanced cyclists)	Short-distance/ recreational (varies)	Multiple user focus	?
<b>Lead agency</b>	DOT	Tourism	No lead. Shared between DOT, Tourism, Parks, Counties	?
<b>Promotion</b>	<ul style="list-style-type: none"> <li>Dedicated website (single location)</li> <li>Interactive online trip planner map with extensive cyclists info</li> </ul>	<ul style="list-style-type: none"> <li>Dedicated website (single location)</li> <li>Printed and interactive online maps with extensive cyclists info</li> <li>Highlights businesses along routes and planned bicycle events.</li> </ul>	<ul style="list-style-type: none"> <li>Maps/ resources in various locations</li> <li>Printed and interactive resources with extensive cyclists info (not a one-stop shop for information)</li> </ul>	?
<b>Inter-agency coordination*</b> <i>DOT • Parks and Wildlife • Tourism • Local Gov't • Bike advocacy group(s)</i>				?

22 \*Information based on introductory research

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# April Working Group Meeting

## Topics

- Routes identified by the working group
- Previously proposed Texas tourism trails/routes
- Discussion on criteria for routes and specific accommodation types
- Fill-in the chart



## Scheduling:

- Working group meeting in-person on April 10<sup>th</sup> after BAC Meeting
  - Set meeting time at 12:30 or 1:00?

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# Action Items

## TxDOT-PTN & CH2M:

- Continue outreach and data collection process with identified stakeholders
- Prepare maps for April 10<sup>th</sup> exercise



## Working Group:

- Email information/ data related to previously proposed bicycle tourism trails in your area

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# Questions



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## Thank You!!

**Bicycle Advisory  
Committee**

**Carl Seifert**  
*Transportation Planner*  
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**ch2m.**



*Public Transportation (PTN)*

**Teri Kaplan**

**Bonnie Sherman**

## Working Group Meeting #4

**ATTENDEES:** BAC Working Group: Joseph Pitchford, Bobby Gonzalez, DawnElla Rust, Billy Hibbs, and Karla Weaver;  
TxDOT-PTN: Teri Kaplan and Bonnie Sherman;  
CH2M: Carl Seifert and Nishant Kukadia

**MEETING FORMAT:** In-person Meeting  
 Prior to the meeting, a copy of the PowerPoint presentation and criteria exercise (in pdf form) was distributed via email to the working group members.

**COPY TO:** File

**NOTES PREPARED BY:** CH2M and TxDOT-PTN

**DATE:** 4/10/17

## Meeting Objectives

- Understand working group opinions on potential bicycle tourism routes
- Receive feedback regarding routing criteria to consider during prioritization

## Summary

### Background Slides

Carl Seifert with CH2M provided an overview of the agenda. He noted the meeting objectives and encouraged active participation in both exercises. To set the stage for the exercises, he reviewed two slides.

Types of bicycle tourists – The following typology was provided to help the working group members remember that not all bicycle tourists are road-warriors. There are cyclists that seek out tourism for linear routes and loops, and others who look for urban amenities and sight-seeing.

1. Self-contained travelers
  - Travel by bike to destinations and take gear with them.
  - May camp, hotel, or Bed & Breakfast along the way
  - Direct spending: camping, grocery, and internet access
  - Travel pattern: linear routes
2. Ride-centered travelers
  - Seeking cultural, historic, or memorable rides. Fly or drive to destination.
  - Tend to stay overnight in one location and go riding during the day.
  - Direct spending: retail, restaurant, hotel.
  - Travel pattern: linear routes; return to base camp (hotel)
3. Event-centered travelers
  - Participants and spectators who fly or drive to organized rides or racing events.
  - Tend to stay overnight in one location and go riding during the day.
  - Direct spending: retail, restaurant, hotel.
  - Travel pattern: linear routes; return to base camp (hotel)
4. Urban-cycling travelers

- Travel around a community by bicycle, including sight-seeing activities
- Includes local, regional, national, and international visitors
- Direct spending: restaurant, retail, hotel, sight-seeing.
- Travel pattern: within communities, variety of accommodations

Vision Statement – Carl reminded that the BTTS vision statement has language that can guide the working group during these exercises. The vision statement was presented and certain words and phrases were emphasized.

*A **network** of bicycle tourism routes collaboratively developed to provide **safe**, non-motorized **access** to and **connectivity** between statewide/regional destinations and support **economic development across Texas**.*

Discussion during background slides:

- Billy for a description of typical adventure cycle route accommodations. Carl responded that these were typically low-volume roads with and without shoulders.

### **Mapping Exercise**

Poster-sized maps were prepared and placed on five tables around the room along with various pens, markers, and post-it notes. One map displayed the entire state of Texas, while seven other more detailed maps displayed various regions of the state generally corresponding to the working group member's regions. Working group members were requested to use the materials to answer the following questions:

1. Where are existing regionally important bicycle facilities/ routes?
2. Where are bicycle tourism destinations?
3. Where should bicycle tourism trails go?

### **Routing Criteria Prioritization Exercise**

Two posters displaying a list of various bicycle routing criteria were prepared and placed on easels. One poster was labeled Permanent Routing Criteria and the other Interim Routing Criteria. The working group members were given 10 circular stickers ("dots") for each poster and requested to place their 10 dots next to those criteria they considered more important. Those criteria with more dots would be considered a higher priority to the working group.

Results of this exercise will be reported to the working group during the May working group conference call.

Routing Criteria Discussion:

- Billy recommended we add a criterion regarding the availability of cell phone reception along a bicycle tourism trail.

General Discussion:

- Regarding state interagency coordination, Karla wanted to see a matrix with the pros and cons regarding the benefit each agency would bring to the table. She recommended a network that covered the Texas Triangle (Houston to San Antonio to Dallas).
- On El Paso map, Bobby suggested using an old roadbed along US 62 and connecting to SH 54 from El Paso to US 90 as an alternative to IH 10/SH 20 for the far west Texas leg of a possible east-west cross-state route. US 62 has a lot of destinations along it. He said that SH 20 (the Old Mission Trail) was a good bike accommodation but would be better as a spur. He also recommended a loop around Big Bend Ranch State Park.
- Karla mentioned that if you provide interim options that funding will be applied elsewhere because you already have something there that is “good enough”. She also recommended getting routes from H-GAC for all their counties.
- Billy suggested a route through the Hill Country. He recommended routes that highlighted the unique natural terrain of Texas, particularly East Texas, the Hill Country, and far west Texas.
- Karla, DawnElla, and Billy added a variety of important desirable existing and future proposed bicycle routes throughout the East Texas area, developing a network.
- Karla helped connect DFW bicycle planning activities to the NETT and those proposed and existing bicycle routes in East Texas.
- Those working group members present highlighted the need for a singular east-west cross-state spine route with spurs connecting to urban areas not directly linked. Upon suggestion of a north-south route, members recommended asking Ramiro Gonzalez, a Brownsville representative, about areas in the south. Also, Billy suggested that someone interested in touring Texas on bike would have the advantage of seeing the diverse geography of Texas if he/she chose an east-west route as compared to a relatively homogenous geography along a north-south route.
- Some discussion occurred regarding access to cities. Specifically, spurs may present a good way for bicycle tourism trails to provide access to large urban areas not adjacent to a spine route.
- Members also discussed whether an east-west or north-south route should go through the panhandle. A parallel route further south of I-40/Route 66 could be more attractive to bicycle tourists.
- One working group member suggested that bicycle tourism connections with neighboring states should be considered with the possibility that our routes might serve interstate travel better.
- Many working group members wanted to link bicycle tourism trails to state parks and areas of desirable natural scenery.

## Action Items

### CH2M/PTN:

- Continue outreach and data collection process with identified stakeholders
- Refine map contents based upon map exercise
- Include additional bicycle destinations and existing/planned local bikeway data to the maps

### Working Group:

- Get more geographic data on bicycle route and/or bikeway accommodation information from local bike clubs, local government contacts, etc. in your local areas.

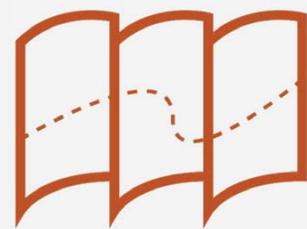
# TxDOT Bicycle Tourism Trails Study

Working Group- Meeting #4

April 10, 2017

## Agenda

- Types of bicycle tourists
- Mapping Exercise
- Criteria prioritization
- Next steps
  - Next meeting topic(s) and scheduling
  - Action items



# Types of bicycle tourists - Descriptions



## 1. Self-contained travelers

- Travel by bike to destinations and take gear with them.
- May camp, hotel, or Bed & Breakfast along the way
- Direct spending: camping, grocery, and internet access
- Travel pattern: linear routes

## 2. Ride-centered travelers

- Seeking cultural, historic, or memorable rides. Fly or drive to destination.
- Tend to stay overnight in one location and go riding during the day.
- Direct spending: retail, restaurant, hotel.
- Travel pattern: linear routes; return to base camp (hotel)

## 3. Event-centered travelers

- Participants and spectators who fly or drive to organized rides or racing events.
- Tend to stay overnight in one location and go riding during the day.
- Direct spending: retail, restaurant, hotel.
- Travel pattern: linear routes; return to base camp (hotel)

## 4. Urban-cycling travelers

- Travel around a community by bicycle, including sight-seeing activities
- Includes local, regional, national, and international visitors
- Direct spending: restaurant, retail, hotel, sight-seeing.
- Travel pattern: within communities, variety of accommodations

3 \*Substance and David Lowe-Rogstad, 2011.

Slides intended for discussion purposes only

# Vision Statement

A network of bicycle tourism routes collaboratively developed to provide safe, non-motorized access to and connectivity between statewide/regional destinations and support economic development across Texas.



## Mapping Exercise

Maps already have:

- Previously conceived bicycle tourism routes
- Some identified bicycle tourism destinations

We want you to draw on the map:

1. Where are existing regionally important bicycle facilities/ routes?
2. Where are bicycle tourism destinations?
3. Where should bicycle tourism trails go?

Use your knowledge of your local area and the state as a whole.

Use colored markers to identify bikeway types:

**OFF-ROAD SHARED  
USE PATH**

**WIDE SHOULDER**

**SHARED LANES ON  
LOW-VOLUME  
ROAD**

**ALL OTHER NOTES  
AND LABELS**

**PROPOSED BICYCLE  
TOURISM TRAIL  
ROUTES**

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## Routing Criteria Prioritization

*Establish a safe, traffic-free network of pathways for muscle-powered users of all abilities connecting bicycle destinations in Texas.*

### Criteria Routing:

1. Permanent Routing Criteria  
*Long-term, ideal, or ultimate build-out routing criteria*
2. Interim Routing Criteria  
*Short to medium-term routing criteria*

### Instructions:

- Place dots next to criteria indicating higher importance.
- Each person gets 10 dots for Permanent Routing Criteria and 10 dots for Interim Routing Criteria
- There is no limit to the number of dots one person can place next to a criterion.



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# Questions



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## May Working Group Meeting

### Topics

- Discuss facility types and design accommodations
- Discuss bicycle research

### Scheduling:

- May 22<sup>nd</sup>, 12:00 - 1:15 pm?



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# Action Items

## TxDOT-PTN & CH2M:

- Continue outreach and data collection process with identified stakeholders
- Refine map contents and add additional data inputs
- Report back on results of today's exercises



## Working Group:

- Contact local bike clubs in your areas to get bicycle route map information – preferably in geographic format (Google maps, printed maps, digital files [eg. kmz, kml, gpx, shp, etc])

# Thank You!!

**Bicycle Advisory  
Committee**

**Carl Seifert**

*Transportation Planner*

[carl.seifert@ch2m.com](mailto:carl.seifert@ch2m.com)

CH2M: 512-249-3351

TxDOT: 512-374-5213

**ch2m.**



*Public Transportation (PTN)*

**Teri Kaplan**

**Bonnie Sherman**

## Working Group Meeting #5

**ATTENDEES:** BAC Working Group: Bobby Gonzalez, DawnElla Rust, Shawn Twing, and Karla Weaver;  
TxDOT-PTN: Teri Kaplan and Bonnie Sherman;  
CH2M: Carl Seifert

**MEETING FORMAT:** Conference Call via WebEx (visual & audio access for all)  
Prior to the meeting, a copy of the PowerPoint presentation (in pdf form) and agenda were distributed via email to the working group members.

**COPY TO:** TxDOT-PTN and file

**NOTES PREPARED BY:** CH2M and TxDOT-PTN

**DATE:** 5/15/17

## Meeting Objectives

- Review and discuss results of the routing criteria prioritization exercise during the 4/10 Working Group meeting
- Review results of the initial route identification mapping exercise during the 4/10 Working Group meeting
- Discuss recent stakeholder outreach activities

## Summary

### **Introductions and overview**

The meeting began with attendance check to identify all those in attendance. Carl Seifert with CH2M provided an overview of the agenda and noted the meeting objectives.

### **April Working Group routing criteria prioritization**

Following the April 10<sup>th</sup> Working Group meeting, the project team had a follow-up with Shawn Twing and Ramiro Gonzalez to receive their inputs to the prioritization exercise and the routing exercise as they did not attend April's BAC meeting. With his input, the project team was able to analyze the results of the routing criteria prioritization exercise. Carl walked the Working Group members through the results of the criteria prioritization.

### Routing Criteria Results

Each of the criteria were placed into three groups according to the Working Group priorities:

- Strong support (7 or more dots)
- Moderate support (4 to 6 dots)
- Weak support (3 or fewer dots)

The project team chose to simplify and combine several criteria to create separation between some criteria and efficiencies between other criteria. After reviewing the criteria wording modifications, Carl

visualized the Working Group’s routing criteria priorities (those criteria with strong and moderate support) into a single table.

Criteria Category	Criteria
Safe network considerations	1 Use existing and proposed off-road shared use paths
	2 Use rural area roads with minimum 8’ wide shoulders
	3 Use low volume rural roads
	4 Avoid truck routes
	5 Use available right-of-way within rail corridors, where possible
	6 Use available right-of-way within transmission line corridors, where possible
	7 Consider low volume rural roads with minimum 6’ wide shoulders
	8 Avoid roads with steep or sustained sloping grades on hills
	9 Use TxDOT’s road network (US and state highways, FM roads, etc.)
Route selection considerations	1 Connect to national and state parks
	2 “Spine and spur” network
	3 Have bicycle services (food, water, shelter, cell phone reception, etc.) every 40 to 60 miles
	4 Use corridors that highlight natural geography, unique scenery, and/or distinctive terrain
	5 Establish regional loops of interest
	6 Be rural/scenic in nature.
	7 Use corridors that highlight cultural or historic paths and points of interest

**April Working Group routing progress**

Following the April Working Group meeting, the project team:

- Followed the recommendations of the Working Group members to have a system of cross-state routes and regional routes of interest, which reflect a spine and spoke system of routes;
- Expanded routes drawn by Working Group members to fill-network gaps;
- Removed routes hyper-local routes; and
- Introduced a categorization of the routes: Spine, Spur, and Regional routes.

Carl highlighted these expansions and categorizations on a series of maps.

**Stakeholder outreach update**

Carl discussed recent stakeholder outreach meetings and up-coming anticipated outreach activities including:

- May 2, 2018- The BTTS project team was invited to present to the Texas State Agency Tourism Council.
  - This council, comprised of the Governor’s Office of Economic Development and Tourism (EDT), Texas Historical Commission (THC), Texas Parks and Wildlife Department (TPWD), and the Texas Commission on the Arts (TCA), regularly meets to discuss Texas tourism concerns.

- Presentation included an overview of TxDOT's BTTS and a discussion of bicycle tourism approaches in other states. The presentation highlighted that in other states the Tourism Department, Parks and Wildlife Department, or even non-profits are responsible for bicycle tourism leadership and promotion.
- The project team emphasized opportunities for partnership as the study progressed.
- The project team anticipates outreach to TxDOT Division and District leadership through email communications and potentially an online route map.
- The project team has identified points of contact at the state umbrella organizations for Metropolitan Planning Organizations and regional councils: Association of Texas Metropolitan Planning Organizations (TEMPO) and the Texas Association of Regional Councils (TARC)

### **Next steps**

#### Routing Criteria Discussion:

- Billy recommended we add a criterion regarding the availability of cell phone reception along a bicycle tourism trail.

#### General Discussion:

- 

## Action Items

### **CH2M/PTN:**

- Continue outreach and data collection process with identified stakeholders
- Continue refining map contents and expanding network based upon Working Group direction

### **Working Group:**

- Review online draft maps and email thoughts, comments, and/or concurrence to Teri and Carl.

# TxDOT Bicycle Tourism Trails Study

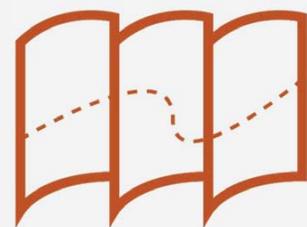
Working Group- Meeting #5

May 15, 2017

Discussion DRAFT

## Agenda

- Review and discuss Working Group 4 exercise results
  - Routing criteria prioritization exercise
  - Route location exercise
- Stakeholder outreach update
- Next steps
  - Next meeting topic(s) and scheduling
  - Action items



# Routing Criteria Prioritization



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## All Routing Criteria

- Use rural area roads with low vehicle volume (preferably carrying fewer than 2,000 vehicles per day)
- Use rural area roads with shoulders minimum 8' wide
- Use rural area roads with shoulders minimum 6' wide
- Use rural area roads with shoulders minimum 4' wide
- Avoid truck routes
- Use TxDOT's road network (US and state highways, FM roads, etc.)
- Avoid roads with steep or sustained sloping grades on hills
- Use available right-of-way within rail corridors, where possible
- Use available right-of-way within transmission line corridors, where possible
- Use existing and proposed off-road shared use paths (including rails to trails and greenways where available)
- Use corridors that highlight cultural or historic paths and points of interest
- Use corridors that highlight natural geography, unique scenery, and/or distinctive terrain
- Connect top 10 most populous metro areas in Texas
- Connect to National and State Parks
- Be more or less evenly distributed north-south and east-west
- Establish regional loops of interest focused on culture/geography/points of interest
- Establish long-distance pathways focused on connecting destinations
- Focus on two or three cross-state "spine" routes and anticipate complementary "spur" routes
- Follow reasonably direct paths in rural areas to connect major cities and/or attractions
- Be rural in nature. Where convenient, the route should pass near, but generally not through, large centers of population.
- Have bicycle services (food, water, shelter, etc.) every 40 to 60 miles
- Connect to annual bicycle events
- Connect to small town "Main Streets program"
- Connect to Texas Heritage Trails signed vehicular routes
- Have cell phone reception availability

4

# Routing Criteria

- Use rural area roads with low vehicle volume (preferably carrying fewer than 2,000 vehicles per day)
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- Have bicycle services (food, water, shelter, etc.) every 40 to 60 miles
- Connect to annual bicycle events
- Connect to small town "Main Streets program"
- Connect to Texas Heritage Trails signed vehicular routes
- Have cell phone reception availability

Strong support

Moderate support

Weak support

5

Slides intended for discussion purposes only

# Routing Criteria

- Use rural area roads with low vehicle volume (preferably carrying fewer than 2,000 vehicles per day)
- Use rural area roads with shoulders minimum 8' wide
- Use rural area roads with shoulders minimum 6' wide
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- Connect to annual bicycle events
- Connect to small town "Main Streets program"
- Connect to Texas Heritage Trails signed vehicular routes
- Have cell phone reception availability

Strong support

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## Routing Criteria

Strong support

### Criteria with strong support:

1. Use existing and proposed off-road shared use paths
2. Connect to National and State Parks
3. Use rural area roads with shoulders minimum 8' wide
4. Follow a "Spine and spur" network
5. Use low volume roadways

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## Routing Criteria

Weak support

- Use rural area roads with low vehicle volume (preferably carrying fewer than 2,000 vehicles per day)
- Use rural area roads with shoulders minimum 8' wide
- Use rural area roads with shoulders minimum 6' wide
- **Use rural area roads with shoulders minimum 4' wide**
- Avoid truck routes
- Use TxDOT's road network (US and state highways, FM roads, etc.)
- Avoid roads with steep or sustained sloping grades on hills
- Use available right-of-way within rail corridors, where possible
- Use available right-of-way within transmission line corridors, where possible
- Use existing and proposed off-road shared use paths (including rails to trails and greenways where available)
- Use corridors that highlight cultural or historic paths and points of interest
- Use corridors that highlight natural geography, unique scenery, and/or distinctive terrain
- **Connect top 10 most populous metro areas in Texas**
- Connect to National and State Parks
- **Be more or less evenly distributed north-south and east-west**
- Establish regional loops of interest focused on culture/geography/points of interest
- **Establish long-distance pathways focused on connecting destinations**
- Focus on two or three cross-state "spine" routes and anticipate complementary "spur" routes
- **Follow reasonably direct paths in rural areas to connect major cities and/or attractions**
- Be rural in nature. Where convenient, the route should pass near, but generally not through, large centers of population.
- Have bicycle services (food, water, shelter, etc.) every 40 to 60 miles
- **Connect to annual bicycle events**
- **Connect to small town "Main Streets program"**
- **Connect to Texas Heritage Trails signed vehicular routes**
- Have cell phone reception availability

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## Routing Criteria

Weak support

### Criteria with weak support:

- Use rural area roads with shoulders minimum 4' wide
- Connect top 10 most populous metro areas in Texas
- Be more or less evenly distributed north-south and east-west
- Establish long-distance pathways focused on connecting destinations
- Follow reasonably direct paths in rural areas to connect major cities and/or attractions
- Connect to annual bicycle events
- Connect to small town "Main Streets program"
- Connect to Texas Heritage Trails signed vehicular routes

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## Routing Criteria

Moderate support

- Use rural area roads with low vehicle volume (preferably carrying fewer than 2,000 vehicles per day)
- Use rural area roads with shoulders minimum 8' wide
- **Use rural area roads with shoulders minimum 6' wide**
- Use rural area roads with shoulders minimum 4' wide
- **Avoid truck routes**
- **Use TxDOT's road network (US and state highways, FM roads, etc.)**
- **Avoid roads with steep or sustained sloping grades on hills**
- **Use available right-of-way within rail corridors, where possible**
- **Use available right-of-way within transmission line corridors, where possible**
- Use existing and proposed off-road shared use paths (including rails to trails and greenways where available)
- **Use corridors that highlight cultural or historic paths and points of interest**
- **Use corridors that highlight natural geography, unique scenery, and/or distinctive terrain**
- Connect top 10 most populous metro areas in Texas
- Connect to National and State Parks
- Be more or less evenly distributed north-south and east-west
- **Establish regional loops of interest focused on culture/geography/points of interest**
- Establish long-distance pathways focused on connecting destinations
- Focus on two or three cross-state "spine" routes and anticipate complementary "spur" routes
- Follow reasonably direct paths in rural areas to connect major cities and/or attractions
- **Be rural in nature. Where convenient, the route should pass near, but generally not through, large centers of population.**
- **Have bicycle services (food, water, shelter, etc.) every 40 to 60 miles**
- Connect to annual bicycle events
- Connect to small town "Main Streets program"
- Connect to Texas Heritage Trails signed vehicular routes
- **Have cell phone reception availability**

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## Routing Criteria

Moderate support

### Criteria with moderate support (further consideration):

- Use rural area roads with shoulders minimum 6' wide
- Avoid truck routes
- Use TxDOT's road network (US and state highways, FM roads, etc.)
- Use corridors that highlight natural geography, unique scenery, and/or distinctive terrain
- Establish regional loops of interest ~~focused on culture/geography/ points of interest~~
- Have cell phone reception availability
- Use available right-of-way within rail corridors, where possible
- Use available right-of-way within transmission line corridors, where possible
- Be rural in nature. Where convenient, the route should pass near, but generally not through, large centers of population.
- Have bicycle services (food, water, shelter, etc.) every 40 to 60 miles
- Use corridors that highlight cultural or historic paths and points of interest
- Avoid roads with steep or sustained sloping grades on hills

Simplify

Combine

Re-order based upon Working Group responses

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## Routing Criteria

Moderate support

### Criteria with moderate support (further consideration):

- Avoid truck routes
- Use rural area roads with shoulders minimum 6' wide
- Use corridors that highlight natural geography, unique scenery, and/or distinctive terrain
- Use available right-of-way within rail corridors, where possible
- Use available right-of-way within transmission line corridors, where possible
- Follow regional loops of interest
- Use pathways that are scenic in nature
- Use pathways that have bicycle services (food, water, shelter, cell phone reception, etc.) every 40 to 60 miles
- Use TxDOT's road network (US and state highways, FM roads, etc.)
- Avoid roads with steep or sustained sloping grades on hills
- Use corridors that highlight cultural or historic paths and points of interest

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# Comparison of Routing Criteria Results

## Strong Support

1. Use existing and proposed off-road shared use paths
2. Connect to National and State Parks
3. Use rural area roads with shoulders minimum 8' wide
4. Follow a "Spine and spur" network
5. Use low volume rural roads

## Moderate Support

1. Avoid truck routes
2. Use rural area roads with shoulders minimum 6' wide
3. Use corridors that highlight natural geography, unique scenery, and/or distinctive terrain
4. Use available right-of-way within rail corridors, where possible
5. Use available right-of-way within transmission line corridors, where possible
6. Follow regional loops of interest
7. Use pathways that are scenic in nature
8. Use pathways that have bicycle services (food, water, shelter, cell phone reception, etc.) every 40 to 60 miles
9. Use TxDOT's road network (US and state highways, FM roads, etc.)
10. Avoid roads with steep or sustained sloping grades on hills
11. Use corridors that highlight cultural or historic paths and points of interest

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# Categorizing routing criteria based on Criteria Routing Vision

- Criteria Routing Vision:

*Identify a traffic-free network of safe pathways for muscle-powered users of all abilities connecting Texas bicycling destinations.*

- Routing vision into two categories:

1. Safe network considerations

*"Identify a traffic-free network of safe pathways for muscle-powered users of all abilities"*

2. Route selection considerations

*"connecting Texas bicycling destinations"*

# Categorized Routing Criteria

Criteria Category	Criteria
Safe network considerations	1 Use existing and proposed off-road shared use paths
	2 Use rural area roads with minimum 8' wide shoulders
	3 Use low volume rural roads
	4 Avoid truck routes
	5 Use available right-of-way within rail corridors, where possible
	6 Use available right-of-way within transmission line corridors, where possible
	7 Consider low volume rural roads with minimum 6' wide shoulders
	8 Avoid roads with steep or sustained sloping grades on hills
	9 Use TxDOT's road network (US and state highways, FM roads, etc.)
Route selection considerations	1 Connect to national and state parks
	2 "Spine and spur" network
	3 Have bicycle services (food, water, shelter, cell phone reception, etc.) every 40 to 60 miles
	4 Use corridors that highlight natural geography, unique scenery, and/or distinctive terrain
	5 Establish regional loops of interest
	6 Be scenic in nature.
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## DRAFT Route Network

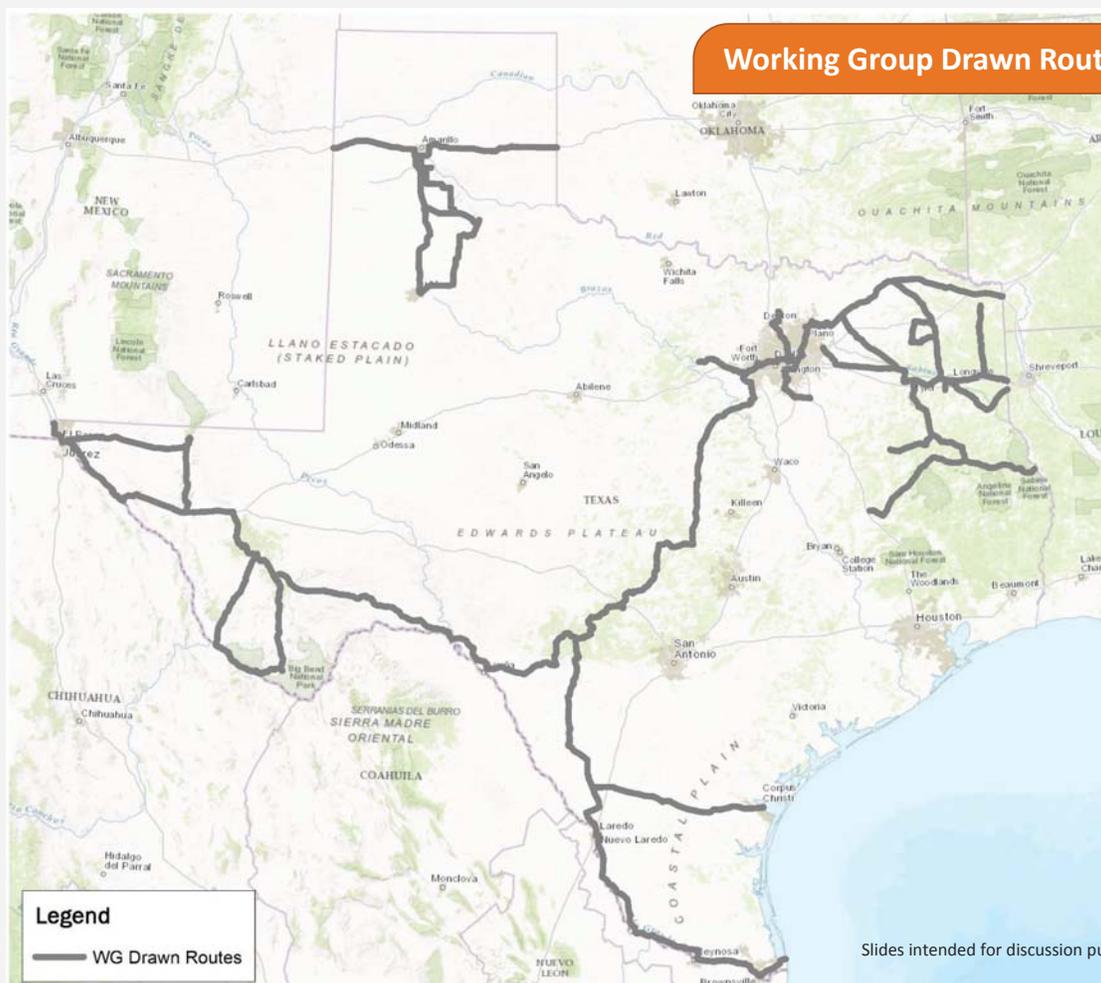


## Results from 4/10 map exercise

- BAC Working Group members provided ideas for cross state routes and regional routes of interest
- TxDOT-PTN and CH2M
  - Expanded routes to fill-in network gaps to connect to additional destinations and state/ national parks
  - Removed routes not connecting population areas or state/national parks
- TxDOT-PTN and CH2M categorized routes into:
  - Spine Routes: Cross-state bicycle tourism routes of statewide significance.
  - Spur Routes: Bicycle tourism routes connecting population areas and state and/or national parks.
  - Regional Routes: Bicycle tourism trails of regional significance that connect to natural or scenic areas and frequently form loops nearby larger population centers.

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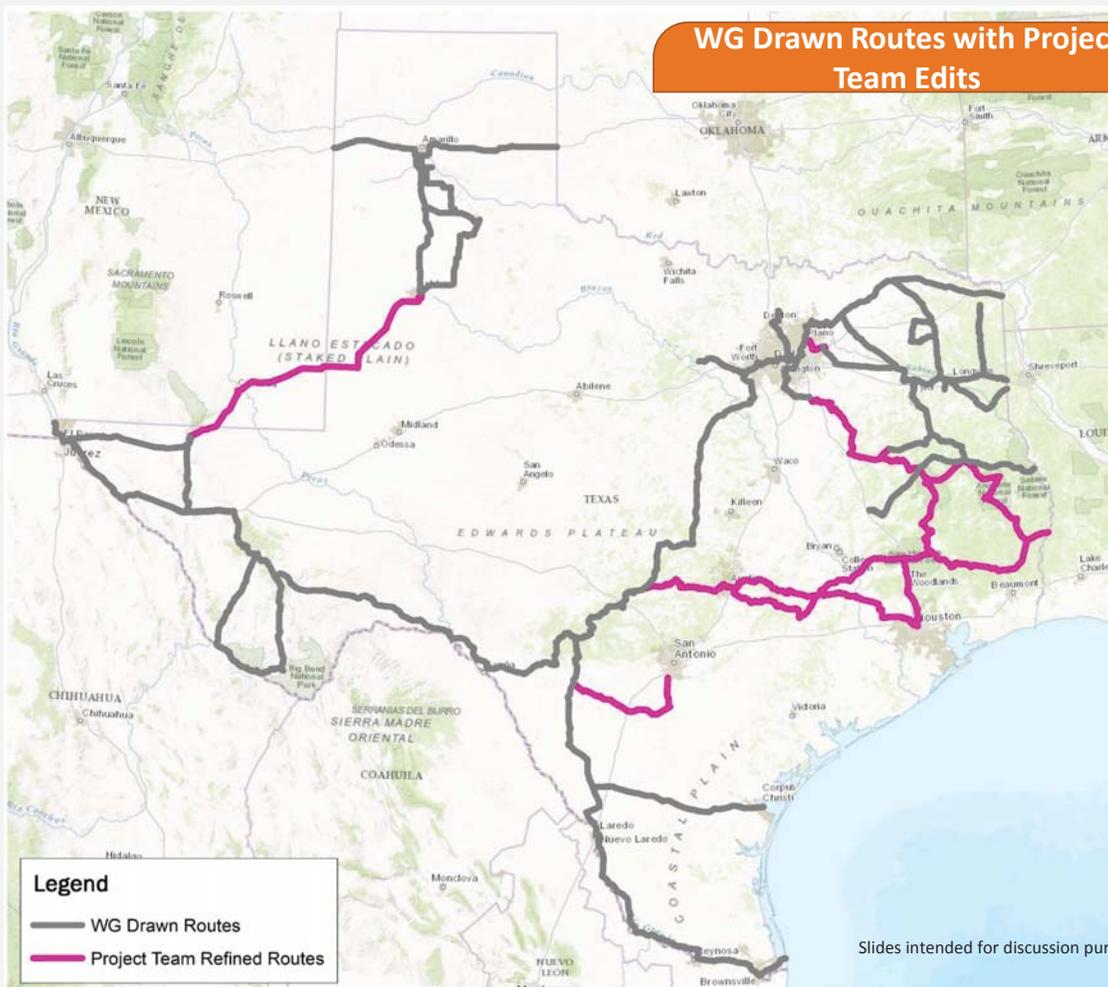
Slides intended for discussion purposes only



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**WG Drawn Routes with Project Team Edits**



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Slides intended for discussion purposes only

**Discussion Routes -Categorized**



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[Click here to TOUR ONLINE MAP](#)

## Stakeholder Outreach



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## Stakeholder Outreach Update

### Texas State Agency Tourism Council (TSATC) (5/2/2017)

- Presented an overview of current status of TxDOT's Bicycle Tourism Trails Study (BTTS) and discussed bicycle tourism approaches in other states.
- TSATC members introduced themselves, their agency's activities, and potential opportunities for partnership
- TxDOT/CH2M to be invited back for update in the fall



### TxDOT District and Division Outreach

- Inform TxDOT District and Division staff of BTTS vision, goals, and objectives.
- Provide link for TxDOT district/division to review online discussion draft map.

### MPO and COG Outreach

- Request comments from:
  - Association of Texas Metropolitan Planning Organizations (TEMPO)
  - Texas Association of Regional Councils (TARC)

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## Questions



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## Action Items

### TxDOT-PTN & CH2M:

- MPO and TxDOT outreach
- Developing initial design criteria



### Working Group:

- Review online DRAFT maps and email thoughts, comments, and/or concurrence to Teri and Carl.

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# June Working Group Meeting

## Topics:

- Discuss design criteria (bike lanes, shoulders, shared use paths, etc.)
- Stakeholder outreach update



## Scheduling:

- June 12<sup>th</sup>, 12:00 - 1:15 pm?

Thank You!!

**Bicycle Advisory  
Committee**

**Carl Seifert**

*Transportation Planner*

[carl.seifert@ch2m.com](mailto:carl.seifert@ch2m.com)

CH2M: 512-249-3351

TxDOT: 512-374-5213

**ch2m.**



*Public Transportation (PTN)*

**Teri Kaplan**

**Bonnie Sherman**

## Working Group Meeting #6

**ATTENDEES:** BAC Working Group: Billy Hibbs, DawnElla Rust, Joseph Pitchford, and Karla Weaver;  
TxDOT-PTN: Teri Kaplan and Andrew House;  
CH2M: Carl Seifert and Nishant Kukadia

**MEETING FORMAT:** Conference Call via WebEx (visual & audio access for all)  
 Prior to the meeting, a copy of the PowerPoint presentation (in pdf form) and agenda were distributed via email to the working group members.

**COPY TO:** TxDOT-PTN and file

**NOTES PREPARED BY:** CH2M and TxDOT-PTN

**DATE:** 6/20/17

## Meeting Objectives

- Discuss process and inputs for applying route location criteria onto preliminary routes
- Discuss changes to preliminary routes based upon Working Group Member feedback
- Provide a stakeholder outreach update

## Summary

### Introductions and overview

The meeting began 11 minutes late and role was called to identify all those in attendance. Carl Seifert with CH2M provided an overview of the agenda and noted the meeting objectives.

### Applying Route Location Criteria

- Carl Seifert began this section of the presentation by reminding the Working Group what they last heard about Route Location Criteria. He presented a slide from the May Working Group presentation which displayed the proposed BTTTS route location criteria in priority order as agreed upon by the Project Team and Working Group.
- Following the identification of the Route Location Criteria priority order, the next step is to apply the route location criteria to the Preliminary Route network so that it better aligns with the priorities identified by the Working Group. The next slide overviewed the process for applying routing location criteria, which includes the following:
  1. Define how to measure routing criteria (metrics)
  2. Gather relevant GIS data
  3. Use GIS software to compare route criteria metrics data with "Preliminary Routes" locations
  4. Modify and document "**Preliminary Routes**" changes
  5. Modified routes renamed "**Conceptual Routes**"
- The following slide presented a table featuring the simplified route location criteria with a column identifying if quantifiable data is currently available for each criteria or if the criteria is "subjective routing guidance". The remaining slides within this section of the presentation focused on proposed metrics for specific route location criteria. These metrics propose an answer to the question:

- What measures should we use to quantify and apply the route location criteria?
- A table showing the first quantifiable route location criteria, Roads with wide shoulders, was shown. This table identified the range of acceptable shoulder widths and identified that motor vehicle speeds would be considered in conjunction with shoulder widths but these speeds measures have yet to be determined. Acceptable speed measures will be discussed with TxDOT Design and Traffic Operations Divisions.
  - Values presented in the table: Minimum- 4 feet; Recommended- 6 feet; and Preferred- 8 feet
  - Recommended table changes: Minimum- 6 feet; Standard- 8 feet; and Preferred- 10 feet.
  - Discussion- Working Group members suggested that motor vehicle volumes should not be considered separately, but instead in conjunction with should widths. A column should be included that features a range of maximum volumes for motor vehicles as measured by Average Daily Traffic (ADT) for each of the acceptable shoulder widths.
- A table showing the second quantifiable route location criteria, Roadway volumes, was shown. This table identified the range of acceptable range of maximum volumes for motor vehicles as measured by Average Daily Traffic (ADT). Based on discussion this metric will be combined with the previous slide. Acceptable motor vehicle volume measures will be discussed with TxDOT Design and Traffic Operations Divisions.
- A table showing the third quantifiable route location criteria, avoid truck routes, was shown. While data representing the percent of heavy trucks on a road segment is largely available and therefore a number of heavy trucks on a road segment can be identified, a metric reflecting a broader level of analysis was chosen. The table on this slide presents a range of acceptable metrics/measures reflective of the Texas Highway Freight Network Plan. These metrics need to be revised in coordination with TxDOT Design and Traffic Operations Divisions.
- Lastly, the remaining route location criteria which do not have quantifiable metrics were discussed and presented as follows:
  - Use existing and proposed off-road shared use paths
    - METRIC- Modify route if shared use path is within 5 miles
  - Use available right-of-way within rail corridors, where available
    - METRIC- Modify route if rail corridor is within 10 miles and generally parallel
  - Connect to national and state parks
    - METRIC- Modify route if state park is within 10 miles from preliminary routes
    - 91% state/national parks, State/National Monuments and Historic Areas land areas are within 10 miles of preliminary routes
  - Available bicycle services and amenities (including but not limited to food, water, shelter, cell phone reception, etc.) every 40 to 60 miles
    - METRIC- Still under development
  - Use corridors that highlight cultural or historic paths and points of interest
    - METRIC- Modify route if rail corridor is within 5 miles and generally parallel

- Route Location Criteria Discussion:
  - Billy Hibbs comment- Having Preliminary Routes located so near a large portion of the State/National Parks in Texas will be a good consensus builder.
  - Karla Weaver – In her opinion, the following criteria are all versions of the same thing and should be combined.
    - *right-of-way within rail corridors*
    - *shared use paths*
    - *corridors that highlight cultural or historic paths*
  - Consensus opinion- The project team needs to create a new metric to reflect willingness to move an existing route given the presence of a nearby shared use path. The new metric should be a ratio of the distance away from an existing Preliminary Route in relation to the length of the proposed facility.

### **Preliminary Route Network Changes**

- Previous Preliminary Route Network map (5/15) – This slide showed a map of the Preliminary Routes as of May 15<sup>th</sup> (the date of the May Working Group meeting).
- Current Preliminary Route Network map (6/20) – This slide showed a map of the Preliminary Routes as of June 20<sup>th</sup>. The changes to the route network reflect the comments received by the Working Group members and changes discussed within the project team. Changes included but were not limited to:
  - Routes were added in central Texas connecting Abilene, San Angelo, and several State Parks to the Central Texas Spine Route.
  - A spur route was created connecting Amarillo, Wichita Falls, and several State Parks to Lake Mineral Wells west of Fort Worth.
  - A spur route was created along the coast of the Gulf of Mexico from Brownsville to Corpus Christi.
- Carl requested greater participation from Working Group members regarding the Preliminary Route locations. Only 3 of 7 members provided feedback. He specifically suggested feedback on three geographic areas: 1) north of Amarillo, 2) between Lubbock and San Angelo, and 3) connections between Corpus Christi and Houston. The project team will reach out to TxDOT District staff for additional input.

### **Stakeholder Outreach Update**

The next slide detailed several recent stakeholder outreach actions taken by the project team recently. Two information outreach presentations were given to TxDOT Division and District staff including:

- June 6<sup>th</sup> – Presentation to TxDOT District TP&D Directors at Quarterly Mtng in Austin
- June 8<sup>th</sup> – Webinar presentation to TxDOT MPO Coordinators

Additionally, the project team in the near term will be sending informational emails to TxDOT district/division leadership outlining the vision, goals and objectives, and an overview of stakeholder outreach activities.

Lastly, Carl (CH2M) described the future requests of input for local knowledge from MPO, COG, and TxDOT District staff. Currently, CH2M is developing a Wikimap Online Input Tool to receive location specific comments/feedback/agreement from representatives with local knowledge of bicycle destinations, plans, and infrastructure.

#### Stakeholder Discussion:

- Billy asked if TxDOT leadership outreach has included the Texas Transportation Commissioners. Teri replied that it has not included commissioners, only TxDOT District and Division leadership. However, PTN Director Eric Gleason has regular meetings with TxDOT Administration and has mentioned the BTTS to them.

#### General Discussion:

- Regarding Preliminary Route locations, Karla feels very strongly that Spine Routes should connect into urban areas, in particular San Antonio and Houston.
  - This represents a diversion from previous discussions about route location criteria. Previously, BTTS routes were primarily rural in nature and not intended to connect into cities. The reason Dallas/Fort Worth metroplex has a spine route through it has more to do with its proximity to the longest and most established shared use path in the state, Northeast Texas Trail.
  - Several Working Group members mentioned that routes running through these urban areas will help with eventual implementation and will gain support from Texas Transportation Commission members.
  - In dealing with this enormous geographic area, what is the best way to get the spines to connect with metropolitan areas? Should the route type be a spine route or a spur route?
  - Billy suggested a spur route connect into San Antonio following their Mission Trail network. The current regional route connects to the southern terminus of the Mission Trail network, but does not follow the network into the urban area.
  - Karla suggested that the existing spine route which follows the southern tier should be moved south to follow US 90. Additionally, this parallel route could become a spur route instead or a spine route
- Billy mentioned that the Dallas Morning News had an interesting article about the Mayor of Dallas' desire to create bicycle networks. He suggested that Karla discuss this article at the next BAC meeting. Teri suggested that Karla should also give an update on NCTCOG's 2017 Transportation Alternative Set-Aside Call for Projects.

## Action Items

#### **CH2M/PTN:**

- Update online map of Preliminary Routes for additional Working Group comments
- Make revisions to route location criteria per discussion during meeting
- Continue outreach to MPO and TxDOT
- Continue developing route criteria metrics and design criteria with TxDOT Division coordination
- Begin applying route location criteria metrics

#### **Working Group:**

- Review online DRAFT maps and provide thoughts, comments, and/or concurrence on Preliminary Route locations to Teri and Carl via email.

# TxDOT Bicycle Tourism Trails Study

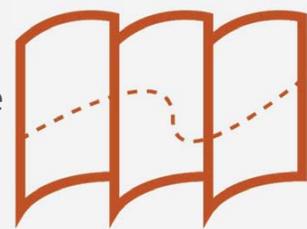
Working Group- Meeting #6

June 20, 2017

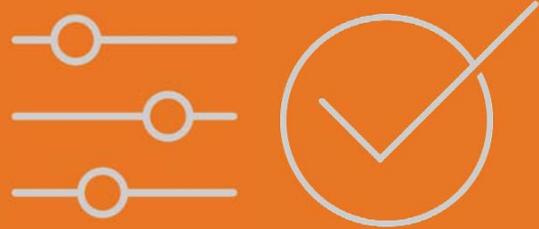
Discussion DRAFT

## Agenda

- Applying Route Criteria
  - Identify process and measures used to apply the route location criteria to the preliminary routes
- Preliminary Route Network Changes
- Stakeholder outreach update
  - Stakeholders presentations
  - Development of a Wikimapping Online Input Tool
- Next steps
  - Next meeting topic(s) and scheduling
  - Action items



# Applying Route Location Criteria



## Categorized Routing Criteria (previously viewed)

Criteria Category	Criteria
Safe network considerations	1 Use existing and proposed off-road shared use paths
	2 Use rural area roads with minimum 8' wide shoulders
	3 Use low volume rural roads
	4 Avoid truck routes
	5 Use available right-of-way within rail corridors, where possible
	6 Use available right-of-way within transmission line corridors, where possible
	7 Consider low volume rural roads with minimum 6' wide shoulders
	8 Avoid roads with steep or sustained sloping grades on hills
	9 Use TxDOT's road network (US and state highways, FM roads, etc.)
Route selection considerations	1 Connect to national and state parks
	2 "Spine and spur" network
	3 Have bicycle services (food, water, shelter, cell phone reception, etc.) every 40 to 60 miles
	4 Use corridors that highlight natural geography, unique scenery, and/or distinctive terrain
	5 Establish regional loops of interest
	6 Be rural/scenic in nature.
	7 Use corridors that highlight cultural or historic paths and points of interest

## Process for Applying Routing Criteria

1. Define how to measure routing criteria (metrics)
2. Gather relevant GIS data
3. Use GIS software to compare route criteria metrics data with “Preliminary Routes” locations
4. Modify and document “**Preliminary Routes**” changes
5. Modified routes renamed “**Conceptual Routes**”



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## Defining Routing Criteria Metrics

Criteria Category	Criteria	Data available?
Safe network considerations	Use existing and proposed off-road shared use paths	Yes
	Use roads with wide shoulders	Yes
	Use low volume roads	Yes
	Avoid truck routes	Yes
	Use available right-of-way within rail corridors, where possible	Yes
	Use available right-of-way within transmission line corridors, where possible	?
Route selection considerations	Connect to national and state parks	Yes
	“Spine and spur” network	Subjective routing guidance
	Have bicycle services and amenities (food, water, shelter, cell phone reception, etc.) every 40 to 60 miles	Yes
	Use corridors that highlight natural geography, unique scenery, and/or distinctive terrain	Subjective routing guidance
	Establish regional loops/routes of interest	Subjective routing guidance
	Be rural/scenic in nature.	Subjective routing guidance
	Use corridors that highlight cultural or historic paths and points of interest	Yes

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## Routing Criteria: Roads with wide shoulders

Criteria	Range	Metric	Speed Limits	Data Source
<b>Use roads with wide shoulders</b>	Minimum	<b>4 feet</b>	<i>TBD</i>	TxDOT GIS
	Recommended	<b>6 feet</b>	<i>TBD</i>	
	Preferred	<b>8 feet</b>	<i>TBD</i>	

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## Routing Criteria: Low volume roads

Criteria	Range	Metric	Data Source
<b>Use low volume roads</b>	Maximum	<b>8,000 ADT</b>	TxDOT GIS
	Recommended	<b>5,000 ADT</b>	
	Preferred	<b>2,000 ADT</b>	

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## Routing Criteria: Avoid truck routes

Criteria	Range	Metric	Data Source
<b>Avoid truck routes</b>	Maximum	Segment is <b>not on Primary Network</b> of Texas Highway Freight Network	TxDOT GIS
	Recommended	Segment is <b>not on Secondary Network</b> of Texas Highway Freight Network	
	Preferred	Segment is <b>not on any road</b> within Texas Highway Freight Network	

- Truck route metrics will be coordinated and agreed upon with TxDOT Traffic Operations and Design Divisions

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## Other Routing Criteria Metrics

Use existing and proposed off-road shared use paths

- METRIC- Modify route if shared use path is within 5 miles

Use available right-of-way within rail corridors, where available

- METRIC- Modify route if rail corridor is within 10 miles and generally parallel

Connect to national and state parks

- METRIC- Modify route if state park is within 10 miles from preliminary routes
- 206 of 285 state/national parks, forests, grasslands, or wildlife management areas are within 25 miles of preliminary routes

Available bicycle services and amenities (including but not limited to food, water, shelter, cell phone reception, etc.) every 40 to 60 miles

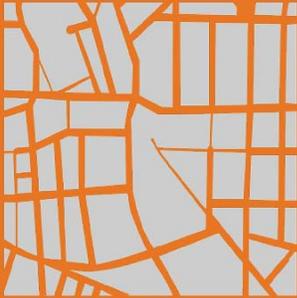
- METRIC- Still under development

Use corridors that highlight cultural or historic paths and points of interest

- METRIC- Modify route if rail corridor is within 5 miles and generally parallel

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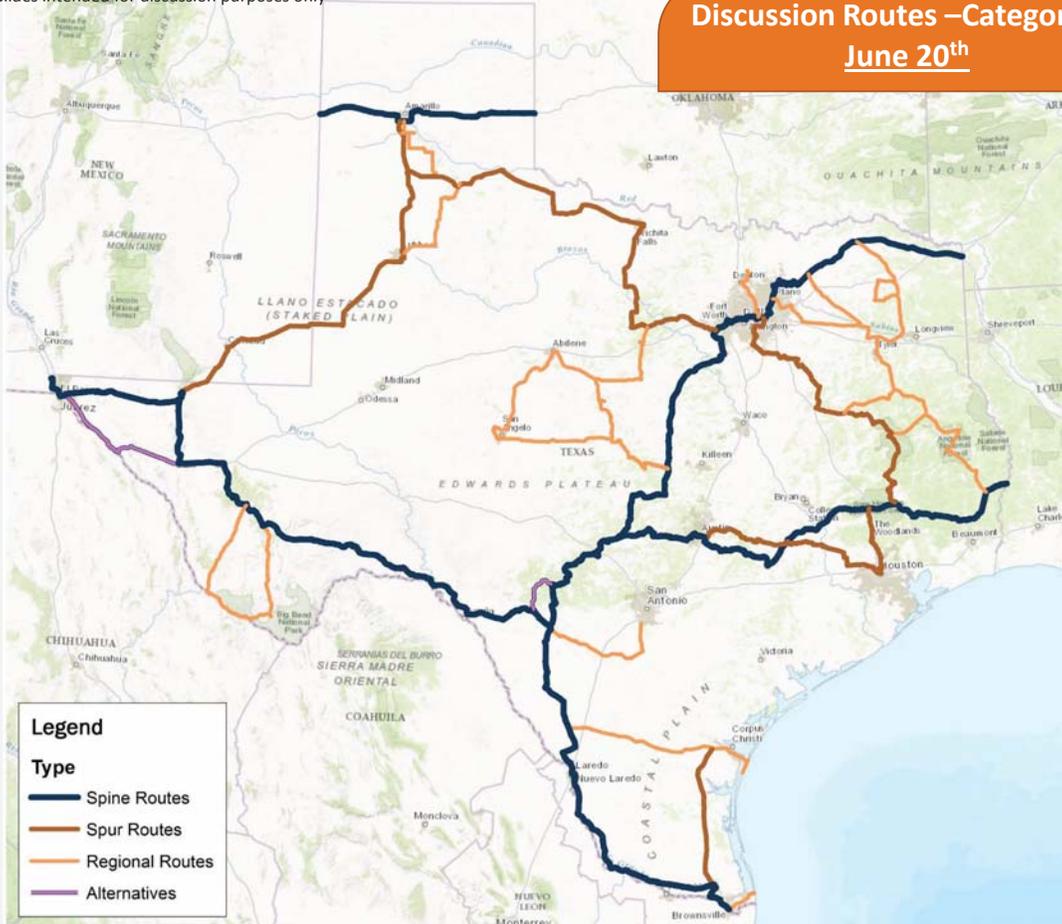
# Preliminary Route Network Changes



Slides intended for discussion purposes only

**Discussion Routes –Categorized  
May 15<sup>th</sup>**





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## Stakeholder Outreach



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# Stakeholder Outreach Update

## TxDOT District and Division Staff *Informational Outreach*

- June 6<sup>th</sup> – Presentation to TxDOT District TP&D Directors at Quarterly Mtng in Austin
- June 8<sup>th</sup> – Webinar presentation to TxDOT MPO Coordinators
- Upcoming – Email to TxDOT district/division leadership



## MPO, COG, and TxDOT District *Input Outreach*

- CH2M to create a Wikimap Online Input Tool
  - Purpose: To receive input on “Conceptual Routes” locations from MPO, COG, and TxDOT District staff

# Questions



# Action Items

## TxDOT-PTN & CH2M:

- MPO and TxDOT outreach
- Developing initial design criteria with TxDOT Division coordination
- Applying route location criteria established by BAC



## Working Group:

- Review online DRAFT maps and provide thoughts, comments, and/or concurrence on Preliminary Route locations to Teri and Carl via email.

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Slides intended for discussion purposes only

# Future Working Group Meetings

## July topics:

- Discuss preliminary design criteria (bike lanes, shoulders, shared use paths, etc.)
- Stakeholder outreach update

## July and August meetings:

- WG #7, In-person after BAC
  - July 17<sup>th</sup>, 1:00 - 2:30 pm
- WG #8, WebEx
  - August 21<sup>st</sup> or 22<sup>nd</sup>, 12:30 - 2:00 pm?



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Thank You!!

**Bicycle Advisory  
Committee**

**Carl Seifert**

*Transportation Planner*

[carl.seifert@ch2m.com](mailto:carl.seifert@ch2m.com)

CH2M: 512-249-3351

TxDOT: 512-374-5213



*Public Transportation (PTN)*

**Teri Kaplan**

**Bonnie Sherman**

## Working Group Meeting #7

**ATTENDEES:** BAC Working Group: Billy Hibbs, Shawn Twing, and Karla Weaver;  
TxDOT-PTN: Bonnie Sherman and Andrew House;  
CH2M: Carl Seifert and Shibiya Sulfikar Sabu

**MEETING FORMAT:** In-person Meeting in Conference Room C at 200 E Riverside Dr. Austin, TX 78704  
Members unable to join in-person were encouraged to attend via WebEx Conference Call (visual & audio access for all)

**COPY TO:** TxDOT-PTN and file

**NOTES PREPARED BY:** CH2M and TxDOT-PTN

**DATE:** 07/17/17

## Meeting Objectives

- Discuss changes to Preliminary Routes
- Discuss the process for transitioning Preliminary Routes to Conceptual Routes
- Provide an update on the benefits of bicycle tourism research

## Summary

### Introductions and overview

The meeting began 5 minutes late and role was called to identify all those in attendance. Carl Seifert with CH2M provided an overview of the agenda and noted the meeting objectives.

### Changes to Preliminary Routes

- Carl Seifert began this section of the presentation by reminding the Working Group what they discussed previously using the maps generated following the June 20 Working Group meeting. Specifically, he highlighted the results of the recommendation to have Spine Routes running *into and through* San Antonio and Houston. He then presented an updated map reflecting these changes.
- There was some discussion about the location of the route along the Rio Grande River. Carl noted that the Lower Rio Grande Valley contains a host of historic towns, along with natural and scenic areas. The current Preliminary Route connects from Brownsville to Laredo, some of the largest urban areas in South Texas. He also noted that the BTTTS study is at a high level and some concerns would be subject to future implementation phases.

### Transition of Preliminary Routes to Conceptual Routes

- Implementation- A working group member inquired about how this network may actually be constructed/implemented. Karla stated that the implementation and ownership structure may follow the pattern utilized by the Northeast Texas Trail. Specifically, cities and counties would maintain and operate off-road bicycle tourism trail facilities. TxDOT would not own/ operate off-

road trails, but would own/operate on-street facilities on their state-maintained network. During this discussion, Karla recommended that the Project Team should place the BTTs Proposed Routes in the best possible locations and then allow the local entities to build toward the route network over time.

- Design Criteria –
  - Regarding surface treatments, Mr. Shawn Twing mentioned the local popularity in the Amarillo area of long-distance bicycle riding on gravel. He asked if there was any discussion of including gravel treatments on proposed routes? Carl deferred this discussion to a future Working Group meeting.
  - Shawn also asked about the potential of a bicycle accommodation along higher speed roadways that would include a concrete barrier between motor vehicles and cyclists. Carl deferred this discussion to a future Working Group meeting.
- Rail project coordination- Regarding any future opportunities for bicycle tourism trails to be routed within rail right-of-way, Karla pointed out two current TxDOT high-speed rail corridors under study: 1) a north-south corridor between Oklahoma City, Fort Worth and McAllen through Austin and San Antonio, and 2) a privately funded high-speed rail line in the Dallas to Houston corridor. While each are at the beginning stages of development, it may be worth noting or considering future coordination within these corridor alignments.
- Services and amenities- Mr. Shawn Twing raised a concern about the availability of bicycle services and amenities in some geographic areas of Texas. Carl discussed the prepared slide with routing criteria related to amenities and services every 50 miles. The assembled group discussed this 50-mile metric along with the 500-person threshold proposed by CH2M. They agreed that a population size of 500 was likely to indicate the presence or opportunity for a gas station or restaurant that may provide needed amenities for bicycle tourists. Additionally, Carl suggested that proposed BTTs routes could indicate the lack of amenities at the current time. At some point, a gas stations/ restaurant could open, and make a route more viable for the bicycle tourists.
- Thinking of the different difficulty levels present on ski slopes, Billy suggested that proposed routes could indicate an anticipated degree of difficulty for the bicycle tourist. Perhaps something similar to the following:
  - Green– Beginner
  - Blue – Intermediate
  - Black– Advanced
- Regarding bicycle tourism trail routes being oriented towards state parks, Billy suggested that many bicycle tourists will be staying at hotels rather than carrying camping equipment. Furthermore, there may be benefit in considering hotel locations on tourism trail networks in addition to the locations of state parks. It would be a good idea to provide a balance of adventurous and comfortable biking experience for bicycle tourists.

### **Benefits Research Update**

- Carl quickly summarized the bicycling benefits research progress as it was closer to the end time. Currently, research is focused on tourist consumer spending, economic benefits, and health benefits.

## Action Items

### **CH2M/PTN:**

- Apply routing criteria to transition Preliminary Routes to Conceptual Routes
- MPO and TARC outreach
- Create and share Wikimapping Online Input Tool with TxDOT District, MPO, and COG staff

### **Working Group:**

- Once the Wikimap Online Input Tool is available, encourage your MPO and COG contacts to provide their input

# TxDOT Bicycle Tourism Trails Study

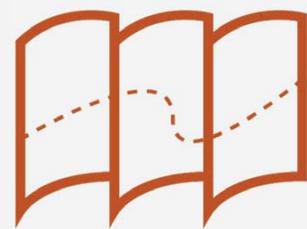
Working Group- Meeting #7

July 17, 2017

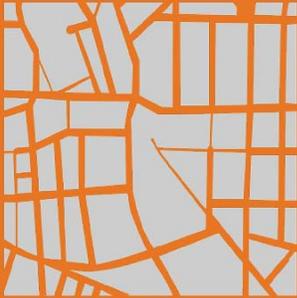
Discussion DRAFT

## Agenda

- Preliminary Route Network Changes
- Transitioning Preliminary Routes to Conceptual Routes
- Benefits of Bicycling research update
- Next steps
  - Next meeting topic(s) and schedule
  - Action items



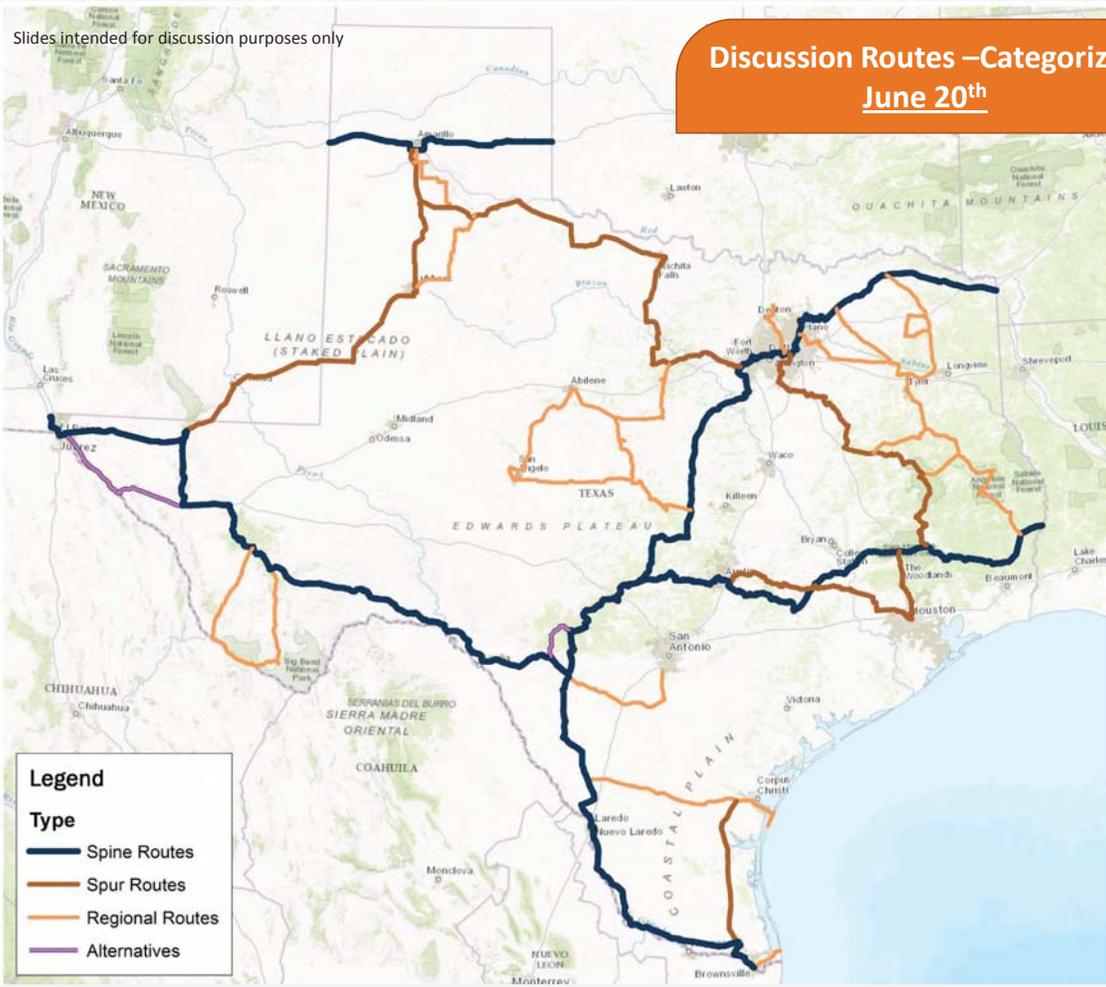
# Preliminary Route Network Changes



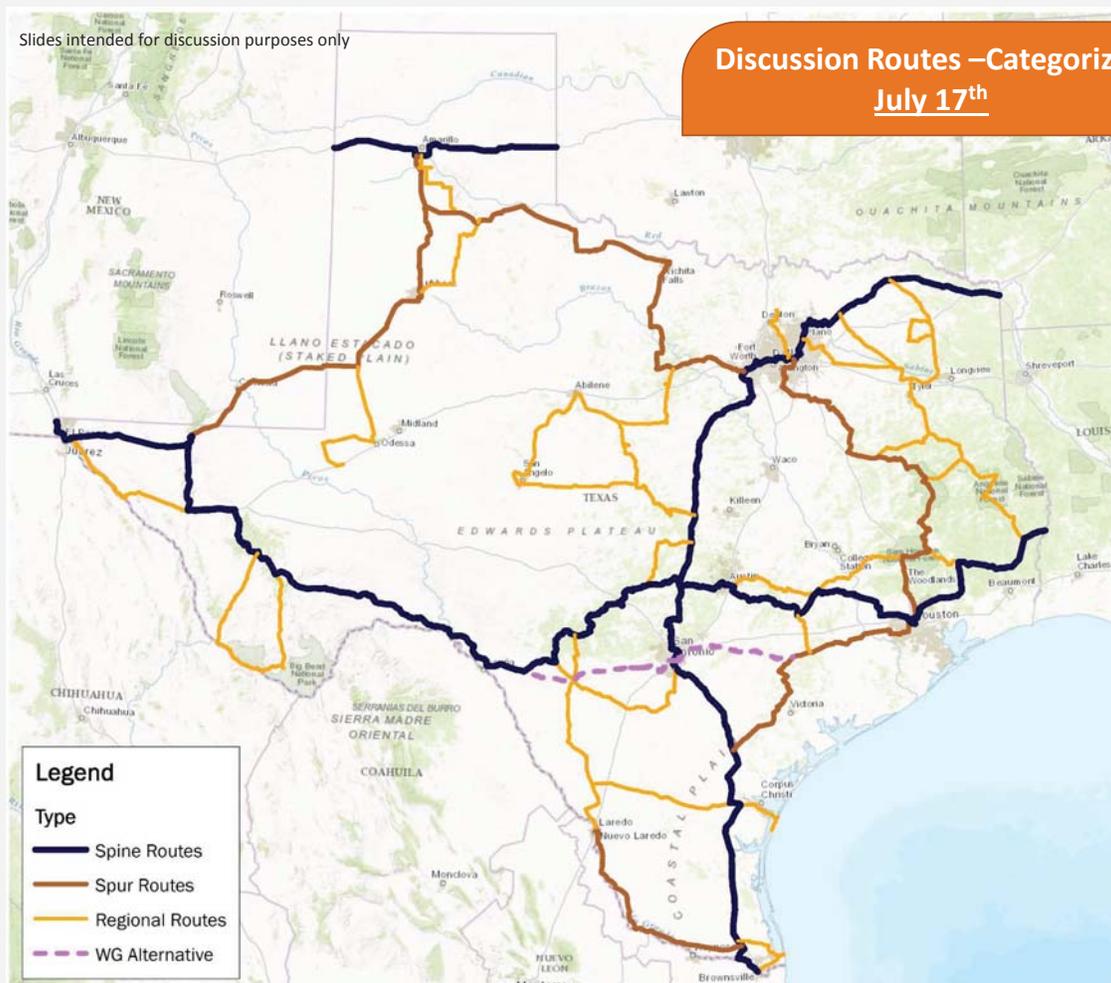
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Discussion Routes –Categorized  
June 20<sup>th</sup>

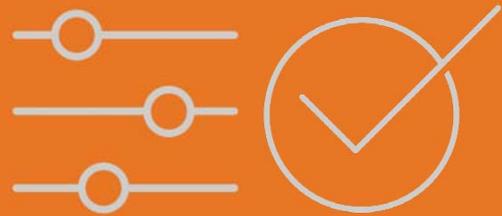


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## Transitioning Preliminary Routes to Conceptual Routes



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## Transitioning Preliminary Routes to Conceptual Routes

Preliminary Routes connect:

- to state and national parks,
- between existing shared use paths,
- to large urban areas with existing bicycle accommodation investments



But are the Preliminary Routes suitable for the average cyclist?

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## Transitioning Preliminary Routes to Conceptual Routes

Three-phase process to transition Preliminary Routes to Conceptual Routes:

### Phase 1

**Isolate segments** of Preliminary Route network currently suitable for **bicyclists of all ages and abilities**

Existing roadways and shared use paths suitable for all ages and abilities

### Phase 2

Isolate segments of Preliminary Route network currently suitable for **average bicyclists**.

Existing roadways and shared use paths suitable for average cyclists (to be upgraded for bicyclists of all ages and abilities)

### Phase 3

**Evaluate gaps and make route possible modifications** to complete network with Phase 1 and 2 segments

Routes currently only suitable for road-warrior/experienced cyclists (to be upgraded for bicyclists of all ages and abilities)

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## Transitioning Preliminary Routes to Conceptual Routes

### Phase 1

**Isolate segments** of Preliminary Route network currently suitable for **bicyclists of all ages and abilities**

These segments either have:

1. Existing or planned shared use paths, or
2. Barrier separated bike lanes or cycle-tracks

## Transitioning Preliminary Routes to Conceptual Routes

### Phase 2

**Isolate segments** of Preliminary Route network currently suitable for **average bicyclists**

These segments either have:

1. Shoulder width 10 feet or wider with speeds greater than 45 mph,
2. Shoulder width 6 feet or wider with speeds under 45 mph, or
3. Shoulder width 4 to 6 feet with speeds under 35 mph

## Transitioning Preliminary Routes to Conceptual Routes

### Phase 3

Evaluate gaps and make route modifications to complete network with Phase 1 and 2 segments

Assuming isolated segments from Phase 1 and 2 are small in number and sizable gaps are located between segments, **the project team will identify the most suitable nearby on-road bicycle routes to fill the gaps.**

1. The entire state road network will be ranked based upon a set of criteria (next slides).
2. If the current on-road conditions of a Preliminary Route segment are not suitable for the average bicyclist, then the route may be modified towards a more suitable location.
3. Identify segments not suitable for average bicyclists.

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## Transitioning Preliminary Routes to Conceptual Routes

Ranking Criteria	Metric	Type	Score
Lower speed roadways are more compatible with bicycling	55+ MPH	Weak	2
	35-55 MPH	Moderate	4
	<35 MPH	Strong	8
Low volume roads	6,000+ vehicles/lane	Weak	2
	3,000 – 6,000 vehicles/lane	Moderate	4
	<3,000 vehicles/lane	Strong	8
Avoid truck routes	1,000+ trucks/lane	Weak	2
	100- 1,000 trucks/lane	Moderate	4
	<100 trucks/lane	Strong	8
Roads with wide shoulders	0 – 5' shoulder width	Weak	2
	6-7' shoulder width	Moderate	4
	8'+ shoulder width	Strong	8

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## Transitioning Preliminary Routes to Conceptual Routes

Ranking Criteria	Metric	Type	Score
Low volume roads more compatible with bicycling	55+ MPH	Weak	2
	35-55 MPH	Moderate	4
		Strong	8
Project team can then rank all roads and modify Preliminary Roads according to highest score.	6,000+ vehicles/lane	Weak	2
	3,000 - 6,000 vehicles/lane	Moderate	4
	<3,000 vehicles/lane	Strong	8
Avoid truck routes	1,000+ trucks/lane	Weak	2
	100- 1,000 trucks/lane	Moderate	4
		Strong	8
Roads with wide shoulders	0 - 5' shoulder width	Weak	2
	6-7' shoulder width	Moderate	4
	8'+ shoulder width	Strong	8

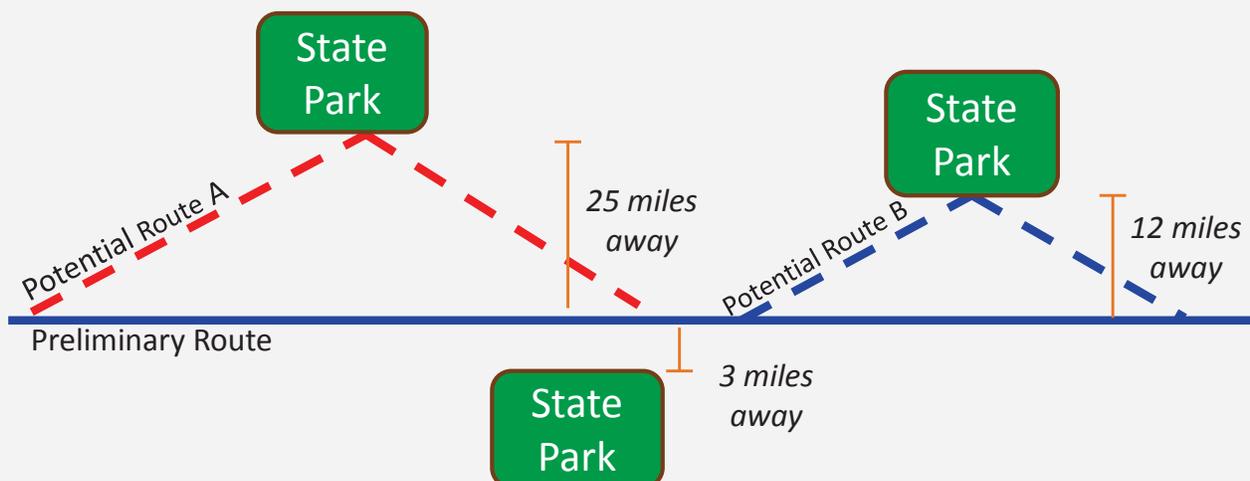
When complete, all state and county roads will have a score.

When modifying routes, we will utilize the following routing criteria...

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## Transitioning Preliminary Routes to Conceptual Routes

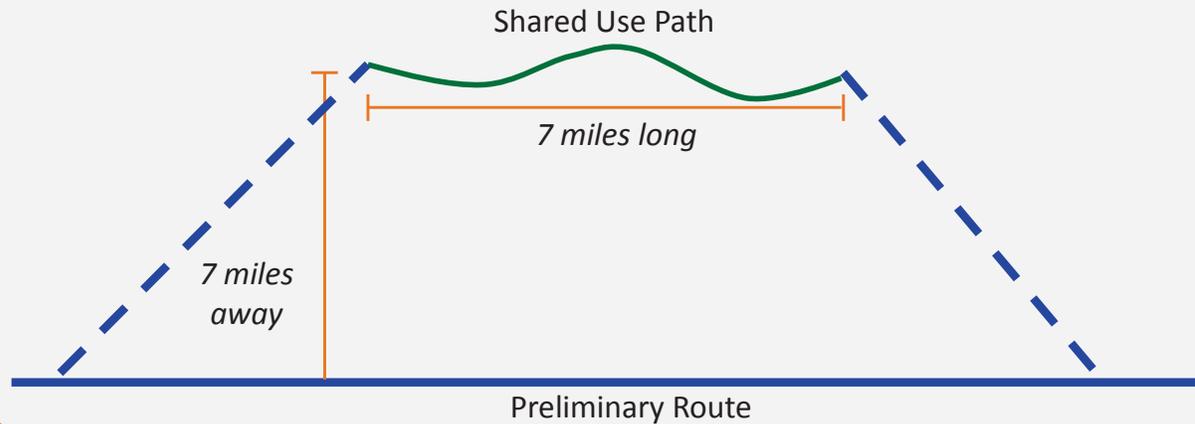
Routing Criteria	Metric
Connect to national and state parks	Is State/National Park present within 5 and 15 miles?



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## Transitioning Preliminary Routes to Conceptual Routes

Routing Criteria	Metric
Existing or proposed off-road shared use paths on approved local transportation plans	Is distance ratio higher than 1? $\frac{\text{shared use path length (miles)}}{\text{distance away (miles)}}$



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## Transitioning Preliminary Routes to Conceptual Routes

Routing Criteria	Metric
Bicycle services and amenities ( <i>food, water, shelter, cell phone reception, etc.</i> ) are located every 50 miles	A city with a population above 500 people is located at least every 50 miles.



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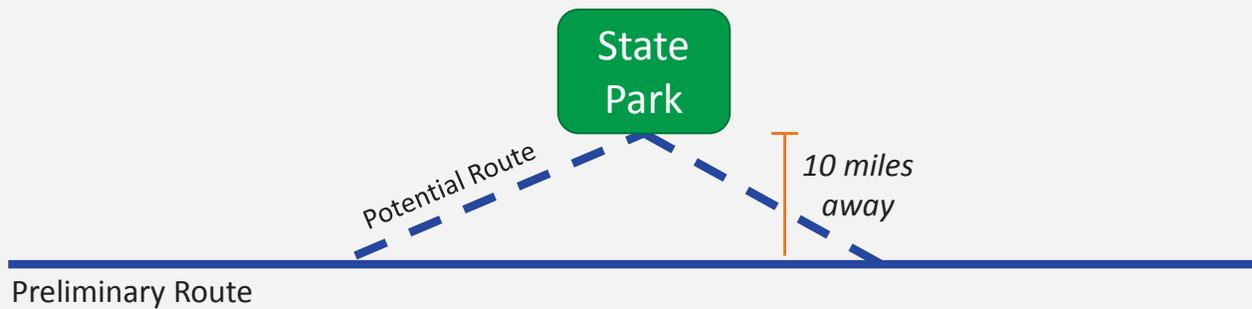
# BTTS Routing Considerations



- Routing scenario

- A State Park is 10 miles away from the proposed Preliminary Route; however roadways to the park have limited shoulders and high-traffic volumes.

***Do we re-route towards it?***



## Benefits Research Update



## Economic Benefits of Bicycle Tourism



- Variables for spending:
  - Trip type
  - Length of bicycle trip
  - Household income
  - Local vs. non-local
  - Guided vs non-guided
  - Type of accommodations
- Tourist consumer spending
  - Analysis of state, regional, and local studies reveals
    - Average of **\$136.22/day**
    - Ranging from **\$78 to \$275/day**

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## Economic Benefits



- Local vs tourist bicyclists:
  - Wisconsin study of trail usage revealed:
    - Bicycling residents spent **\$18/day** vs.
    - Bicycling tourists (multi-day) spent **\$80/day**
- Bicycling events and races:
  - 2015 Minnesota Study found average visitor to bicycle event spent **\$121/ day.**
- Property Values:
  - Property values in direct proximity to trails consistently increase between **1 and 6.5%**.

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## Personal Physical Health Benefits of Bicycling

- Living near a shared use path
  - 50% more likely to exercise regularly
  - 73-80% more likely to exercise on bicycle regularly



- Mental Health and Social Benefits

- Studies show being outdoors and exercising in nature
  - Reduces stress
  - Improves attention deficits
  - Correlates with improved social cohesion and reduced crime rates

## Questions



## Action Items

### TxDOT-PTN & CH2M:

- Apply routing criteria to transition Preliminary Routes to Conceptual Routes
- MPO and TARC outreach
- Create and share Wikimapping Online Input Tool with TxDOT District, MPO, and COG staff
- Develop draft design criteria (bike lanes, shoulders, shared use paths, etc.)



### Working Group:

- Once the Wikimap Online Input Tool is available, encourage your MPO and COG contacts to provide their input

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## Future Working Group Meetings

### August topics:

- Discuss draft design criteria (bike lanes, shoulders, shared use paths, etc.)
- Stakeholder outreach update

### Next meetings:

- WG #8, WebEx
  - August 22<sup>nd</sup>, 12:30 - 1:30 pm
- WG #9, WebEx
  - September 18<sup>th</sup> or 19<sup>th</sup>, 12:30 - 1:30 pm?



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Thank You!!

**Bicycle Advisory  
Committee**

**Carl Seifert**

*Transportation Planner*

[carl.seifert@ch2m.com](mailto:carl.seifert@ch2m.com)

CH2M: 512-249-3351

TxDOT: 512-374-5213

**ch2m**



*Public Transportation (PTN)*

**Teri Kaplan**

**Bonnie Sherman**

## Working Group Meeting #8

**ATTENDEES:** BAC Working Group: Billy Hibbs and DawnElla Rust;  
TxDOT-PTN: Teri Kaplan and Bonnie Sherman;  
CH2M: Carl Seifert and Nishant Kukadia  
**MEETING FORMAT:** In-person Meeting in Conference Room C at 200 E Riverside Dr. Austin, TX 78704  
 Members unable to join in-person were encouraged to attend via WebEx Conference Call (visual & audio access for all)  
**COPY TO:** TxDOT-PTN and file  
**NOTES PREPARED BY:** CH2M and TxDOT-PTN  
**DATE:** 08/22/17

## Meeting Objectives

- Update WG members on progress transitioning Preliminary Routes to Conceptual Routes
- Discuss considerations of BTTTS bikeway types and design criteria
- Update on stakeholder outreach activities

## Summary

### Introductions and overview

The meeting began 5 minutes late with Carl Seifert (CH2M) provided an overview of the agenda. Prior to starting, Billy Hibbs shared that he has had several discussions with people. Feedback has been unanimously positive. Upon Teri's request, Billy agreed that he would share information about these meetings at the October's BAC meeting.

### Transition of Preliminary Routes to Conceptual Routes

- Transition Steps- Carl reviewed the process utilized thus far (slides 3-16) and then asked for questions.
- Technical objectivity- DawnElla applauded the data-driven, objective process described.
- Economic Development – Billy applauded the phrase Carl used (the “journey is more important than the destination”) and the fact that keeping small towns on the conceptual routes remained a focus.
- Average Bicyclist? –
  - Billy questioned what an “average bicyclist” was and upon hearing Carl's definition, he requested that we use another term because he understood that to be a term associated with skill level as opposed to sensitivity to safety. He suggested a new term “risk-averse bicyclist” to communicate the message.
  - DawnElla suggested the usage of a FHWA breakdown of “A, B, or C Bicyclists”.
  - Carl stated that the project team will look for a more apt term to describe a bicyclist's safety and risk-taking tolerance.

- Billy suggested that using industry jargon or terminology that we need to define will make the BTTS network harder to “sell”, but we need to convey the risks appropriately.
- Carl reminded those in attendance that the final product would not be a long-distance bicycle map, but a study featuring a proposed route network on which bicycle accommodation improvement projects can improve conditions the coming decades.

### **Considerations of BTTS bikeway types and design criteria**

- Overview- Carl reviewed the bikeway types considered for inclusion within the BTTS network. He highlighted that the designs were not new and were acceptable under AASHTO’s Guide for the Development of Bicycle Facilities (2012) and Texas MUTCD.
- Rumble Strips- Billy asked for clarification on the mentioning of “rumble strips”.
  - Teri clarified that TxDOT puts rumble strips on every roadway but has recently issued guidance to have 10’ breaks between grooved sections to accommodate bicyclists.
- Wide Outside Shoulders- Billy opined that “wider is better”, but improvement costs should be a consideration. He also suggested that BTTS wide outside shoulder guidance should anticipate groups of long-distance bicyclists, riding two abreast.
  - Teri mentioned a Montgomery County design study which recommended a minimum of 6’ wide shoulders and 8’ to 10’ wide shoulders were desirable. Less than 6’ wide shoulders were only considered on a case by case basis depending on horizontal and vertical alignment.
  - Billy shared an example from the Tyler area on Tollroad 49. With a speed limit of 75 MPH an 8 foot shoulder is not wide enough for bicyclists. Indeed he suggested 10-12’ would be better, but an off-road shared use path separate from traffic for all BTTS routes would be preferred.
- Bicycle Lanes- Billy shared his concerns about bicycle lanes located adjacent to parking lanes. This concern, known as “dooring”, relates to the severe injury that can result from a bicyclist crashing into an open car door.
  - Carl mentioned that there are several design solutions that may mitigate dooring. For example, a second stripe designating the outside edge of the bicycle lane could be placed with an allowance for door openings. The additional striping would also affect costs.
- BAC concurrence- Teri suggested that it would appropriate for TxDOT to receive specific direction on bikeway type designs from the BAC.
  - Billy recommended that BTTS bikeway design be placed on the BAC agenda for the October meeting.

### **Update on stakeholder outreach activities**

- Advertising stakeholder engagement opportunity- Billy asked how we anticipated to get the word out regarding leaving input on the wikimap?
  - Carl responded that an email would be drafted to introduce the BTTS, the conceptual routes, and how to respond. This introduction email would include the Wikimap online input tool link. The email would be distributed to TxDOT District staff, MPOs (through TEMPO and TxDOT MPO Coordinators), and COGs (through TARC). We anticipate creating a separate interactive map for local governments to review, but they will be directed to share their feedback/comments with their MPO or COG contacts for them to input.
- DawnElla suggested a change in the order of appearance for several items in the legend.

## Action Items

### **CH2M/PTN:**

- Finish applying routing criteria to transition Preliminary Routes to Conceptual Routes
- Share Wikimap Online Input Tool with TxDOT District, MPO, and COG staff
- Seek TxDOT DES and TRF Division feedback on BTTS bikeway designs

### **Working Group:**

- Once the Wikimap Online Input Tool is available, encourage your MPO and COG contacts to provide their input

# TxDOT Bicycle Tourism Trails Study

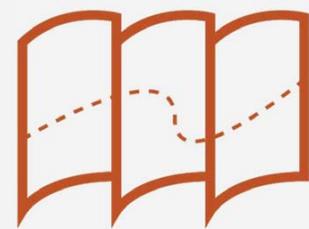
Working Group- Meeting #8

August 22, 2017

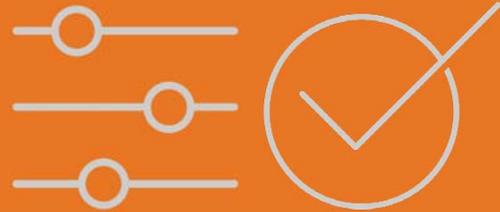
Discussion DRAFT

## Agenda

- Update on Transitioning Preliminary Routes to Conceptual Routes
- Considerations of BTTS bikeway types and design criteria
- Stakeholder outreach update
- Next steps
  - Future meeting topics and schedule
  - Action items



## Update on Transitioning Preliminary Routes to Conceptual Routes



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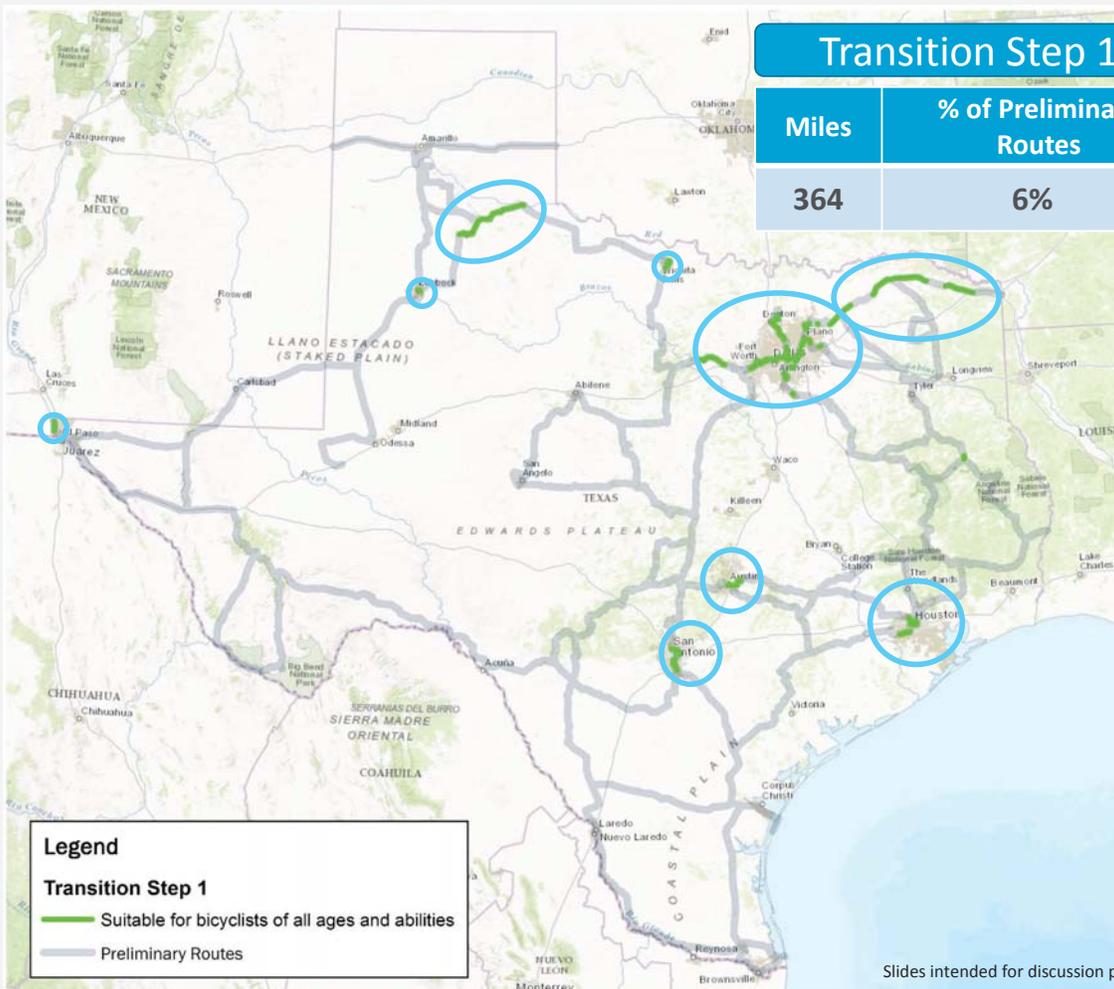
### Transition Step 1

Isolate Preliminary Route segments suitable for **bicyclists of all ages and abilities**

Identification of segments that either have:

1. Existing or funded shared use paths, or
2. Barrier separated bike lanes or cycle-tracks

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## Transition Step 2

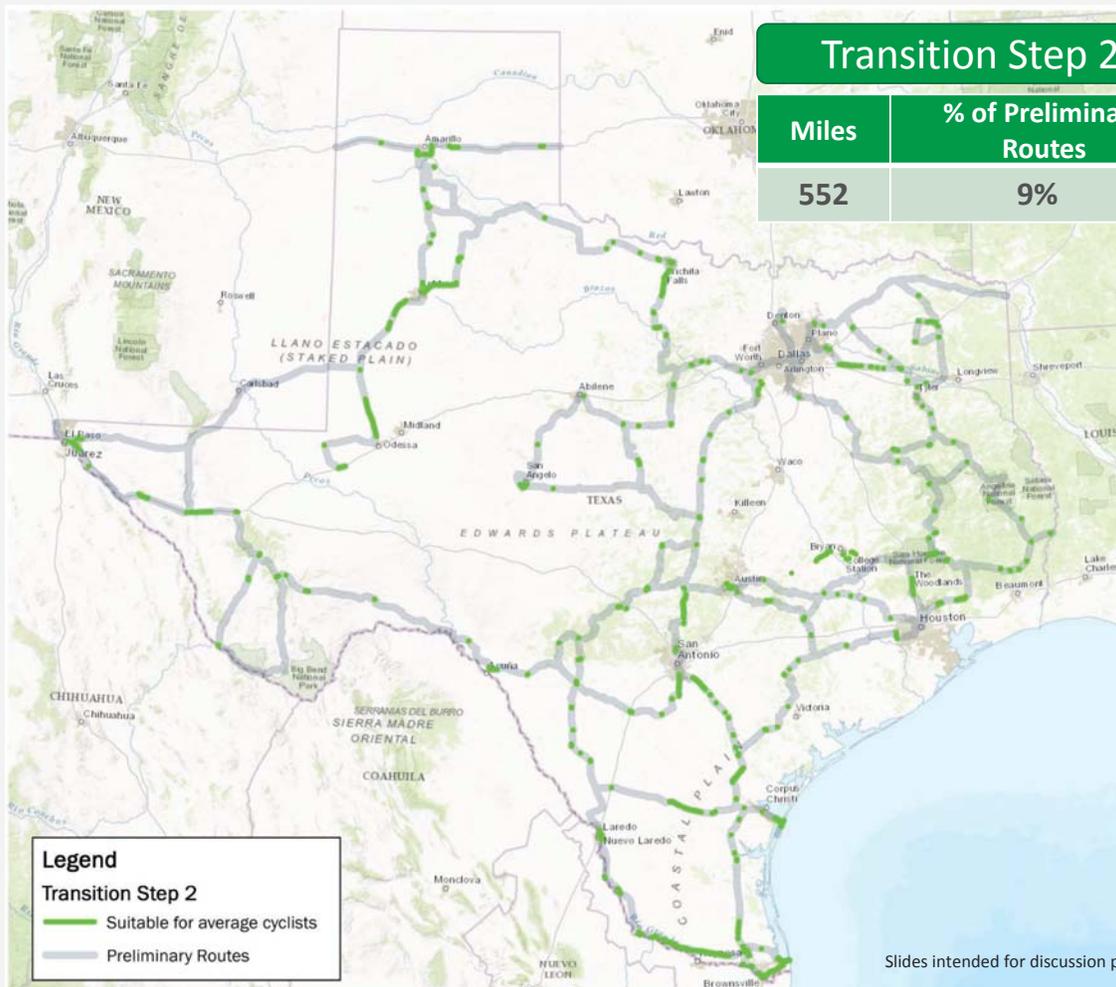
Isolate Preliminary Route segments suitable for **average bicyclists**

These segments either have:

1. Shoulder width 10 feet or wider with speeds greater than 45 mph, and less than 10% heavy truck traffic,
2. Shoulder width 10 feet or wider with speeds under 45 mph,
3. Shoulder width 7 to 9 feet with speeds under 45 mph, or
4. Shoulder width 4 to 6 feet with speeds under 35 mph

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### Transition Step 3

Evaluate gaps and make route modifications to link network with acceptable Conceptual Routes

#### Transition Step 3 Tasks:

1. Rank Texas roadways (where TxDOT data is available) based upon a set of roadway criteria (next slide).
2. Modify Preliminary Route segments if the current on-road conditions are not suitable for the average bicyclist
3. Identify segments not suitable for average bicyclists.

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## Roadway Ranking Criteria

#	Ranking Criteria	Metric	Type	Score
1	Lower speed roadways are more compatible with bicycling	55+ MPH	Weak	2
		35-55 MPH	Moderate	4
		<35 MPH	Strong	8
2	Low volume roads	5,000+ vehicles/lane	Weak	2
		3,000 – 5,000 vehicles/lane	Moderate	4
		<3,000 vehicles/lane	Strong	8
3	Avoid truck routes	350+ trucks/lane	Weak	2
		100- 350 trucks/lane	Moderate	4
		<100 trucks/lane	Strong	8
4	Roads with wide shoulders	0 – 5' shoulder width	Weak	2
		6 - 8' shoulder width	Moderate	4
		>8' shoulder width	Strong	8

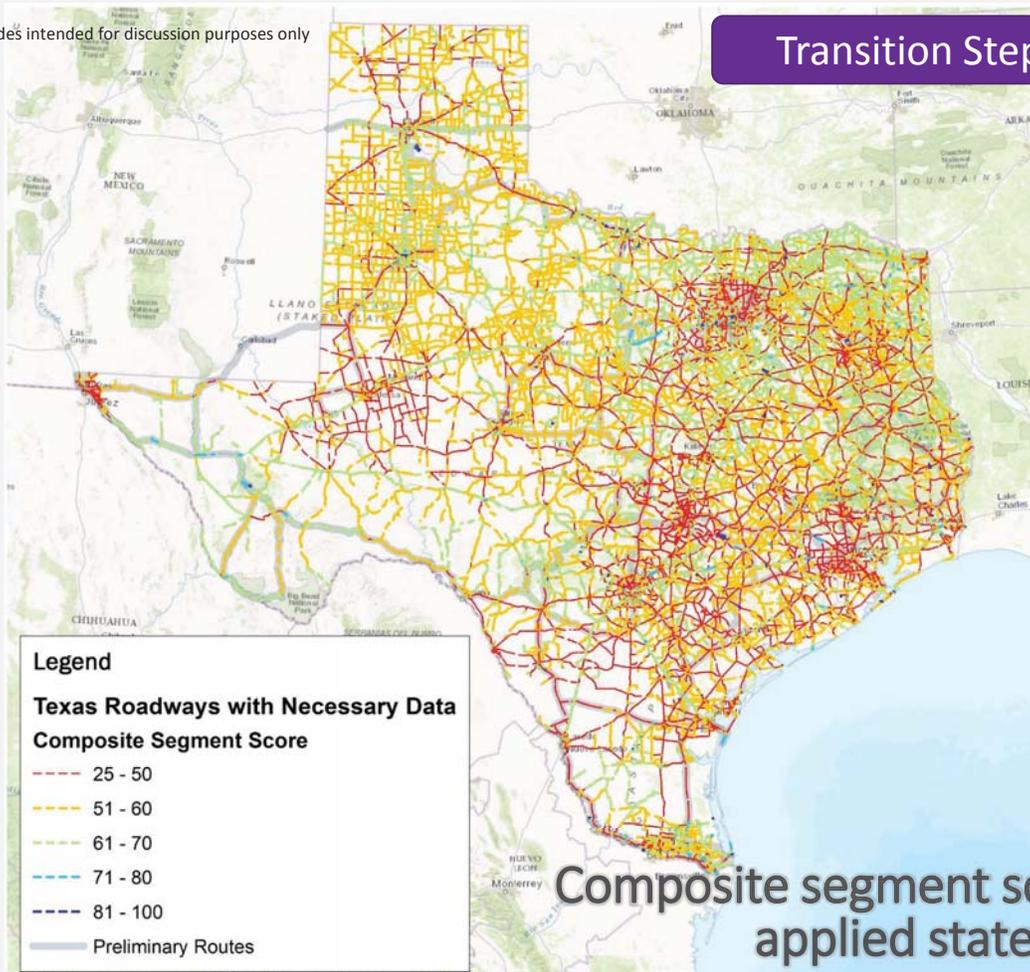
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## Composite segment score example

#	Ranking Criteria	Metric	Type	Score	
1	Lower speed roadways are more compatible with bicycling	55+ MPH	Weak	2	<b>2x5</b>
		35-55 MPH	Moderate	4	
		<35 MPH	Strong	8	
2	Low volume roads	5,000+ vehicles/lane	Weak	2	<b>8x2.5</b>
		3,000 – 5,000 vehicles/lane	Moderate	4	
		<3,000 vehicles/lane	Strong	8	
3	Avoid truck routes	350+ trucks/lane	Weak	2	<b>8x2.5</b>
		100- 350 trucks/lane	Moderate	4	
		<100 trucks/lane	Strong	8	
4	Roads with wide shoulders	0 – 5' shoulder width	Weak	2	<b>8x2.5</b>
		6 - 8' shoulder width	Moderate	4	
		>8' shoulder width	Strong	8	

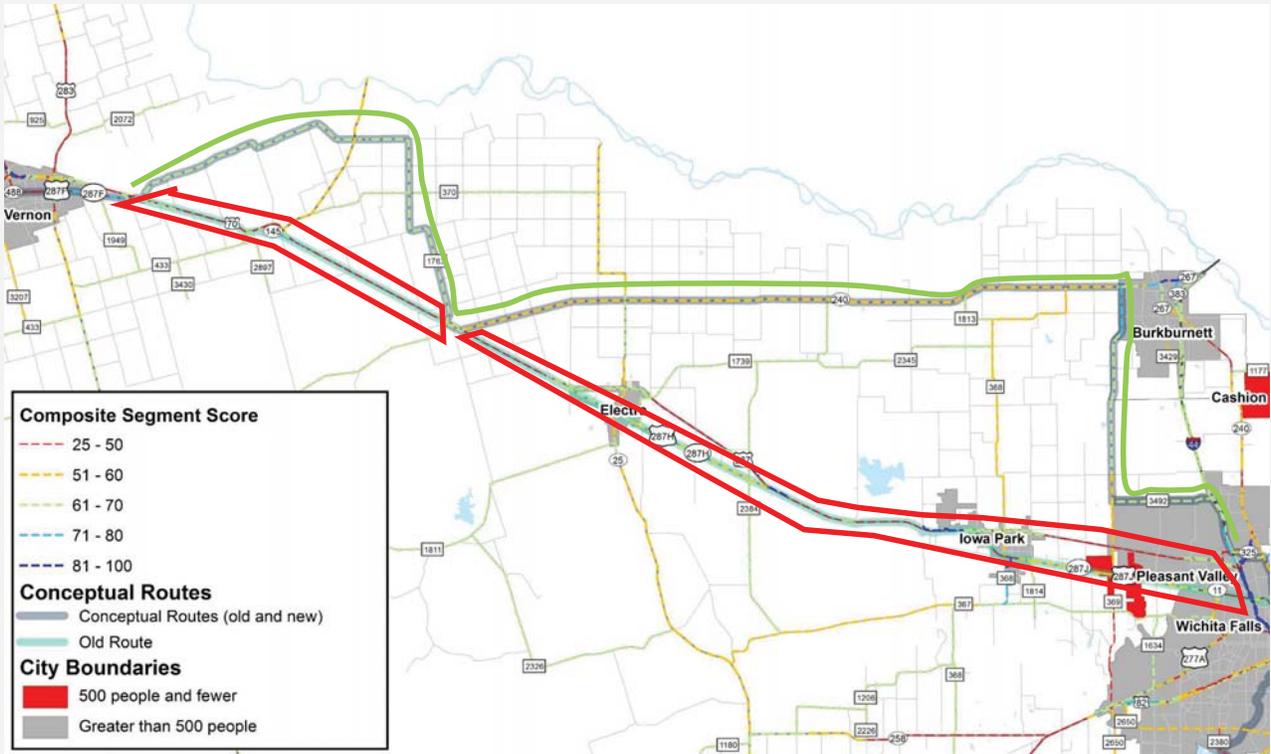
Example Composite Score = 70

10



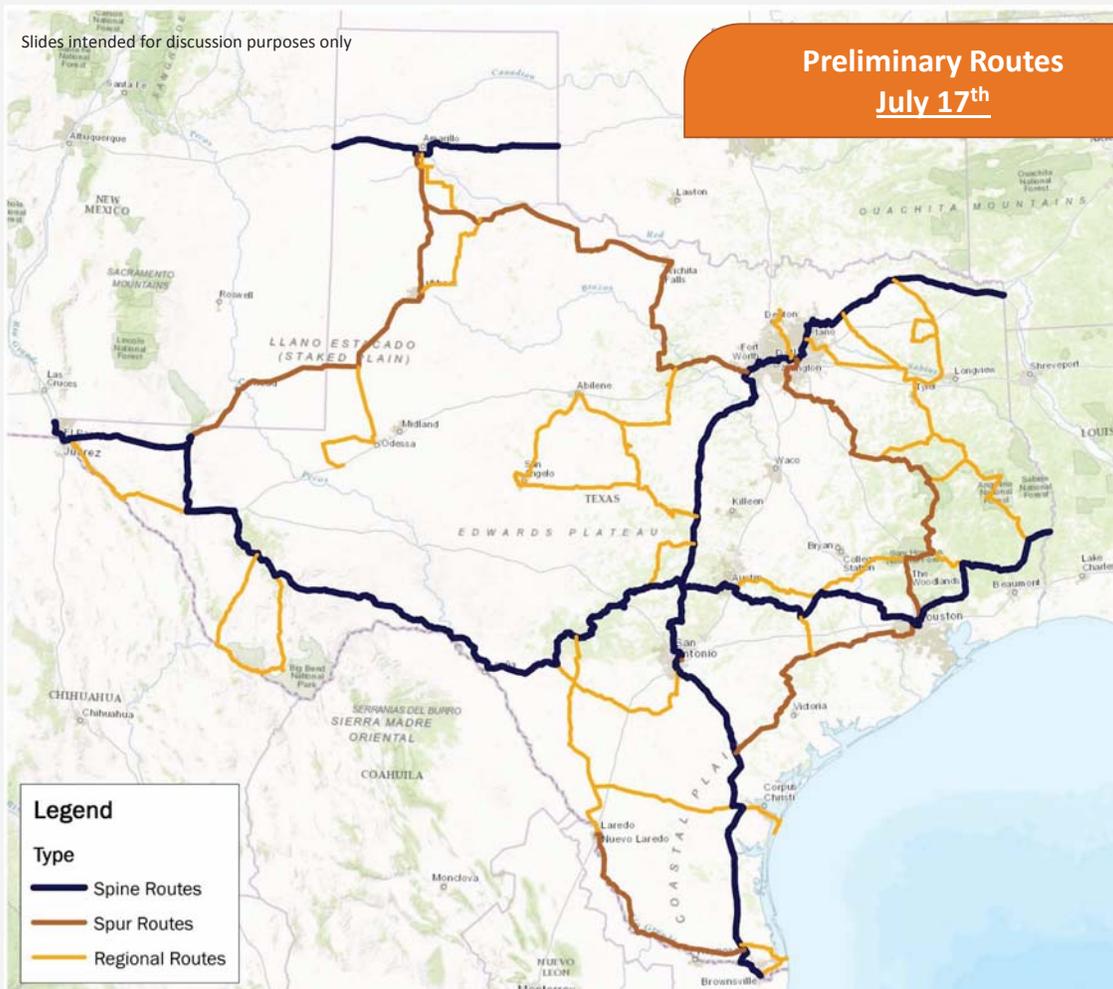
Composite segment scores applied statewide

# Route modification example



Slides intended for discussion purposes only

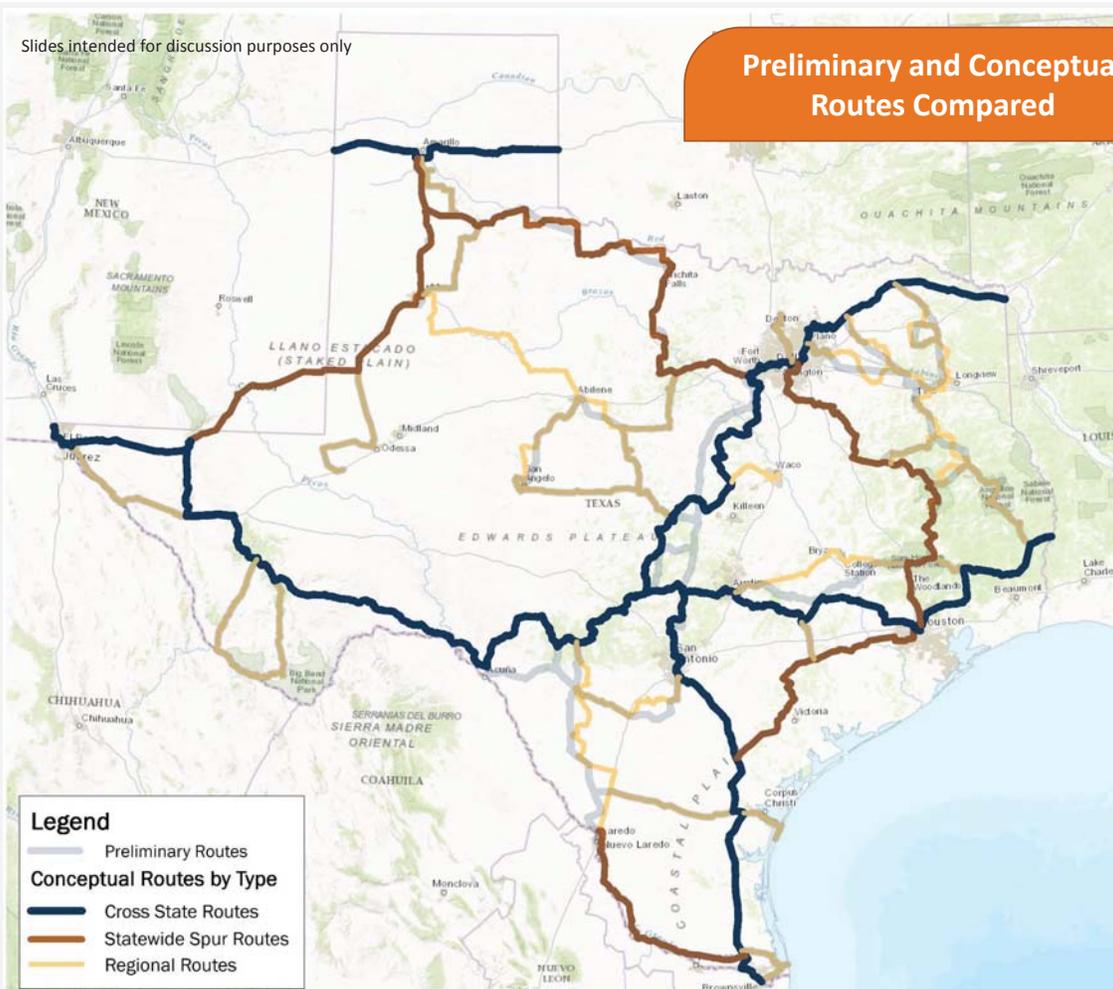
### Preliminary Routes July 17<sup>th</sup>



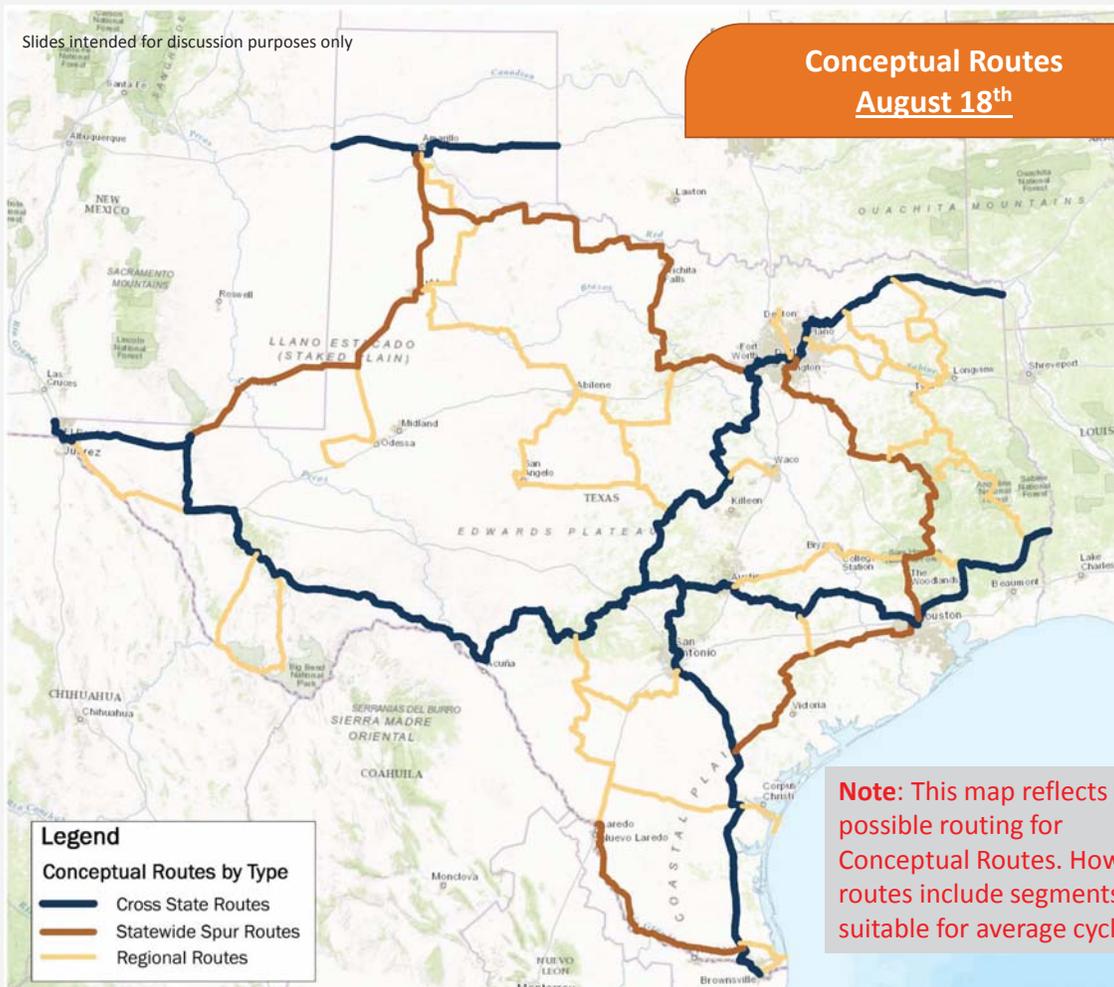
13

Slides intended for discussion purposes only

### Preliminary and Conceptual Routes Compared



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**Note:** This map reflects best possible routing for Conceptual Routes. However, routes include segments not suitable for average cyclists.

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## Once transition evaluation is complete, Conceptual Routes will include:

- Segments suitable for **all ages and abilities** bicyclists
  - Shared use paths and barrier separated bike lanes
- Segments mostly **suitable for average** bicyclists
- Segments **not suitable for average** bicyclists



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# Bikeway Types and Design Criteria



17

## Review of bikeway types and design criteria considerations

BTTTS recommended bikeway types and design criteria:

- Wide outside shoulders
- Shared use path/Sidepath
- Bike lane/Buffered bike lane



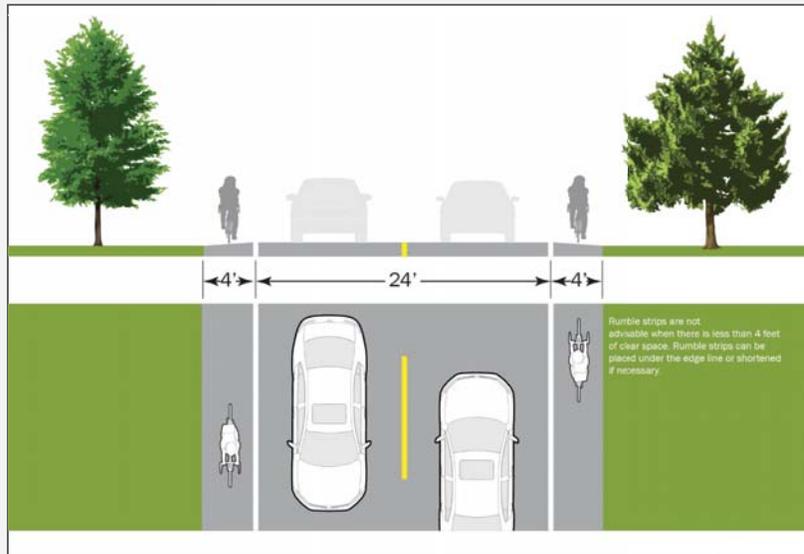
All proposed design standards follow AASHTO's Guide for the Development of Bicycle Facilities (2012) and the Texas MUTCD.

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## Outside shoulders width consideration: *AASHTO guidance 4' minimum*

- Rural roadway section
- No curb and gutter
- Sidewalks are not common
- Concerns:
  - Rumble strip placement
  - Maintenance
  - Intersection and driveway conflict points
  - No physical separation from motor vehicle traffic
  - Traffic sometimes exceeds posted speed limit



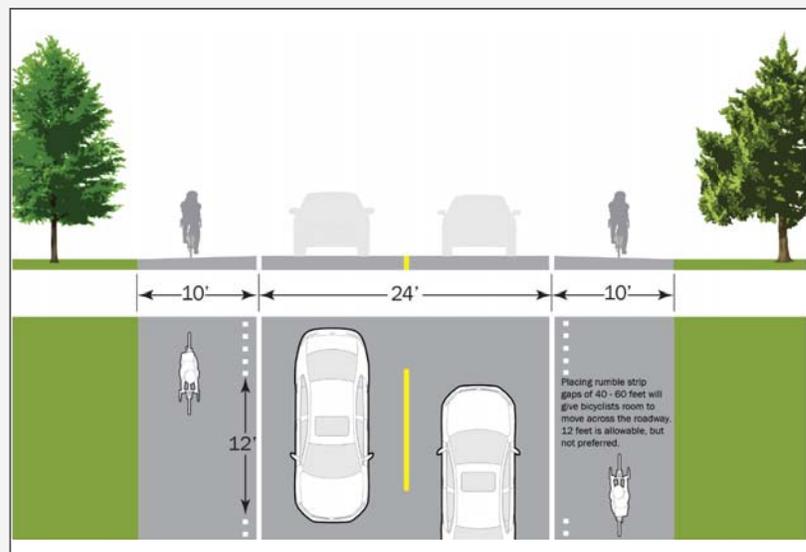
**FOR DISCUSSION**  
**PURPOSES ONLY**

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Layout is conceptual, actual measurements and placements must conform with TxDOT design guidelines and Texas MUTCD

## Wide outside shoulders width consideration: *8' or wider*

- Rural roadway section
- No curb and gutter
- Sidewalks are not common
- Concerns:
  - Rumble strip placement
  - Maintenance
  - Intersection and driveway conflict points
  - No physical separation from motor vehicle traffic



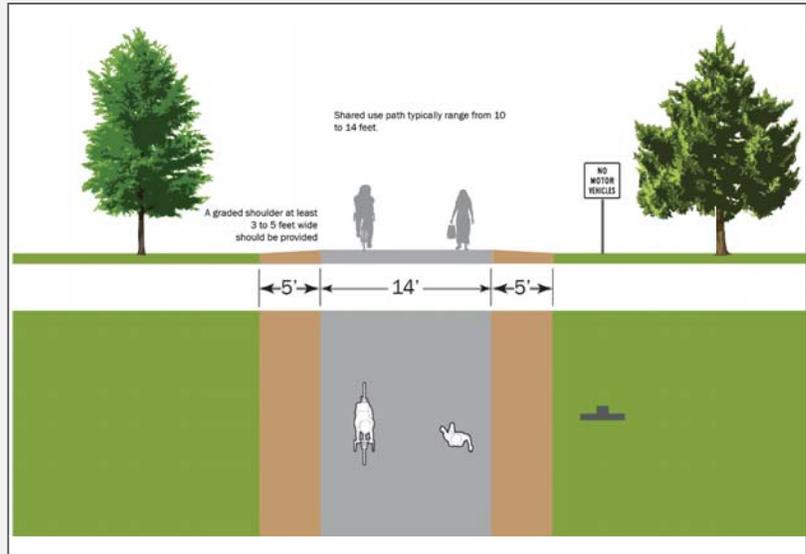
**FOR DISCUSSION**  
**PURPOSES ONLY**

20

Layout is conceptual, actual measurements and placements must conform with TxDOT design guidelines and Texas MUTCD

# Shared Use Path

- Used in rural and urban areas
- Within an independent ROW.
- Concerns:
  - Intersection and driveway conflict points
  - Maintenance
  - Plan for other modes/users such as pedestrians, roller blades, etc.
  - Unpaved surfaces not suitable for road bicycle tires



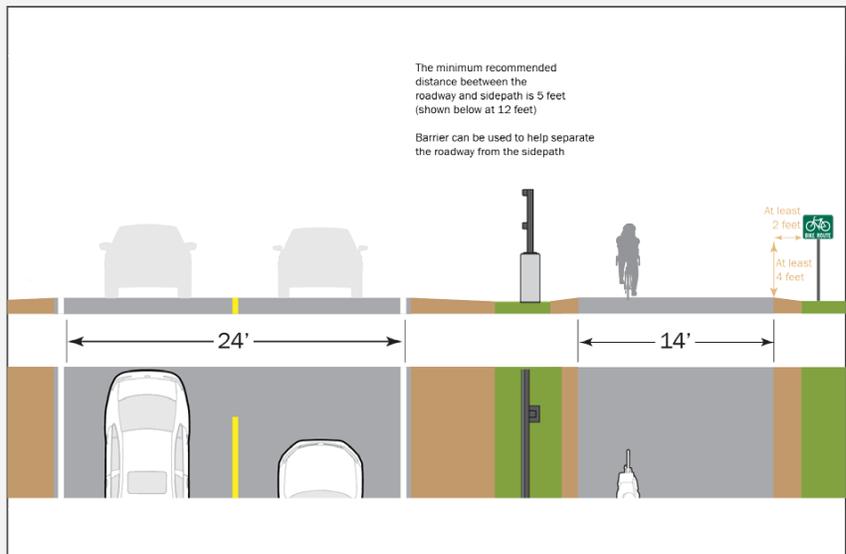
**FOR DISCUSSION  
PURPOSES ONLY**

21

Layout is conceptual, actual measurements and placements must conform with TxDOT design guidelines and Texas MUTCD

# Sidepath

- Used in rural and urban areas
- Off-street facility within highway ROW
- Concerns:
  - Intersection and driveway conflict points
  - Maintenance
  - Plan for other modes/users such as pedestrians, roller blades, etc.



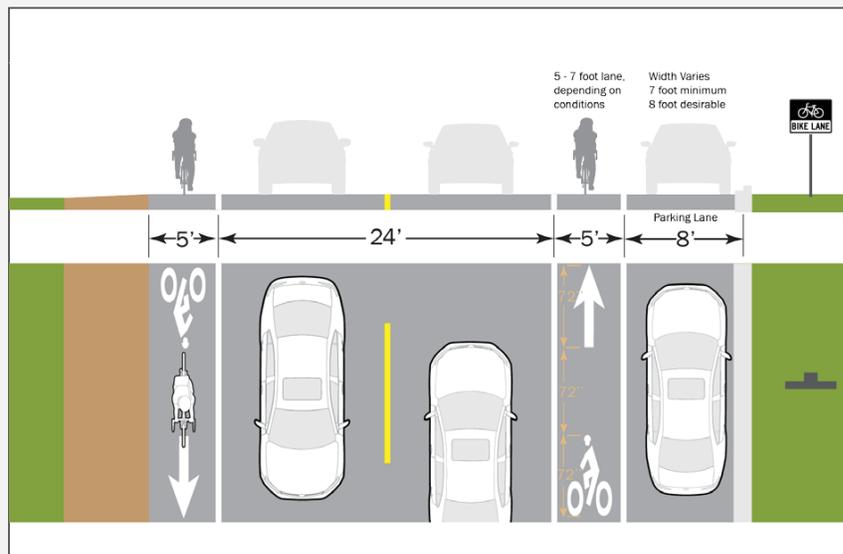
**FOR DISCUSSION  
PURPOSES ONLY**

22

Layout is conceptual, actual measurements and placements must conform with TxDOT design guidelines and Texas MUTCD

## Bicycle lane

- Used in urban areas
- 5 to 7 feet of dedicated ROW for bicycle use
- Concerns:
  - Intersection and driveway conflict points
  - Maintenance
  - No physical separation from motor vehicle traffic



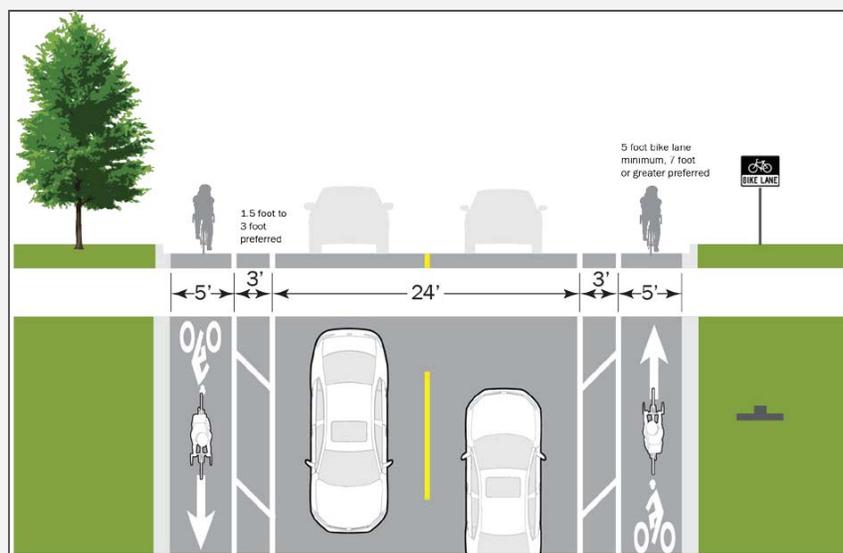
**FOR DISCUSSION  
PURPOSES ONLY**

23

Layout is conceptual, actual measurements and placements must conform with TxDOT design guidelines and Texas MUTCD

## Buffered Bicycle lane

- Used in urban areas
- 5 to 7 feet of dedicated bicycle ROW
- 1.5 to 3 feet of buffered space identified by road striping
- Concerns:
  - Intersection and driveway conflict points
  - Maintenance
  - No physical separation from motor vehicle traffic



**FOR DISCUSSION  
PURPOSES ONLY**

24

Layout is conceptual, actual measurements and placements must conform with TxDOT design guidelines and Texas MUTCD

# Stakeholder Outreach



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## Stakeholder Outreach Update

### Informational Outreach

#### *MPO and Local Governments*

- August 16<sup>th</sup> – Presentation to NCTCOG’s Bicycle and Pedestrian Advisory Committee



### Input Opportunities

#### *MPO, COG, and TxDOT District*

- Wikimap Online Input Tool
  - Distribution process:
    - Distribute participation request with weblink through TEMPO and TARC, and directly to TxDOT-District TP&D Directors
  - Anticipated LIVE dates: August 28<sup>th</sup> – September 25<sup>th</sup>

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# Wikimap online input tool - Legend

Welcome to the **Bicycle Tourism Trails Study** Online Input Tool! For guidance on how to use the Online Mapping Tool, please click on 'About & Help' and 'Legend' in the gray menu bar. The Online Mapping Tool allows you to:

- Explore Preliminary Discussion Routes
- Place comment pins and/or upload photos directly on the map
- Click on an existing pin to comment, agree, or disagree

To access this information later, go to 'About & Help' and click on 'Instructions'.

## Legend and How-To Guide

### Draft Texas Bicycle Tourism Trail Routes

Statewide Routes

Regional Routes

### Google Bicycling

Trails

Dedicated lanes

Bicycle-friendly roads

Dirt/unpaved trails

You can **drag and drop** pins to identify:

 Bicycle destination

 Only for fearless bicyclists

 Not suitable for bicycle use

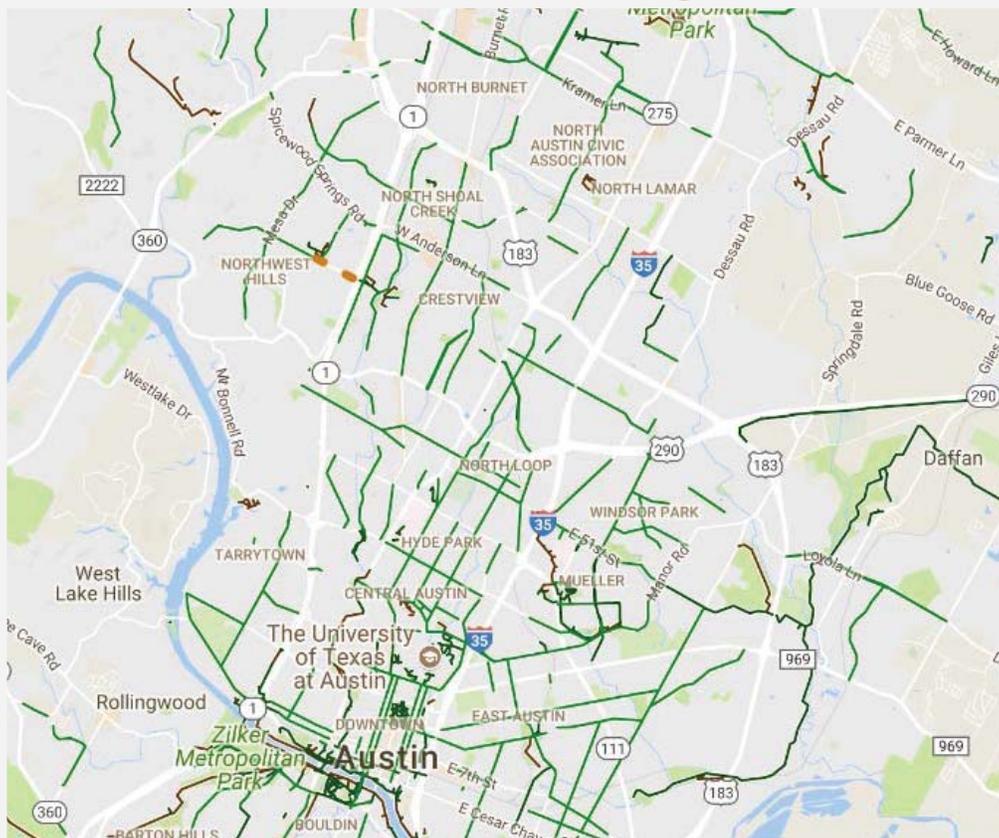
You can **draw routes** to identify:

 Proposed route change

 Connecting bikeway

You can also **agree** or **disagree** with existing pins or routes by clicking on a pin or route and clicking 'Show Comments/Survey'

# Wikimap online input tool – Google content



# Navigation and Commenting Tools

**Texas Bicycle Tourism Trails Study** **Online Mapping Tool**

PTN Bicycle and Pedestrian Program TxDOT's Bicycle Advisory Committee To see the map legend, please click on 'About & Help' in the gray menu bar.

**Texas Bicycle Tourism Trails Study** About & Help ▾ Draw a Route Change Leave a Comment

Map Satellite

+

-

### Draw a Route Change

Click once to start. Click to add points along the route. Double Click at the endpoint. Then press Submit to save.

Connecting bikeway

Proposed route change

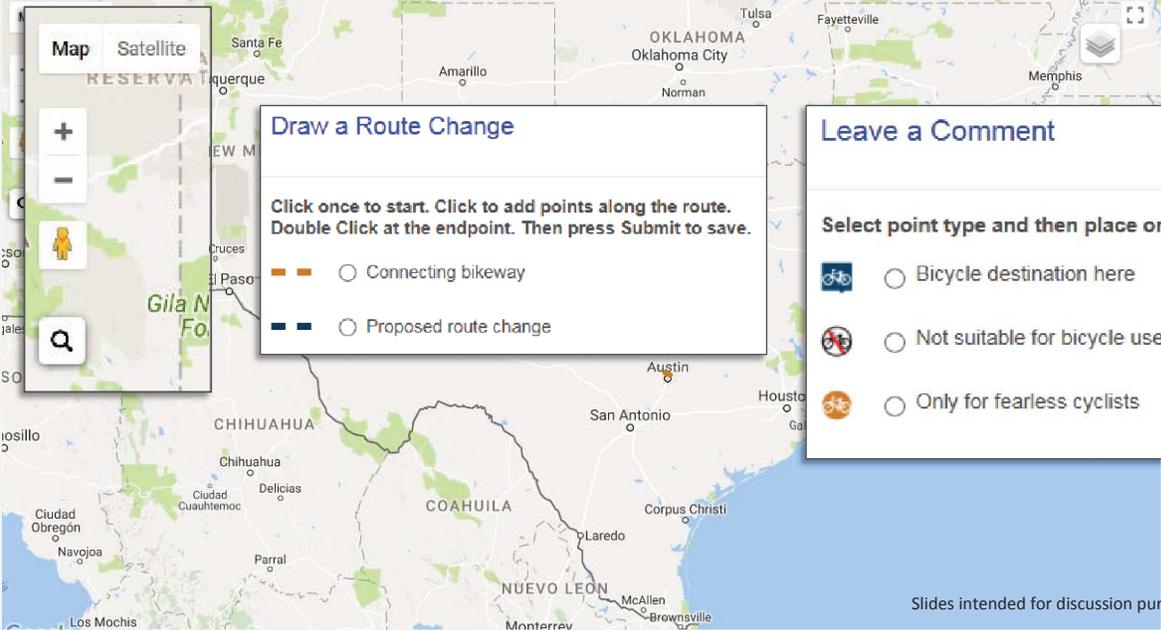
### Leave a Comment

Select point type and then place on map.

Bicycle destination here

Not suitable for bicycle use

Only for fearless cyclists



Slides intended for discussion purposes only

## Questions



## Action Items

### TxDOT-PTN & CH2M:

- Finish applying routing criteria to transition Preliminary Routes to Conceptual Routes
- Share Wikimap Online Input Tool with TxDOT District, MPO, and COG staff
- Seek TxDOT DES and TRF Division feedback on design criteria



### Working Group:

- Once the Wikimap Online Input Tool is available, encourage your MPO and COG contacts to provide their input

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## Future Working Group Meetings

### September topics:

- Review interim feedback on Conceptual Routes from Local and Regional stakeholders
- Discuss design criteria revisions
- Stakeholder outreach update



### Next meetings:

- WG #9, WebEx
  - September 19<sup>th</sup>, 12:30 - 1:30 pm?
- WG #10, WebEx
  - October 17<sup>th</sup>, 12:30 - 1:30 pm?

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Thank You!!

**Bicycle Advisory  
Committee**

**Carl Seifert**

*Transportation Planner*

[carl.seifert@ch2m.com](mailto:carl.seifert@ch2m.com)

CH2M: 512-249-3351

TxDOT: 512-374-5213

**ch2m**



*Public Transportation (PTN)*

**Teri Kaplan**

**Bonnie Sherman**



## Working Group Meeting #9

**ATTENDEES:** BAC Working Group: Joseph Pitchford, Bobby Gonzales, Shawn Twing, Karla Weaver, Billy Hibbs and DawnElla Rust;  
TxDOT-PTN: Bonnie Sherman;  
CH2M: Carl Seifert and Stephanie Lind

**MEETING FORMAT:** Conference Call via WebEx (visual & audio access for all)  
Prior to the meeting, a copy of the PowerPoint presentation (in pdf form) and agenda were distributed via email to the working group members.

**COPY TO:** TxDOT-PTN and file

**NOTES PREPARED BY:** CH2M and TxDOT-PTN

**DATE:** 09/29/17

## Meeting Objectives

- Review of stakeholder outreach/wikimap feedback
- Discuss considerations of BTTTS bikeway types and design criteria

## Summary

### Introductions and overview

All Working Group members introduced themselves, then Carl Seifert (CH2M) provided an overview of the agenda.

### Review of WikiMap Feedback

Carl provided an update on the feedback from the WikiMap tool. The tool went live on September 5, 2017 and will close September 29, 2017 (today). Feedback has been collected from the following areas so far:

- Houston
- Corpus Crhisti
- Bryan/College Station
- Tyler
- Sherman-Denison
- Midland/San Angelo
- San Antonio
- Lufkin
- El Paso
- Waco/Temple
- Texarkana

To date, the study team has received the following comments

- New bicycle destination – 39 comments
- Route not suitable for bicycle use – 15 comments
- Route only for fearless cyclists – 14 comments
- Recommended route change – 22 comments
- Significant route connection – 26 comments

Carl showed examples of specific feedback received from several urbanized areas including: Houston, Bryan-College Station, Sherman-Denison. Additionally, he discussed how this stakeholder feedback will go into modifying the BTTS routes.

#### Discussion:

##### *Sherman-Dennison route modifications*

- The group discussed extending a route from Paris, TX, into Sherman-Denison and continuing west to Wichita Falls. Several members appreciated the connectivity to the NETT via Paris.
- Joseph suggested that the NETT board may have knowledge about the status of an apparently abandoned rail line.
- Karla highlighted that the southern end of the suggested route modifications doesn't quite align with the NCTCOG envisioned facilities.
- The Carpenters Bluff bridge was identified as a potential Red River crossing into Oklahoma. While there are no bikeway accommodations on the Oklahoma side of the border, the location provides north-south access between the two states.

##### *Other discussion*

- CH2M and TxDOT will continue reaching out to WikiMap respondents for clarification, GIS files and bike plans. Conceptual routes will be modified as necessary. The routes will be shown to the BAC during the October meeting and at that time the BAC can consent or approve those routes. The hope is to have draft study materials ready by spring 2018.
- Carl clarified that the BTTS is just a study, which will result in a sample application of the qualitative and quantitative route location criteria. The conceptual routes resulting from the study will still need to be refined and finalized in another planning effort.

## Typical Sections

CH2M and PTN met with TxDOT's Design division (DES) to go over the typical sections. The project team provided DES with graphics depicting the following bicycle design accommodations:

- 8' or wider outside shoulders
- Shared use path/side path
- Bicycle lane
- Buffered bike lane

DES requested an emphasis be placed on all BTTS recommended bikeways that stated:

"All on-road bicycle accommodations within state-maintained right-of-way must meet or exceed minimum requirements in TxDOT's Roadway Design Manual for the functional classification of that roadway segment."

Additionally, AASHTO's Guide for the Development of Bicycle Facilities (2012) and the Texas MUTCD remain important design guidance for future accommodations.

The design guidelines represent a minimum. If a project would go above and beyond the minimum required, they would not need a design exception. If the proposed design does not meet the minimum amounts required, they would need a design exception.

### 8' or wider outside shoulders

The workgroup discussed the need for a “clear width” outside of the rumble strip. They also discussed whether rumble strips provide protection. The group discussed the use of flexible delineators along bikeways. It was suggested that these delineators could provide advertising/route identification as well as an additional safety feature for cyclists. Bonnie noted that there are cost and maintenance issues with the use of flexible delineators. The project team will look into delineator options that could be used along Texas Tourism Trails. Additionally, the project team will add notes reflecting the placement of rumble strips in relation to the clear width.

### Shared Use Path

This accommodation graphic illustrates a 10 foot path although a wider facility would be recommended in many places. The design should support a long-lasting facility that can be easily maintained. The workgroup discussed the need for a facility that both attracts tourists but also can be used by all ages and abilities. The workgroup also noted that TxDOT does not typically maintain shared use path facilities while Texas Parks and Recs does maintain these facilities. It will be important to coordinate with them and local government entities.

Working Group members mentioned that shared use paths may provide relief/diversity for long-distance cyclists as well as an opportunity to attract underserved cyclists.

### Sidepath

This accommodation graphic illustrated a 5-foot distance from the roadway right-of-way, although a larger distance would be better. Workgroup members noted that a sidepath would be ideal in a number of areas, particularly if right-of-way is already required.

### Bicycle lane

This accommodation graphic illustrated a bicycle lane next to a parking lane as well as a bicycle lane not adjacent to on-street parking. This type of accommodation is probably most common in urbanized areas.

### Buffered Bicycle Lane

The buffered bicycle lane is a more typical application of flexible delineators. This accommodation graphic illustrated the separation with pavement markings but other items could be used including concrete barrier, planters, delineators, etc.

## Surface Types

Long-term, a hard surface would be preferred for the ultimate network. However, over the short- to mid-term, there would likely be various surface treatments used. Different surface treatments will attract different users from inside and outside Texas. Often a bikeway will start out as gravel and over time if use and money warrants, the bikeway would be paved.

As the study continues, cost estimates based on the type of bikeway provided will be developed.

## Action Items

**TxDOT-PTN & CH2M** will continue to:

- Complete review of Wikimap input
- Continue modifying Conceptual Routes based on stakeholder feedback and additional data
- Revise bikeway design criteria
- Internally review and coordinate bikeway design criteria, bikeway cost estimates and USBRS route development procedures

**Working Group** were asked to think about:

- How should TxDOT and partners prioritize BTTS Route Network development?

### Discussion:

The workgroup discussed when this study should be presented to administration and what resource constraints the TxDOT has right now in response to Hurricane Harvey. Maybe this study should be presented at a later date. Bonnie responded that there may be a possibility for a presentation to be made to the commission upcoming.

# TxDOT Bicycle Tourism Trails Study

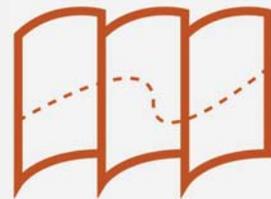
Working Group- Meeting #9

September 29, 2017

Discussion DRAFT

## Agenda

- Wikimap/Stakeholder outreach update
- Discussing BTTS bikeway types and design criteria
- Next steps
  - Future meeting topics and schedule
  - Action items



## Wikimap/Stakeholder Outreach UPDATE



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## Wikimap Online Input Tool Update

*LIVE from Sept 5<sup>th</sup> to 29<sup>th</sup>*

Feedback heard from the following areas:

- Houston
- Corpus Christi
- Bryan/College Station
- Tyler
- Sherman-Denison
- Midland/San Angelo
- San Antonio
- Lufkin
- El Paso
- Waco/Temple
- Texarkana



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Texas Bicycle Tourism Trails Study Welcome

Wikimap Online Input Tool- Feedback

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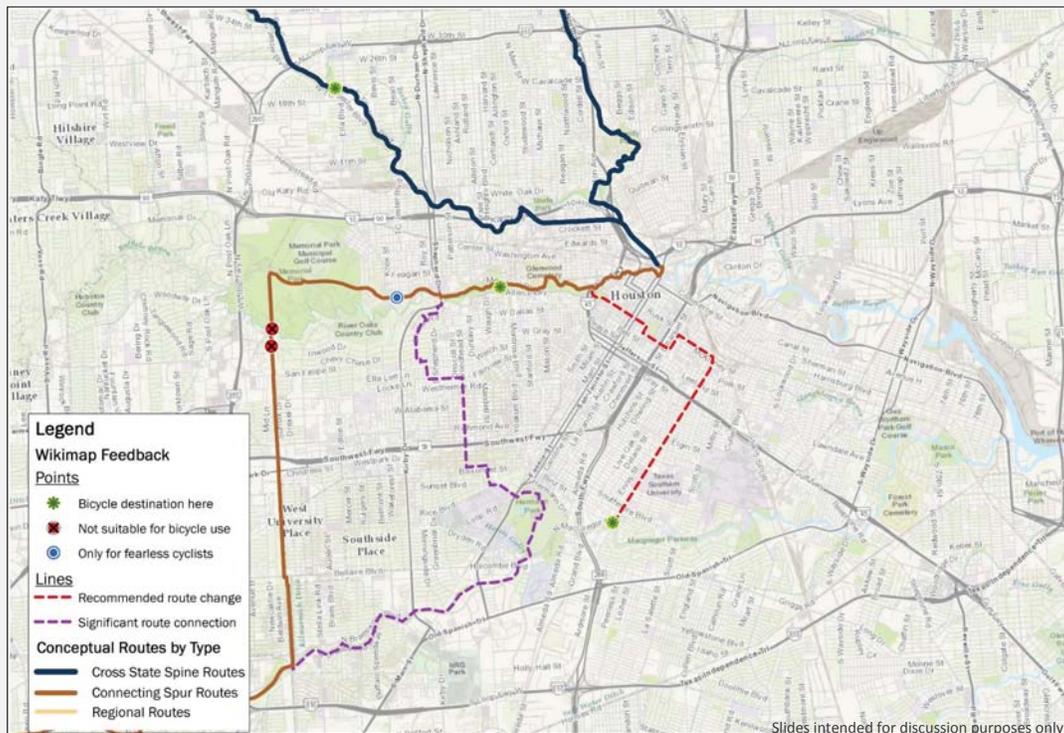
## Wikimap Online Input Tool- Written comments

Comment Type	Comment Category	Number	Totals
Point	New bicycle destination	39	68
	Route not suitable for bicycle use	15	
	Route only for fearless cyclists	14	
Line	Recommended route change	22	47
	Significant route connection	26	

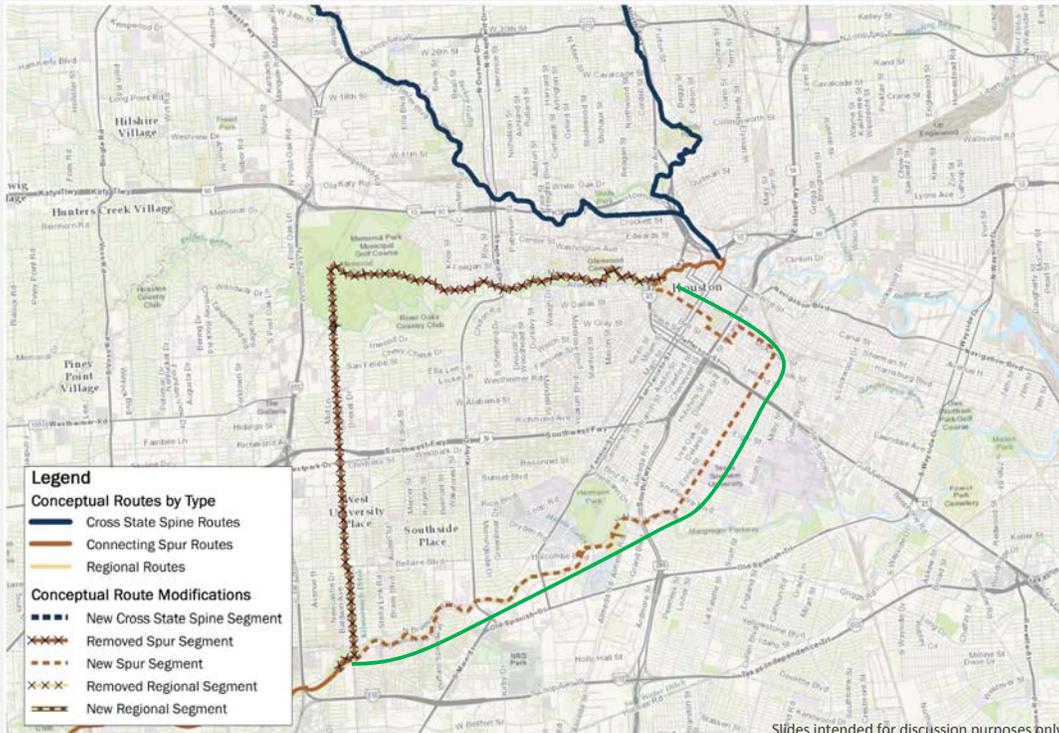
## Example: Houston - Conceptual Routes



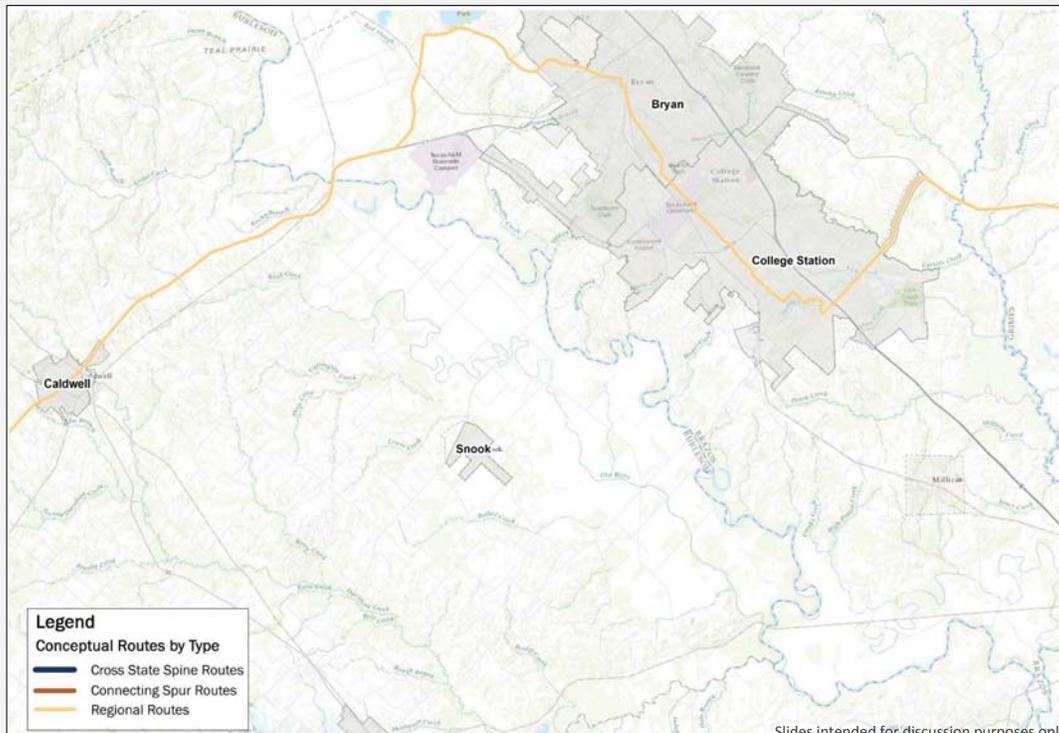
## Example: Houston – Wikimap Feedback



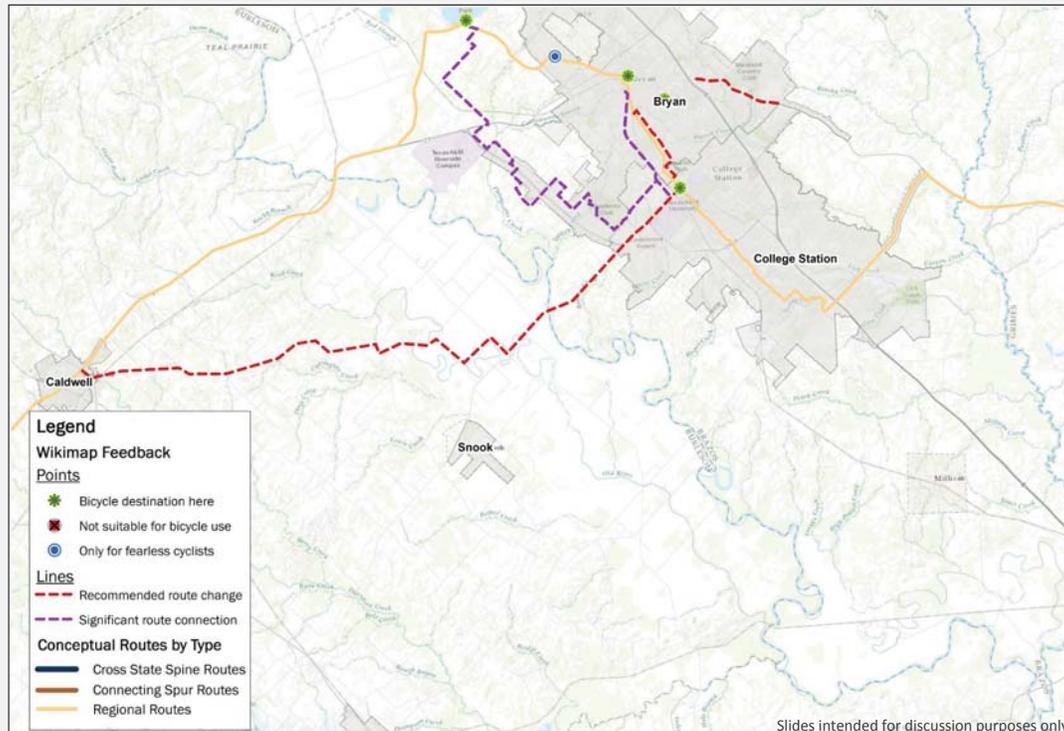
## Example: Houston – Proposed Route Changes



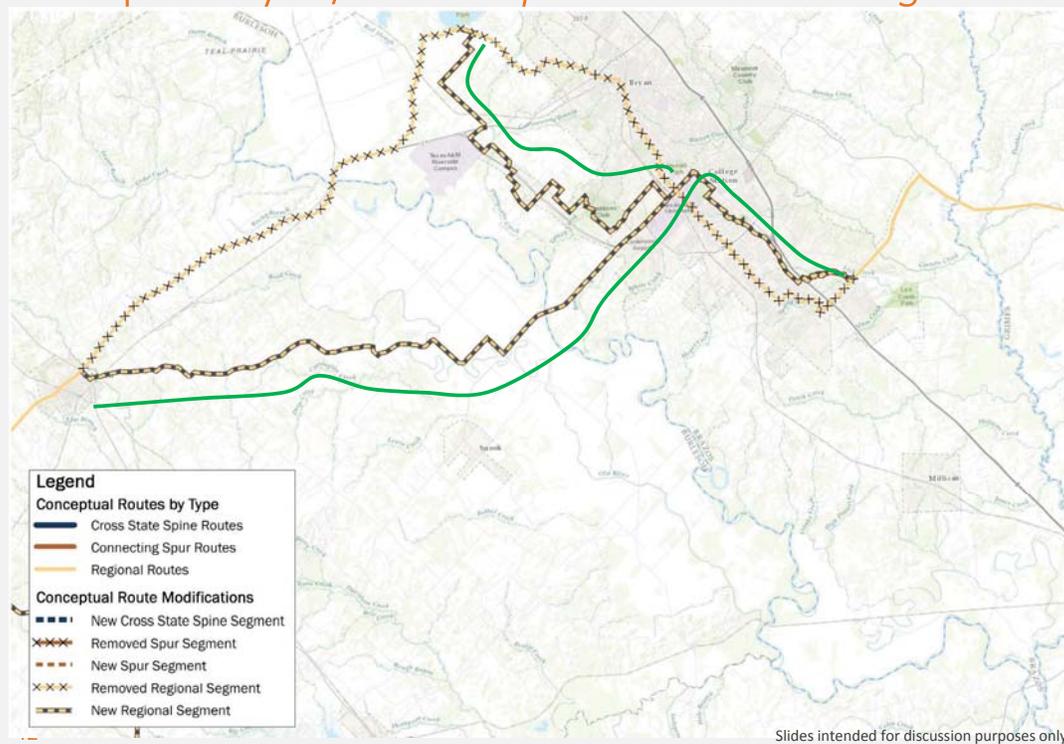
## Example: Bryan/CS – Conceptual Routes



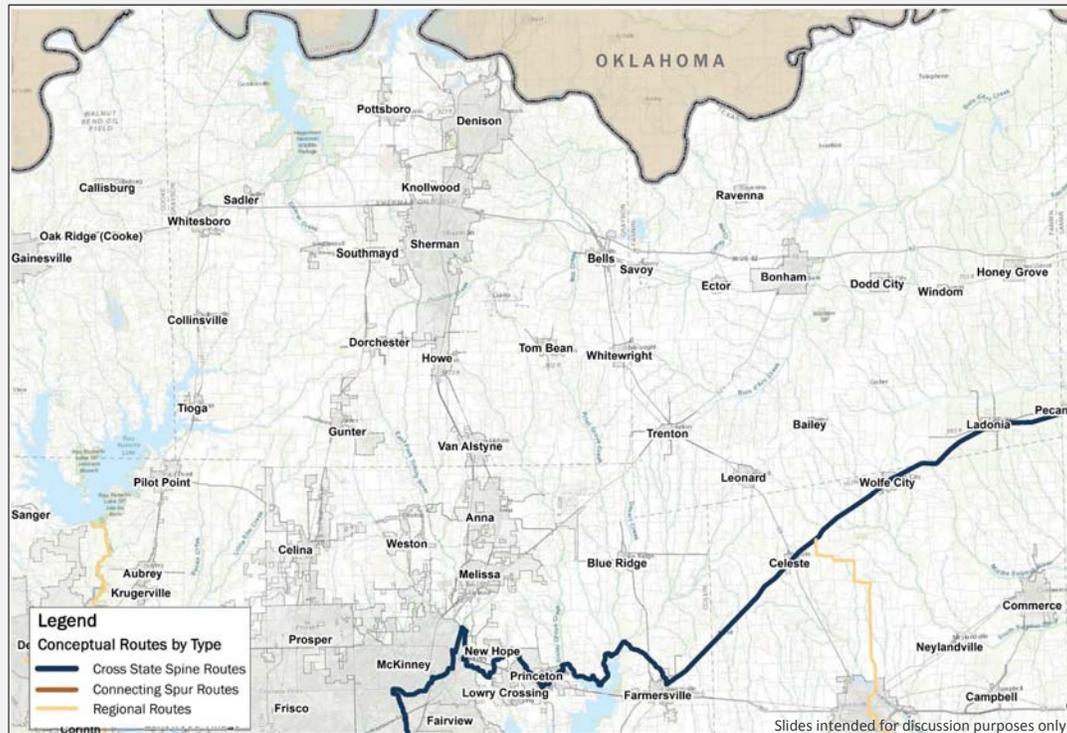
## Example: Bryan/CS – Wikimap Feedback



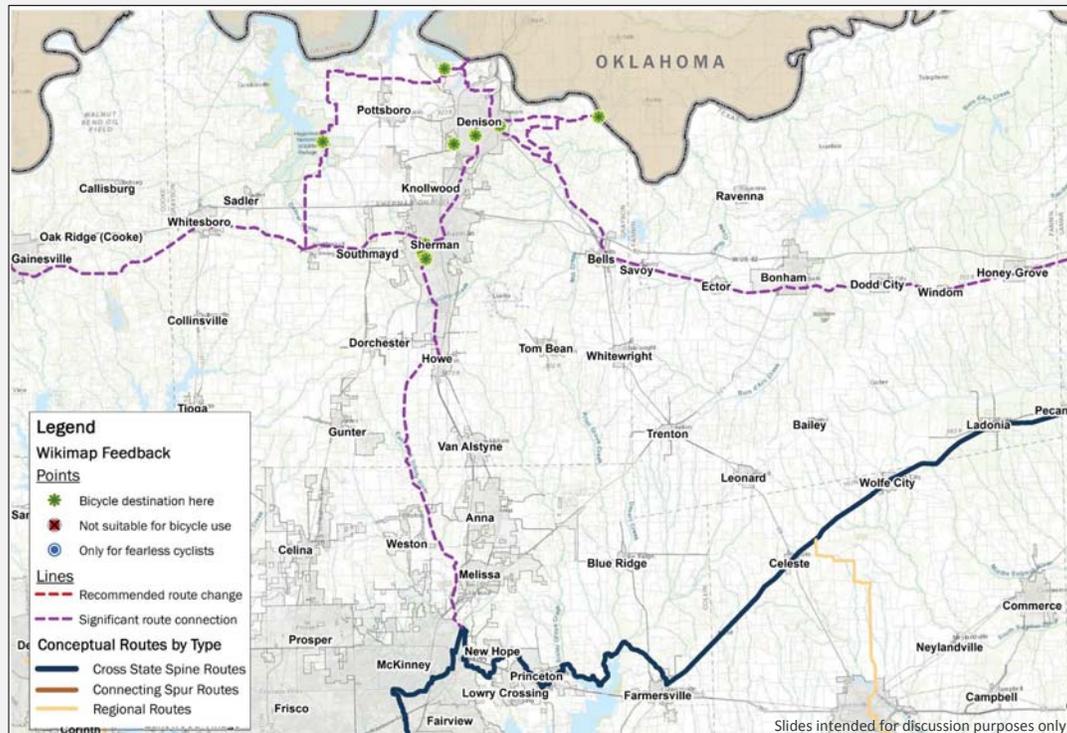
## Example: Bryan/CS – Proposed Route Changes



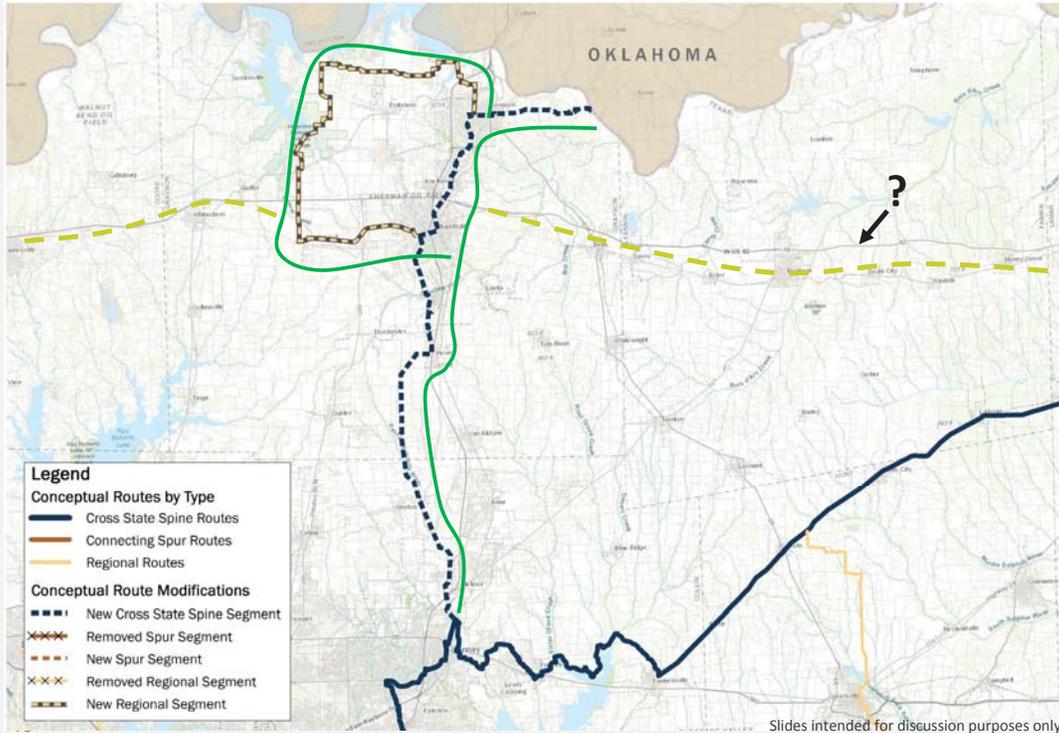
## Example: Sherman-Denison - Conceptual Routes



## Example: Sherman-Denison – Wikimap Feedback



## Example: Sher-Den – Proposed Route Changes



Carpenter's Bluff  
Bridge over Red River

BTTB Border with Oklahoma

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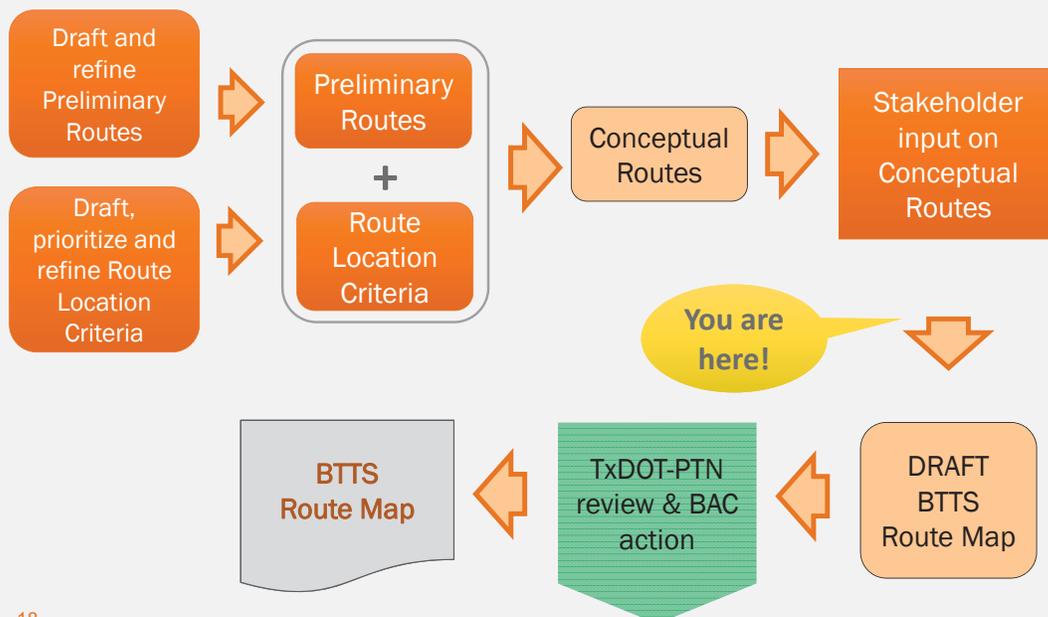
## BTTTS Route Network: Next Steps

1. Continue reaching out to wikimap respondents for clarification, GIS files, and bike plans
2. Document knowledge/comments/concerns from stakeholders.
3. Continue modifying “Conceptual Routes” where necessary
4. Seek consent/approval from BAC during October Meeting



## Interim Product Overview – Proposed BTTTS Route Map

Working Group  
and Project Team



## Bikeway Types and Design Criteria



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## BTTs recommended bikeway types and design criteria

- 8' or wider outside shoulders
- Shared use path/ Sidepath
- Bicycle lane
- Buffered bike lane



All proposed design standards follow TxDOT's Roadway Design Manual, AASHTO's Guide for the Development of Bicycle Facilities (2012) and the Texas MUTCD.

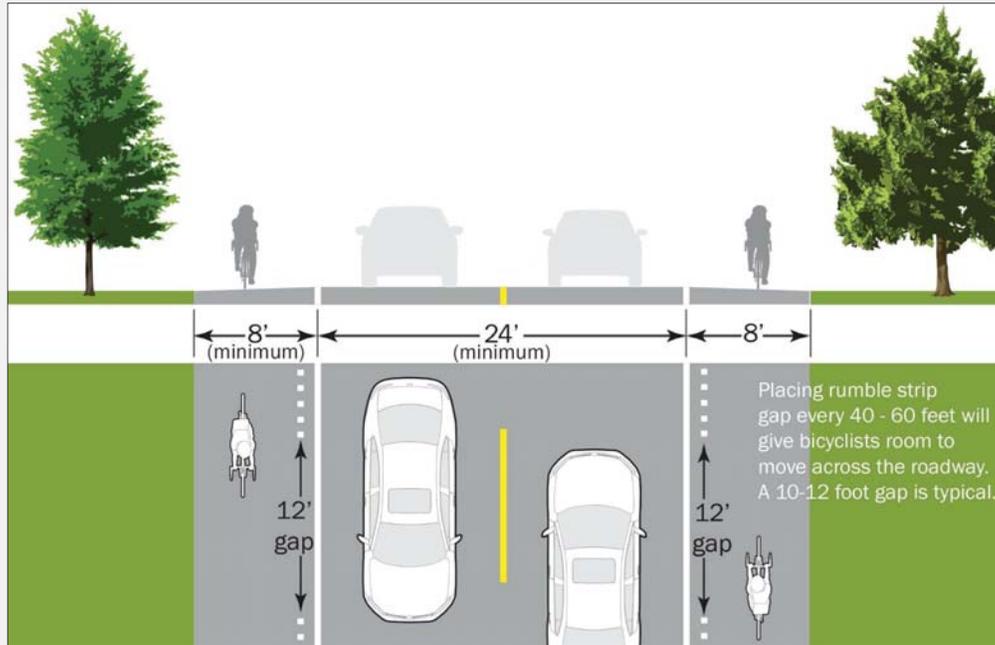
**All on-road bicycle accommodations within state-maintained right-of-way must meet or exceed minimum requirements in TxDOT's Roadway Design Manual for the functional classification of that roadway segment.**

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## 8' or wider outside shoulders

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PURPOSES ONLY

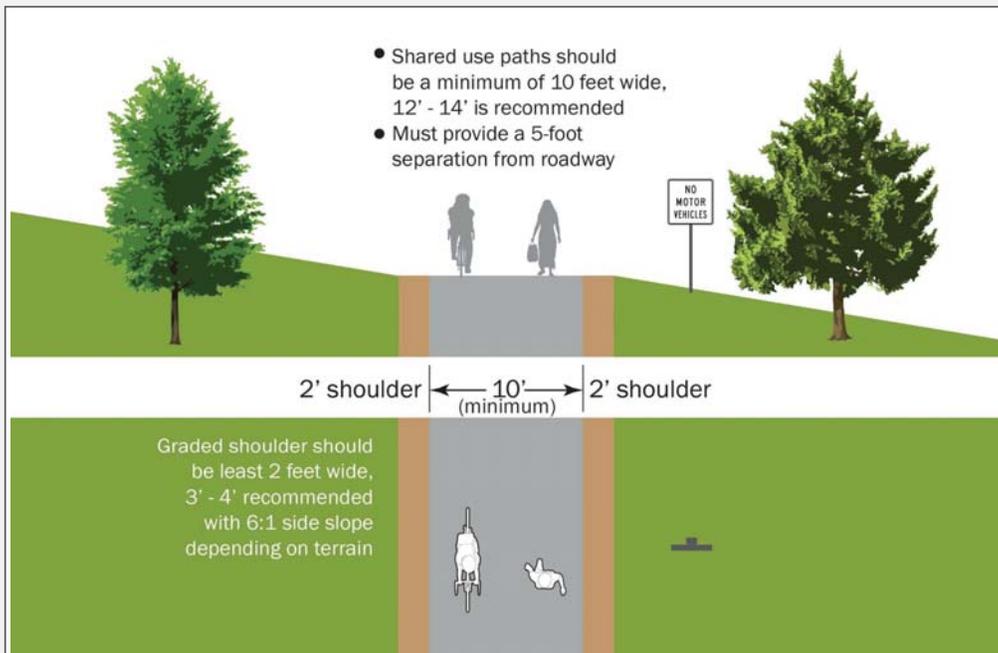


21

Layout is conceptual, actual measurements and placements must conform with TxDOT design guidelines and Texas MUTCD

## Shared Use Path

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PURPOSES ONLY

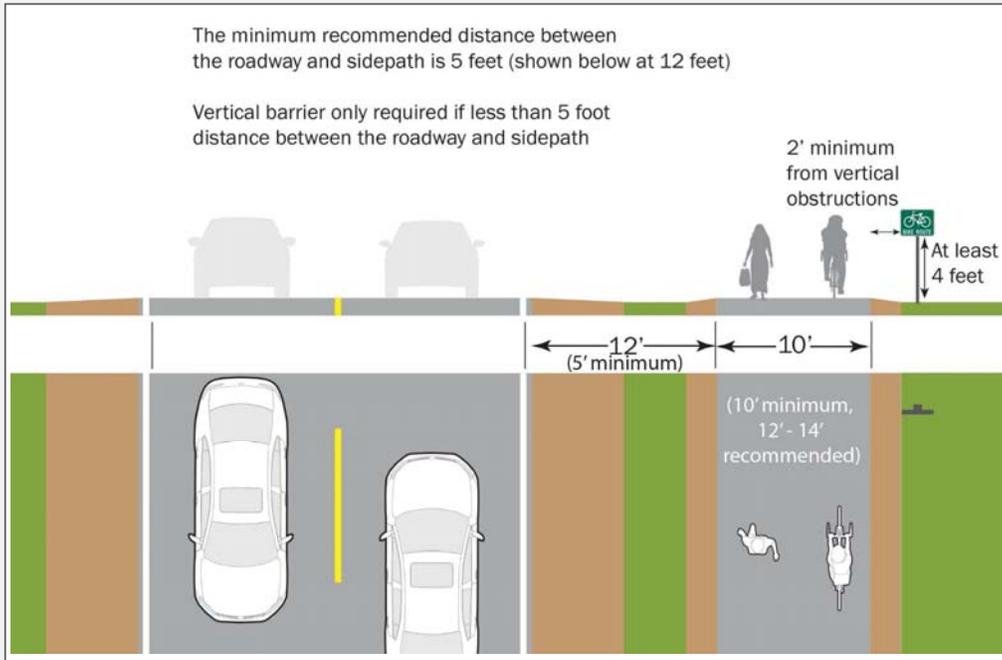


22

Layout is conceptual, actual measurements and placements must conform with TxDOT design guidelines and Texas MUTCD

# Sidepath

FOR DISCUSSION  
PURPOSES ONLY

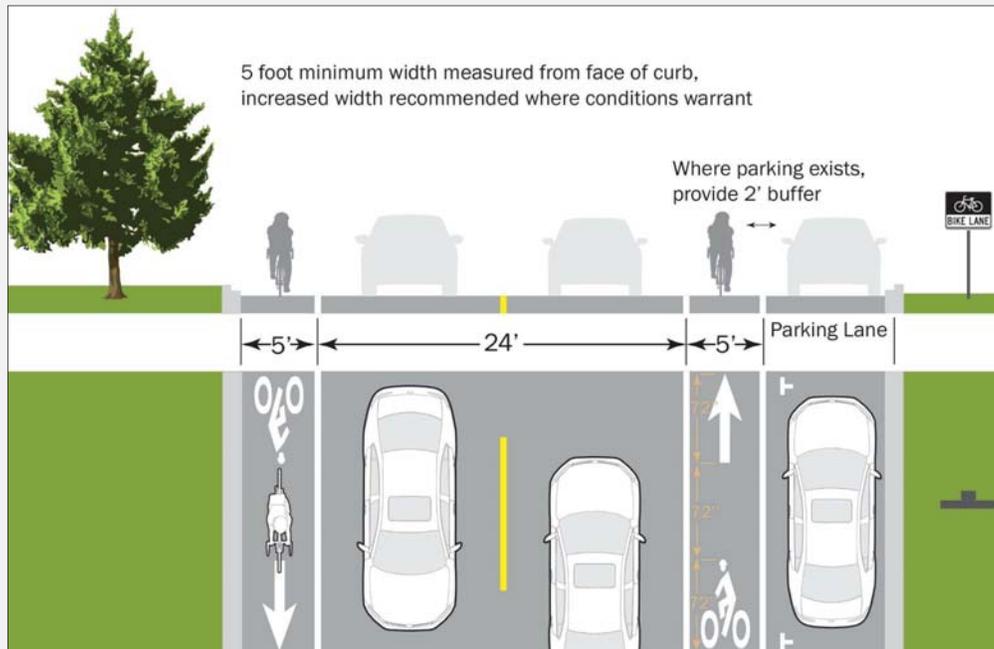


23

Layout is conceptual, actual measurements and placements must conform with TxDOT design guidelines and Texas MUTCD

# Bicycle lane

FOR DISCUSSION  
PURPOSES ONLY

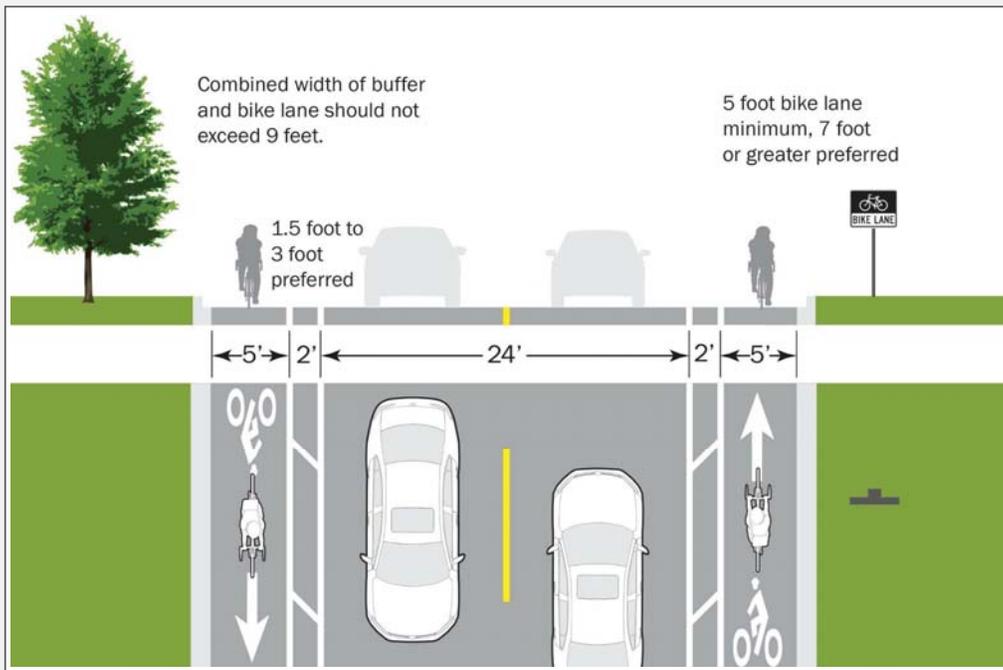


24

Layout is conceptual, actual measurements and placements must conform with TxDOT design guidelines and Texas MUTCD

## Buffered Bicycle lane

FOR DISCUSSION  
PURPOSES ONLY



25

Layout is conceptual, actual measurements and placements must conform with TxDOT design guidelines and Texas MUTCD

## BTTs recommended bikeway surface types

### Long-term:

- Hard surfaces preferred for ultimate network



### Short to mid-term:

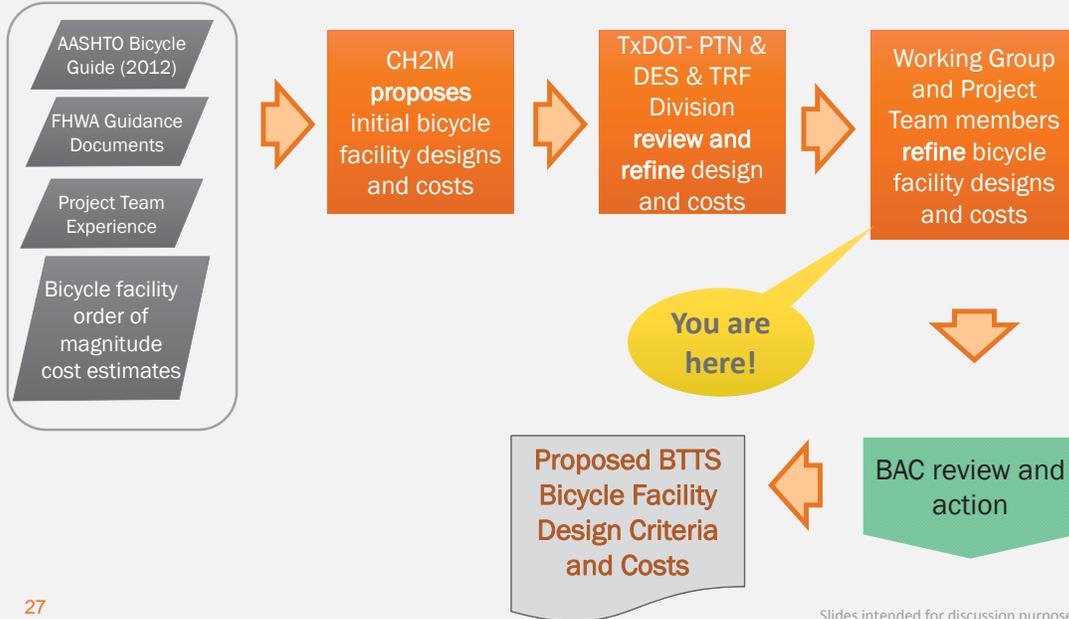
- Off-road shared use paths with various surface treatments may be included
  - Different surface treatments will attract different users from inside and outside of Texas

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## Interim Product Overview – Bicycle Facility Design Criteria

### BACKGROUND DATA



## Questions



## Action Items

### TxDOT-PTN & CH2M:

- Complete review of Wikimap input
- Continue modifying Conceptual Routes based on stakeholder feedback and additional data
- Revise bikeway design criteria
- Internally review and coordinate bikeway design criteria, bikeway cost estimates, and USBRS route development procedures



### Working Group:

- *Something to think about:*  
How should TxDOT and partners prioritize BTTS Route Network development?

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## Future Working Group Meetings

### October topics:

- Discuss TxDOT administrative processes for USBRS route development
- Bikeway cost estimates by accommodation type
- BTTS route prioritization



### Next meetings:

- WG #10, In-person
  - October 27<sup>th</sup>, 1:00 - 2:00 pm
- WG #11, WebEx
  - November 17<sup>th</sup>, 12:30 - 1:30 pm?

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Slides intended for discussion purposes only

Thank You!!

**Bicycle Advisory  
Committee**

**Carl Seifert**  
*Transportation Planner*  
[carl.seifert@ch2m.com](mailto:carl.seifert@ch2m.com)  
CH2M: 512-249-3351  
TxDOT: 512-374-5213

**ch2m**<sup>SM</sup>



*Public Transportation (PTN)*

**Teri Kaplan**

**Bonnie Sherman**



## Working Group Meeting #10

**ATTENDEES:** BAC Working Group: Joseph Pitchford, Shawn Twing, Karla Weaver, Billy Hibbs, and DawnElla Rust;  
TxDOT-PTN: Bonnie Sherman and Teri Kaplan  
CH2M: Carl Seifert and Stephanie Lind

**MEETING FORMAT:** In-person Meeting with optional Conference Call via WebEx  
Prior to the meeting, a copy of the PowerPoint presentation (in pdf form) was distributed via email to the working group members.

**COPY TO:** TxDOT-PTN and file

**NOTES PREPARED BY:** CH2M and TxDOT-PTN

**DATE:** 10/27/17

## Meeting Objectives

- Review of stakeholder outreach/wikimap feedback documentation
- Discuss considerations of BTTTS bikeway types and design criteria
- Discuss US Bicycle Route System Route Development processes

## Summary

### Introductions and overview

All Working Group members introduced themselves, then Carl Seifert (CH2M) provided an overview of the agenda.

### WikiMap Feedback Documentation

Stakeholder outreach/wikimap feedback efforts are an important part of the conceptual route development process. Engaging regional stakeholders allows the project team to receive comments on the draft conceptual route locations and start dialogues with regional stakeholders regarding their bicycle plans and infrastructure. The process for acknowledging and documenting wikimap feedback was discussed with the working group. The process is as follows:

1. Comments were grouped by:
  - Area/location (e.g. DFW area comments)
  - Comment/issue type (e.g. local route addition recommendation)
2. Comments were compared against qualitative and quantitative routing criteria as agreed upon by BAC, TxDOT-PTN and CH2M
  - Does the recommended route change connect to a bicycle destination or state/national park?
  - Are there route segments with existing conditions that are quantitatively better suited for BTTTS?

Additionally, all BTTS Working Group members were given the opportunity to review the final Wikimap and feedback. Working Group members were emailed a weblink to the 'closed' wikimap for their review.

#### Discussion:

Carl initiated discussion around several routing questions as follows:

- 1) Closeness of conceptual routes and relative sizes of conceptual route loops
  - a. Do we include any route proposed by a stakeholder?  
Billy Hibbs – *Yes*. The implementation prioritization of the bicycle tourism trail network is more important than selecting which routes were better suited.
  - b. Incorporating loops was one of the original qualitative routing criteria, but it ranked as a low priority by Working Group members. Regional stakeholders and Working Group members both suggested loop routes. Should the BTTS Example Conceptual Routes include loops?  
*Yes*. When asked about the growing total mileage of suggested conceptual routes, several working group members suggested that the implementation prioritization of the bicycle tourism trail network was more important than selecting which routes were better suited.
  - c. Specific example: Dallas LOOP  
The Dallas LOOP is an almost entirely funded and/or constructed loop route around downtown Dallas. It is currently and will be a major bicycle destination. *While this route may not connect to statewide or regional destinations, it should still be included on the example Conceptual Route Network.*  
Including this route increases bicycle route connectivity inside the Dallas/Fort Worth metroplex and to DFW Airport, thus helping to attract international bicycle tourists and provides economic development.
- 2) Proposing conceptual routes on rail corridors
  - a. Do we include routes proposed by a stakeholder on active rail corridors?  
*No*. The Consensus from Working Group members was that active rail corridors may one day be used, but there is too much uncertainty to route example Conceptual Routes down these corridors.
  - b. Some rail corridors are compatible with bike use, do we use those?  
*Decide on a case by case basis.*
- 3) El Paso example of incorporating stakeholder feedback as an alternative
  - a. El Paso stakeholders suggested a locally preferred route between Van Horn and Alpine. The current conceptual route utilizes I-10 Frontage Road and SH 118, while the locally preferred uses US 90/US 67.
  - b. The composite scores along the locally preferred route are not quite as high as compared to the current conceptual route; however, the current route features more

challenging elevation changes. Therefore, it was proposed that the locally preferred route be included as a less challenging alternative.

4) BTTS Route Prioritization

- a. Through discussion, the Working Group reached consensus about implementation prioritization. They agreed an initial focus on cross-state spine routes was important to create inertia and connect major destinations and cities.
- b. Billy Hibbs recommended that the BAC pass a resolution to use any available FHWA Flex Funds through the Transportation Alternatives Set-Aside Program to be utilized in the development of the Bicycle Tourism Trails Network.

Typical Sections with Cost Estimates

Previously shown typical section graphics showing the five bikeway types considered for incorporation into the BTTS network were shown accompanied by order of magnitude cost estimates. Cost estimates were developed by CH2M staff using TxDOT average bid prices. Costs did not include purchasing right-of-way.

Teri Kaplan mentioned that these cost estimates are likely lower than if a project was let by TxDOT. TxDOT let projects are a little more expensive and include administrative costs. Cost estimates may be less costly if the improvements are combined with other construction activities and/or road widening.

- Working Group members requested assumed facility maintenance costs per year to be included in future cost estimate revisions. Billy Hibbs suggested that it may be helpful to prioritize or score routes based upon the anticipated maintenance/upkeep.
- There was a discussion on whether these facilities can be used by pedestrians.

Bikeway accommodation order of magnitude cost estimates:

Bikeway accommodation	Cost per mile	Notes
8' or wider outside shoulders	\$705,400	this includes widening the roadway to include wider shoulders
Shared Use Path	\$587,600	This assumes that the path has lighting. The committee would like to change the shown path to be 12' rather than 10' and also show costs for a 12' facility.
Sidepath	\$587,600	
Bicycle lane	\$45,200	The workgroup would like to show sidewalks on the graphic.
Buffered Bicycle Lane	\$81,700	The workgroup would like to show sidewalks on the graphic.

USBRS Route Development

An overview of the US Bicycle Route System (USBRS) was provided. Currently over 12,000 miles of routes in 25 states have been designated. A distinction was made between “undeveloped corridors” and “Designated USBRS Routes”. Undeveloped corridors have been drawn across the U.S. they are made up

of 50-mile-wide corridors that were proposed by Adventure Cycling where a USBRS route could be developed.

To be an AASHTO-approved and designated USBRS Route, all roadway owners need to provide consent. Additionally, a designated USBRS route must connect two or more states, to an international border or another USBRS route. Karla Weaver pointed out that flexibility has been provided by AASHTO regarding these rules. Massachusetts DOT was allowed to designate a single floating portion of a longer route, which did not connect two states or routes together. This is good news for Texas because any proposed USBRS Route in Texas will be very long.

Steps to designate:

1. Draft the route
2. Secure local agreements along the route
3. Prepare and submit the AASHTO application
4. Route promotion and operation

Discussion:

How should TxDOT and partners prioritize BTTTS route segments for USBRS development?

- *Consensus:* Working Group members agreed an initial focus on *cross-state spine routes* was important to create inertia and connect major destinations and cities.
  - Additionally, these routes are similar to USBRS Corridors.
  - It remains important that Texas leads the decision-making process and doesn't defer to AASHTO or Adventure Cycling to make determinations.

## Action Items

**TxDOT-PTN & CH2M** will continue to:

- Finish modifications to Conceptual Routes
- Outreach to BikeTexas and update TxDOT Division staff
- Refine bikeway estimated costs

NOTE:

The workgroup decided to not meet during the month of November and instead meet in December 2017.

# TxDOT Bicycle Tourism Trails Study

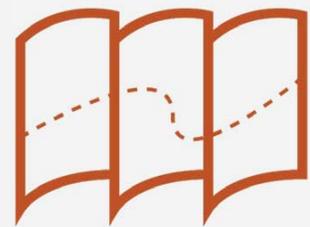
Working Group- Meeting #10

October 27, 2017

Discussion DRAFT

## Agenda

- Incorporation of Wikimap stakeholder feedback
- Cost estimates by bikeway type
- USBRS route development process
- Next steps
  - Future meeting topics and schedule
  - Action items



## Incorporation of Wikimap Stakeholder Feedback



3

## Documentation of Wikimap comments

Wikimap comments/inputs help us to understand local bicycle infrastructure and routing desires

1. Group comments by:
  - Area/location (eg. DFW area comments)
  - Comment/issue type (eg. local route addition recommended)
2. Compare suggested route changes against **qualitative and quantitative routing criteria** as agreed upon by BAC, TxDOT-PTN, and CH2M
  - Does the recommended route change connect to a bicycle destination or state/national park?
  - Are there route segments with existing conditions that are quantitatively better suited for the BTTS?

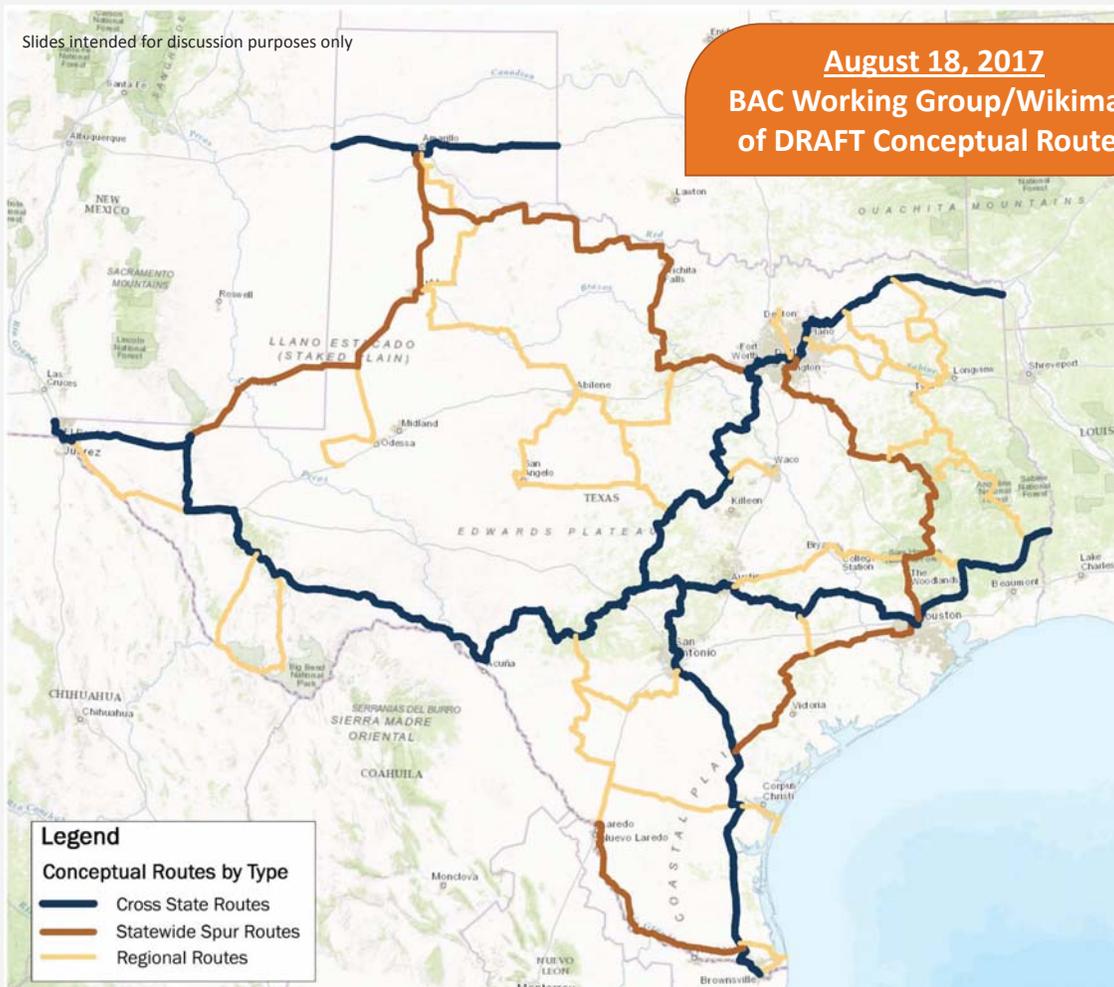


4

Slides intended for discussion purposes only

Slides intended for discussion purposes only

August 18, 2017  
BAC Working Group/Wikimap  
of DRAFT Conceptual Routes



**Legend**

**Conceptual Routes by Type**

- Cross State Routes
- Statewide Spur Routes
- Regional Routes

5

Slides intended for discussion purposes only

October 20, 2017  
DRAFT Conceptual Routes



  Discussion Areas (next slides)

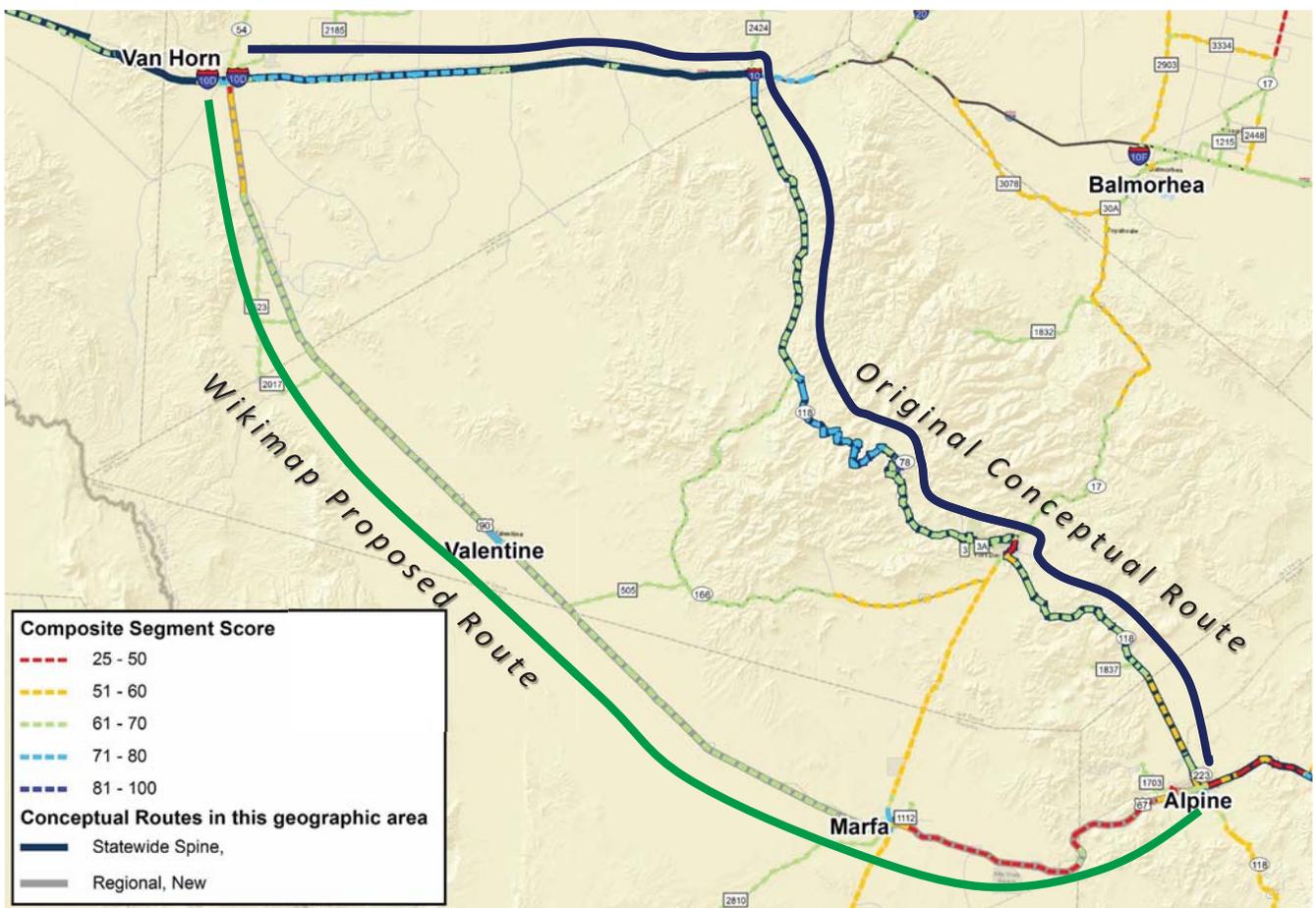
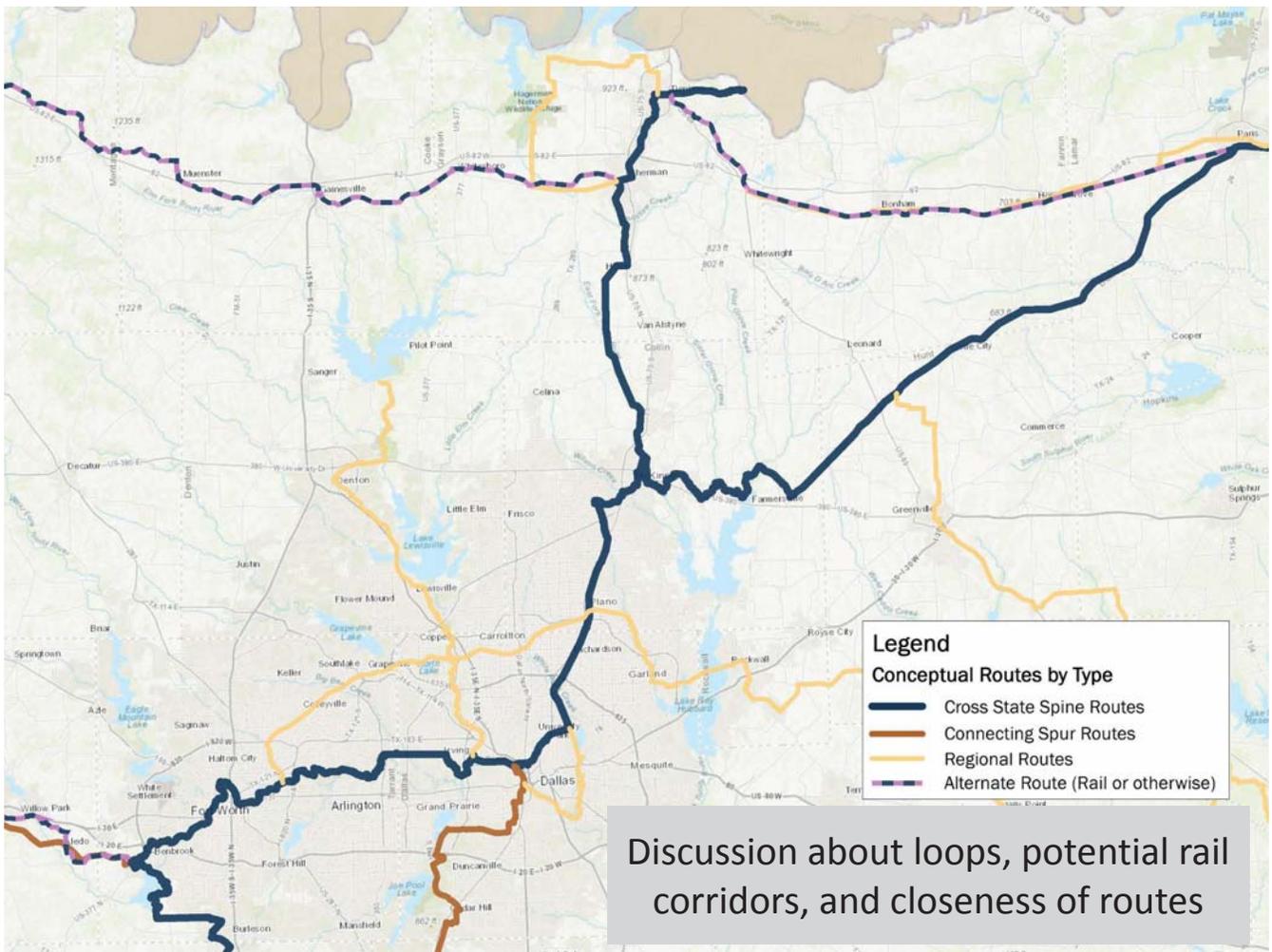
**Legend**

**Conceptual Routes by Type**

- Cross State Spine Routes
- Connecting Spur Routes
- Regional Routes

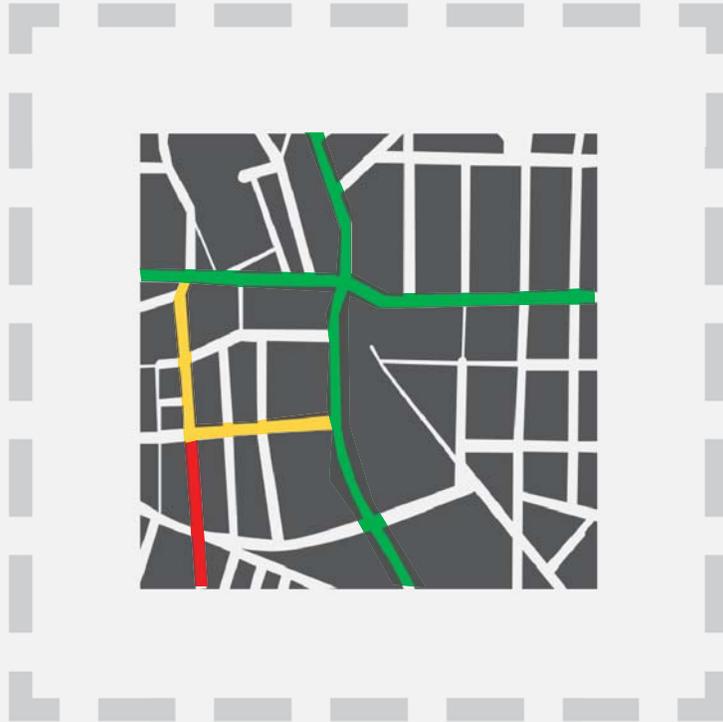
**DRAFT  
NOT FINAL**

6



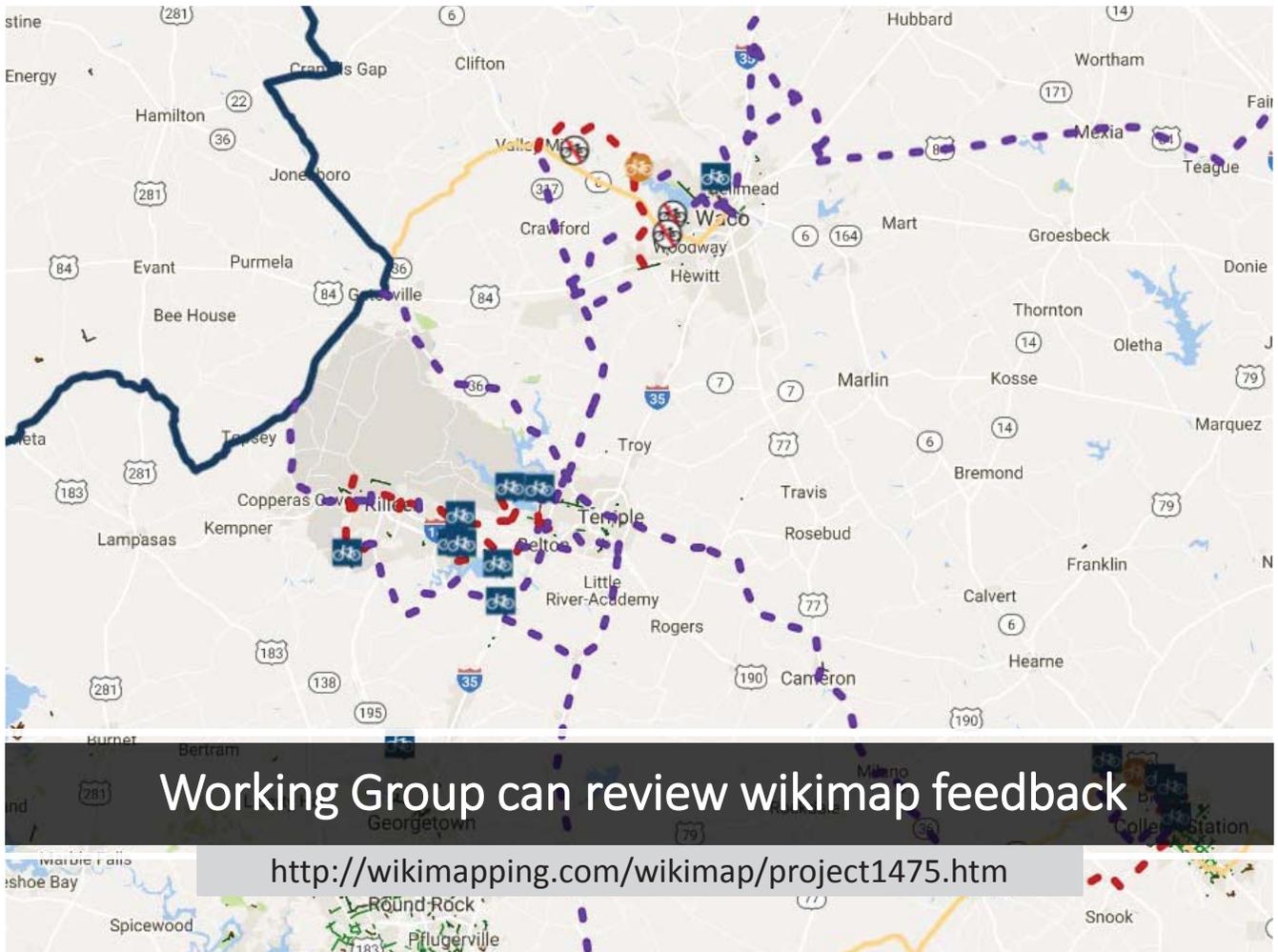
Marfa Example: Locally preferred alternate route

# Guided example using GIS software



9

Slides intended for discussion purposes only



## Bikeway Types, Design Criteria, and Estimated Costs



11

### BTTs recommended bikeway types and design criteria

- 8' or wider outside shoulders
- Shared use path/ Sidepath
- Bicycle lane
- Buffered bike lane



All proposed design standards follow TxDOT's Roadway Design Manual, AASHTO's Guide for the Development of Bicycle Facilities (2012) and the Texas MUTCD.

**All on-road bicycle accommodations within state-maintained right-of-way must meet or exceed minimum requirements in TxDOT's Roadway Design Manual for the functional classification of that roadway segment.**

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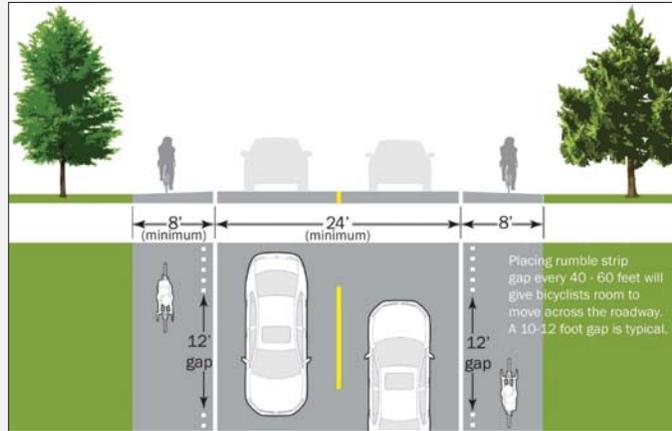
# 8' or wider outside shoulders

**DRAFT FOR DISCUSSION ONLY**

Item	Estimated cost per mile
WIDEN PAVEMENT 8 FT (BOTH SIDES)	\$699,200
SURFACE PREPARATION FOR STRIPES	\$500
6" REFLECTIVE PAVEMENT MARKINGS	\$4,200
RUMBLE STRIPS (SHOULDER)	\$1,500
<b>Cost per mile (subtotal)</b>	<b>\$705,400</b>

**Notes:**

- 1) Assumed Pavement Structure:
  - 8" Continuously Reinforced Concrete Pavement
  - 4" Hot Mix Asphalt
  - 8" Flex Base
- 2) Order of magnitude estimated costs rounded to the nearest \$100 in 2017 dollars



13

Layout is conceptual, actual measurements and placements must conform with TxDOT design guidelines and Texas MUTCD

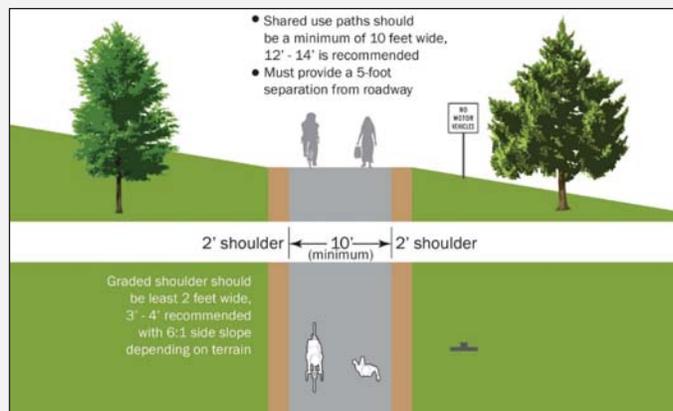
# Shared Use Path

**DRAFT FOR DISCUSSION ONLY**

Item	Estimated cost per mile	Remarks
6" REINFORCED CONCRETE SHARED USE PATH	\$312,600	10FT PAVEMENT WIDTH AND 2' SHOULDERS ON EACH SIDE
PEDESTRIAN LIGHTING ASSEMBLIES (100 WATT)	\$265,000	HIGH PRESSURE SODIUM LIGHT FIXTURE/LED <sup>1</sup>
BICYCLE ROUTE SIGNS	\$10,000	ASSUMES 20 PER MILE
<b>Cost per mile (subtotal)</b>	<b>\$587,600</b>	

**Notes:**

- 1) Assumes light assembly every 100 ft or 53 light assemblies/mile.
- 2) Order of magnitude estimated costs rounded to the nearest \$100 in 2017 dollars



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Layout is conceptual, actual measurements and placements must conform with TxDOT design guidelines and Texas MUTCD

# Sidepath

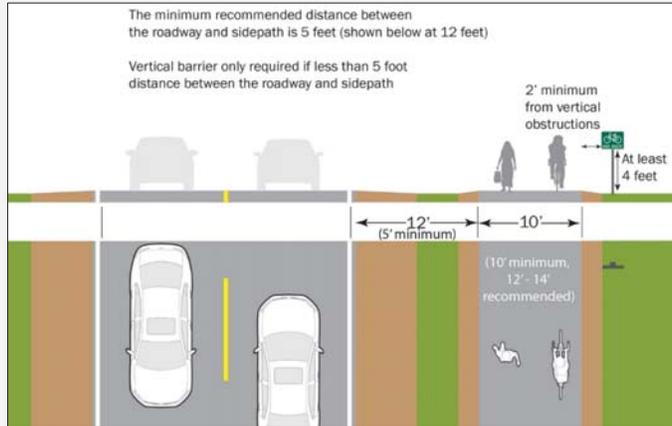
**DRAFT FOR DISCUSSION ONLY**

Item	Estimated cost per mile	Remarks
6" REINFORCED CONCRETE SHARED USE PATH	\$312,600	10FT PAVEMENT WIDTH AND 2' SHOULDERS ON EACH SIDE
PEDESTRIAN LIGHTING ASSEMBLIES (100 WATT)	\$265,000	HIGH PRESSURE SODIUM LIGHT FIXTURE/LED <sup>1</sup>
BICYCLE ROUTE SIGNS	\$10,000	ASSUMES 20 SIGNS PER MILE
<b>Cost per mile (subtotal)</b>		<b>587,600</b>

**Notes:**

- 1) Assumes light assembly every 100 ft or 53 light assemblies/mile.
- 2) Order of magnitude estimated costs rounded to the nearest \$100 in 2017 dollars
- 3) Lighting for path must be sufficient to illuminate roadway if roadway is currently unlit.

Other Potential Costs	
42" CONCRETE BARRIER (VERTICAL BARRIER)	\$265,600
ROADWAY ILLUMINATION	\$124,500



<sup>15</sup> Layout is conceptual, actual measurements and placements must conform with TxDOT design guidelines and Texas MUTCD.

# Bicycle Lane

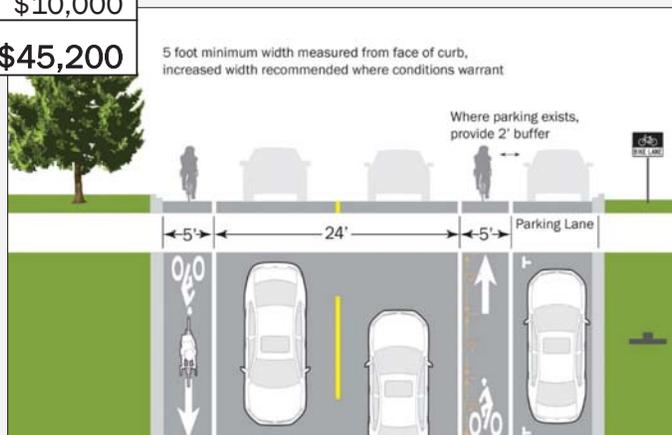
**DRAFT FOR DISCUSSION ONLY**

Item	Estimated cost per mile
REMOVE LANE MARKINGS	\$23,200
SURFACE PREPARATION FOR 6" STRIPES, BIKE ARROWS, AND BIKE SYMBOL	\$1,500
6" REFLECTIVE PAVEMENT MARKINGS	\$4,200
REFLECTIVE PAVEMENT MARKINGS BIKE ARROW (40 PER MILE)	\$1,100
REFLECTIVE PAVEMENT MARKINGS-BIKE SYMBOL (40 PER MILE)	\$5,200
BICYCLE ROUTE SIGNS (20 PER MILE)	\$10,000
<b>Cost per mile (subtotal)</b>	<b>\$45,200</b>

Other Potential Costs	
INSTALL CURB AND GUTTER	\$208,000
WIDEN PAVEMENT 5' FOR BICYCLE LANE	\$454,300

**Notes:**

- 1) Assumes minimum existing 35' pavement width
- 2) Assumes two lane markings for one mile
- 3) Order of magnitude estimated costs rounded to the nearest \$100 in 2017 dollars



<sup>16</sup> Layout is conceptual, actual measurements and placements must conform with TxDOT design guidelines and Texas MUTCD.

# Buffered Bicycle Lane

**DRAFT FOR DISCUSSION ONLY**

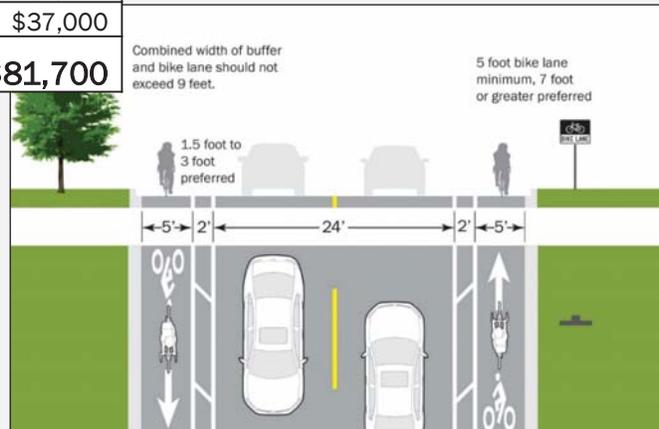
Item	Estimated cost per mile
REMOVE LANE MARKINGS	\$23,200
SURFACE PREPARATION FOR 6" STRIPES, BIKE ARROWS, AND BIKE SYMBOL	\$1,800
6" REFLECTIVE PAVEMENT MARKINGS	\$8,400
REFLECTIVE PAVEMENT MARKINGS BIKE ARROW (40 PER MILE)	\$1,100
REFLECTIVE PAVEMENT MARKINGS-BIKE SYMBOL (40 PER MILE)	\$5,200
BICYCLE ROUTE SIGNS (20 PER MILE)	\$5,000
FLEXIBLE DELINEATORS (530 PER MILE)	\$37,000
<b>Cost per mile (subtotal)</b>	<b>\$81,700</b>

Other Potential Costs	
INSTALL CURB AND GUTTER	\$208,000
WIDEN PAVEMENT (5' BICYCLE LANE AND 2' BUFFER)	\$571,500

Notes:

- 1) Assumes minimum existing 40' pavement width
- 2) Assumes two lane markings for one mile
- 3) Assumes delineators are placed every 10'
- 2) Order of magnitude estimated costs rounded to the nearest \$100 in 2017 dollars

<sup>17</sup> Layout is conceptual, actual measurements and placements must conform with TxDOT design guidelines and Texas MUTCD.



## USBRS Route Development



# US Bicycle Route System (USBRS)

- Officially numbered and signed nation-wide bicycle route network
- 12,000+ miles in 25 states have been designated. More than 37,000 to go
- Proposed by Adventure Cycling Association in consultation with AASHTO



Slides intended for discussion purposes only

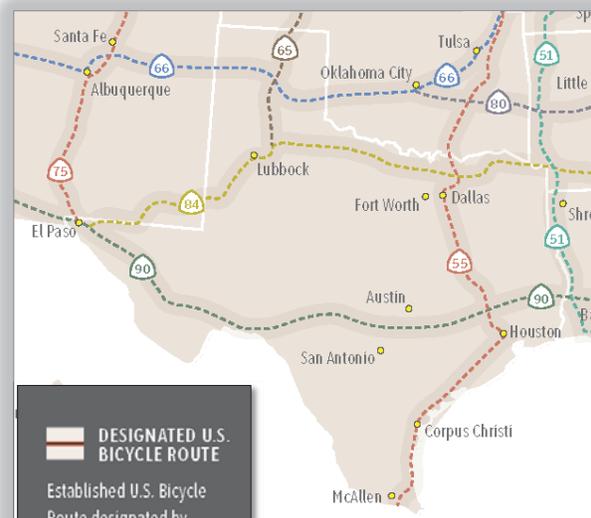
## Corridors vs Designated Routes

### “Undeveloped Corridors”

- 50 mile wide corridors proposed by Adventure Cycling where a USBRS route **could be** developed

### “Designated USBRS Route”

- AASHTO approved routes, proposed by state/local governments with consent from all route property owners.
- A designated USBRS route must connect:
  - Two or more states,
  - To an international border, or
  - Another USBRS route
- Designation process on subsequent slides



**DESIGNATED U.S. BICYCLE ROUTE**  
Established U.S. Bicycle Route designated by AASHTO.

\*\*\*\*\*

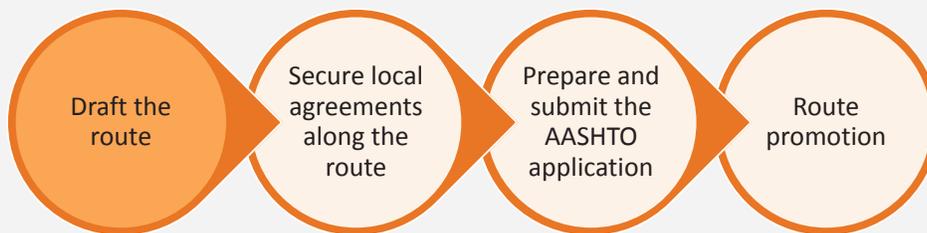
**UNDEVELOPED CORRIDOR**  
These corridors are not routes, but 50-mile wide areas where a route may be developed.

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# 1 Draft the route



- a) Assess the existing bicycle network. Consider/understand:
  - the road quality, traffic volume, support/services along route
  - scenic, historic, recreation, and connectivity features.
- b) Determine the best route using this assessment and local, regional, and touring bicycle club routes and maps along with local trail systems
- c) Assess need for infrastructure improvements
- d) Consider alternate routes
- e) Get feedback from stakeholders on the draft route

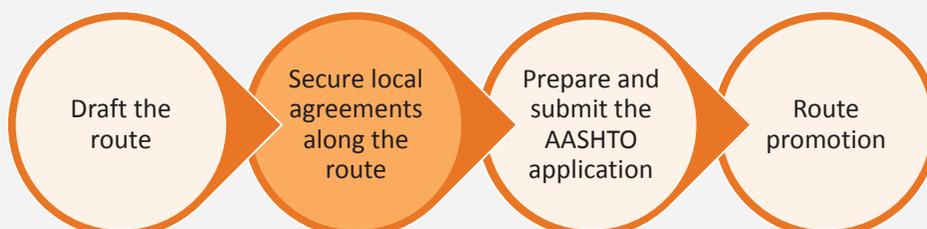


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# 2 Secure local agreements along the route

- a) Research and document the various road owners along the route
- b) Contact road owners (local jurisdictions) for USBR agreements
- c) Obtain letters or resolutions of support from local governments
- d) Obtain MOUs or interagency agreements
- e) Review on-the-ground route (DOT, advocacy, or regional orgs)

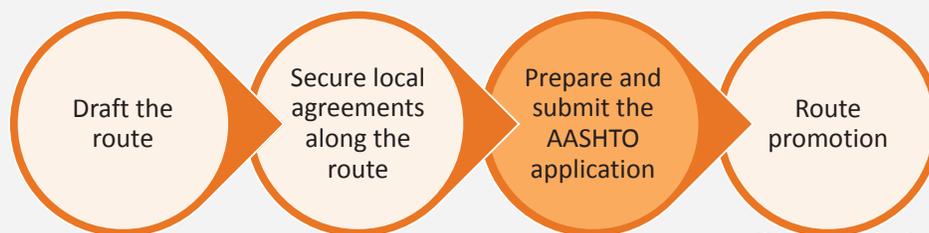


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### 3 Prepare and submit the AASHTO application

- a) Draft turn-by-turn instructions
- b) Create map(s) detailing the route
- c) Obtain agreements from neighboring state
- d) Obtain agreements from state/local road owners
- e) Obtain signature of TxDOT's chief executive or program supervisor

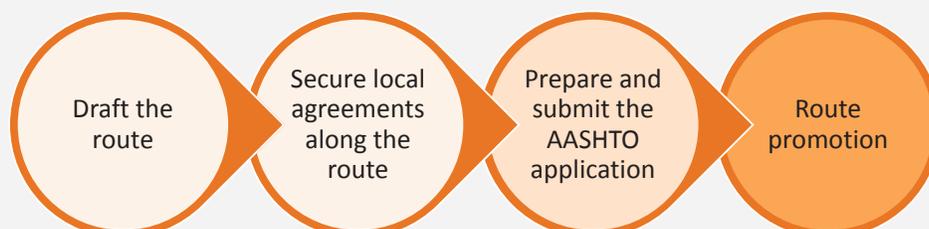


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### 4 Route Promotion and Operation

- a) Considerations
  - Role of non-profit vs public sector?
  - Funding?
  - Maintenance?
- b) USBR route signage (not required, but encouraged)
- c) Develop maps
- d) Promote tourism through marketing, media and outreach



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## Route Designation Process Best Practice: Wisconsin's Department of Transportation



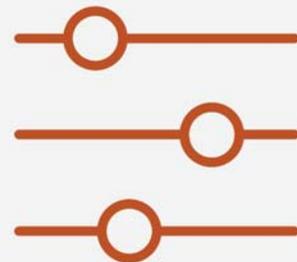
1. Develop vision, goals, and objectives
2. Establish/refine planning criteria for the bicycle system
3. Inventory crashes, bicycle use, and roadway conditions for bicycling
4. Identify bicycle travel corridors
5. Evaluate and select specific route alternatives and design treatments

25 Source - <https://www.adventurecycling.org/routes-and-maps/us-bicycle-route-system/implement-a-us-bicycle-route/phase-ii-designation/>

Slides intended for discussion purposes only

## Bicycle Tourism Trails Study and USBRS development in Texas

- How should TxDOT and partners prioritize BTTS route segments for USBRS development?



## Action Items

### TxDOT-PTN & CH2M:

- Finish modifications to Conceptual Routes
- Outreach to BikeTexas and update TxDOT Division staff
- Refine bikeway estimated costs



### Working Group:

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Slides intended for discussion purposes only

## Future Working Group Meetings

### December topics:

- Conceptual Routes update
- Bikeway types estimated costs update

### Next meetings:

- WG #11, WebEx
  - SKIP ~~November 13<sup>th</sup>, 10:00 – 11:00 am~~
  - December 11<sup>th</sup> - 15<sup>th</sup> ?



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# Questions



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## Thank You!!

**Bicycle Advisory  
Committee**

**Carl Seifert**

*Transportation Planner*

[carl.seifert@ch2m.com](mailto:carl.seifert@ch2m.com)

CH2M: 512-249-3351

TxDOT: 512-374-5213

**ch2m.**



*Public Transportation (PTN)*

**Teri Kaplan**

**Bonnie Sherman**

## Working Group Meeting #11

**ATTENDEES:** BAC Working Group: Billy Hibbs, DawnElla Rust, Bobby Gonzalez, Joseph Pitchford, Shawn Twing, and Karla Weaver  
TxDOT-PTN: Teri Kaplan and Bonnie Sherman;  
CH2M: Carl Seifert and Luke Easterling

**MEETING FORMAT:** Conference Call via WebEx (visual & audio access for all)  
 Prior to the meeting, a copy of the PowerPoint presentation (in pdf form) and agenda were distributed via email to the working group members.

**COPY TO:** TxDOT-PTN and file

**NOTES PREPARED BY:** CH2M and TxDOT-PTN

**DATE:** 12/12/17

## Meeting Objectives

- Discuss route development and premier the Example Network
- Discuss updated bikeway type cost estimates
- Discuss proposed BTTS documentation
- Update stakeholder outreach activities

## Summary

### Introductions and overview

The meeting began 5 minutes late with Carl Seifert (CH2M) provided an overview of the agenda.

### Route Development

- Defining route types: Carl revisited definitions of the three broad categories of routes that comprise the Example Network. These three categories roughly indicate the order of statewide implementation priority.
- Conceptual Routes Revisited: A map of the Conceptual Routes (interim network) was provided for comparison with the Example Network.
- Example Network - Version 1:
  - Carl shared a map and analysis of the Example Network (as of 12/12/2017), which incorporates all stakeholder inputs.
  - Carl highlighted new and modified portions of the Example Network, which resulted from stakeholder engagement. Additionally a map locating all new segments was provided. Changes highlighted included:
    - New regional routes in the Dallas area, East Texas, north of Beaumont, Killeen-Temple area, Waco area, El Paso area, and in West Texas;
    - A new Connecting Spur segment between San Antonio and Austin; and
    - A new Cross-state Spine segment north of Dallas.

- It was also highlighted that El Paso stakeholders recommended that the route following the Rio Grande should be on the Cross-state Spine instead of the segment connecting out to Guadalupe Mountains National Park.
- Unofficial BTTS bikeway types:
  - A statewide view of the bikeway types that might comprise the example network was provided. This map did not differentiate existing and proposed infrastructure, but this next step is currently underway.
  - A table analyzing the proportions of each bikeway type across the Example Network was provided. It emphasized the large amount of wide outside shoulders which would be used to cross the rural/scenic areas of Texas. Other bikeway types were identified because they were either featured in an existing bicycle plan or the infrastructure was already on the ground.
  - Discussion: Joseph asked what the term “shared use path” means because he confused it with shared lanes on a roadway. Teri responded that the term “shared use path” is one defined in the AASHTO manual and MUTCD. This accommodation is only for bicycle and pedestrian users (no horses). Karla also mentioned that the DFW 2040 plan uses the term “shared use path” for trails, so the terminology would be supported within their regional documents.

### **Bikeway Type Cost Estimates**

- Capital and O&M Costs Summary Comparison:
  - Carl shared the draft cost ranges developed by CH2M, which are still under-review by TxDOT-PTN and other divisions. He highlighted that the ranges were provided per mile and represented as thousands of dollars. The bikeway types were separated into the construction activities taken to reach the final accommodation (e.g. “Restripe roadway for Bicycle Lane” as compared to “Widen Roadway for Bicycle Lane”).
  - Carl emphasized that these cost estimates DO NOT include intersection considerations, right-of-way acquisition, utility adjustments, or other project development costs. Additionally, development patterns present in rural, suburban, and urban contexts can affect cost estimates.
  - Discussion:
    - Karla stated that NCTCOG developed cost estimates for various bikeways and will share the cost estimates and methodology with TxDOT. Carl requested that Karla also share O&M cost estimates, if available.
    - Karla asked if the BTTS is a 20-year plan? Teri responded that this effort remains a “study” and represents an example of what a network and/or plan may look like. The BTTS route development process, bikeway design criteria, and Example Network may serve as examples and/or fuel to ignite local bikeway plans and local bikeway construction efforts around the state.

### **BTTS Documentation**

- Carl shared the proposed BTTS products that will be developed to document the study. These include:
  - Tech Memos – These largely follow the BTTS goals and objectives

- Static and Digital Maps- All printed maps and GIS files.
- Summary- a graphic-heavy, 4-page, high-level overview
- Final Report – A single document representing the study: an executive summary, the contents of the tech memos re-organized into a logical order, and the tech memos in an appendix.

### **Stakeholder Engagement Update**

- Stakeholder Outreach Activities:
  - TxDOT Division Outreach- PTN and CH2M have been coordinating with various TxDOT Divisions on the BTTS. Administration recommended engagement of TxDOT staff responsible for incorporation into the TxDOT 2045 Long Range Plan and the TxDOT Statewide Planning Map.
  - Discussion: Billy asked if BikeTexas has been engaged in this process? Answer: Yes, BikeTexas has been engaged from the early stages of the BTTS, but we need to seek their official blessing prior to the January BAC. Billy said he would like Bike Texas to endorse this plan before a BAC representative presents to the Texas Transportation Commission. A date for any presentation has not yet been set.
  - Billy inquired about the process for engaging local-level partners for developing projects. He requested additional data regarding the number of small towns and counties along cross-state spine routes. He wants to make a strong economic development argument for these local decision-makers. Shawn noted that in some rural areas, the county leadership are more important stakeholders than small town leaders. Less populated areas are run by counties. Carl responded that additional focused data to make economic development oriented arguments is needed. He also mentioned that we need to remember this effort is a study, not a plan, therefore we can't encourage others to build based upon our statewide analysis. Teri added that our study can encourage local entities to build a local bike plan, which features the BTTS routes.

### **General Discussion**

- Shawn asked if any databases or resources tracked which routes and roadway are being built? This information can assist in understanding roadway improvements. Teri answered that no databases perform this function; however road improvements involving federal dollars are featured in the TIP and STIP.
- Joseph requested that the results of the BTTS be presented at the Active Transportation & Trails Conference is in May 2018. CH2M and PTN will have final documents by April 2018.
- Billy recommended giving Texas Transportation Commissioners advanced notice prior to presenting at the conference. Teri suggested a briefing to the Commissioners prior to a formal presentation may provide the necessary information.

### **Next Steps**

- Final Working Group Meeting:
  - PTN and CH2M request an January Working Group meeting prior to the January 22 BAC meeting. Carl will send a “whenisgood” scheduling email to understand the best for working group members during the week of January 15<sup>th</sup>. Teri mentioned that PTN encourages those who can attend in-person to do so, but a WebEx will be available.

## Action Items

### **CH2M/PTN:**

- Continue TxDOT Division outreach and review
- Continue refining Example Network and cost estimates
- Apply bikeway construction costs to Example Network
- Prepare for final Working Group and BAC Meetings in January
- BTTs Documentation

### **Working Group:**

- Fill out 'whenisgood' to schedule January Working Group meeting.

# TxDOT Bicycle Tourism Trails Study

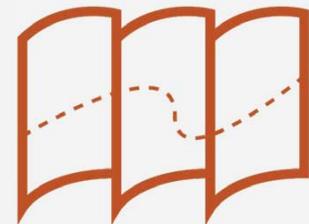
Working Group- Meeting #11

December 12, 2017

Discussion DRAFT

## Agenda

- Route development: Example Network (V1)
  - Example network analysis
  - Bikeway types on the Example Network
- Updated bikeway type cost estimates
- BTTS documentation
- Stakeholder outreach update
- Next steps
  - Future meeting topics and schedule
  - Action items



## Route Development: Example Network (V1)



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### Defining route types

- Route types roughly indicate statewide implementation priority.

<b>Cross-state Spines</b>	<ul style="list-style-type: none"><li>• Routes of statewide significance which connect to other states and link major urban areas.</li><li>• Due to interstate connections, these routes may be candidates for USBRS designation.</li></ul>
<b>Connecting Spurs</b>	<ul style="list-style-type: none"><li>• Routes of statewide significance which connect major urban areas, state/national parks, and other bicycle destinations.</li><li>• Provide important links between cross-state spines, with terminal points within state boundary.</li></ul>
<b>Regional Routes</b>	<ul style="list-style-type: none"><li>• Routes of regional significance which connect to natural/scenic areas and frequently form loops nearby or between mid-size or smaller population centers.</li></ul>

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**August 18, 2017**  
**DRAFT Conceptual Routes**  
(BAC WG/Wikimap)



**INTERIM**

Slides intended for discussion purposes only

**December 12, 2017**  
**Example Network**



**DRAFT**  
**NOT FINAL**

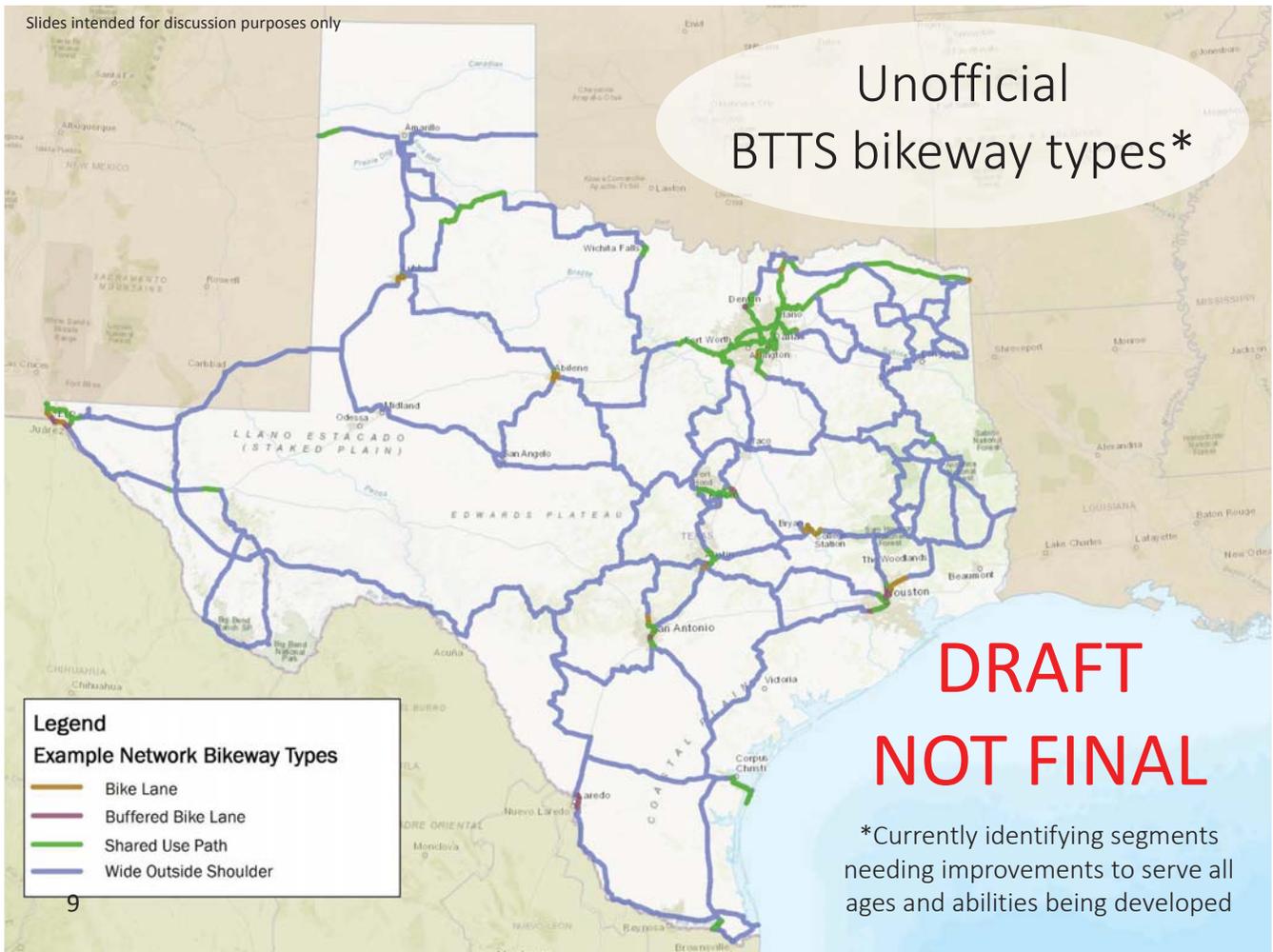
# Example Network (V1) Analysis

Example Network by Route Type	Miles	Percent of Total Network
Cross-State Spines	2,353	28%
Connecting Spurs	1,776	21%
Regional Routes	4,176	50%
Total	8,305	

- 1,431 miles of network were added or modified in response to regional stakeholder engagement (wikimap)



Unofficial  
BTTs bikeway types\*



**DRAFT  
NOT FINAL**

\*Currently identifying segments needing improvements to serve all ages and abilities being developed

## Example Network (V1) Bikeway Analysis

Example Network by Bikeway Type (proposed and existing)	Miles	Percent of Total Network
Bike Lane	84	1%
Buffered Bike Lane	63	1%
Shared Use Path	909	12%
Wide Outside Shoulder	7,249	87%
<b>Total</b>	<b>8,305</b>	

- Majority of network is rural/scenic where wide outside shoulder may exist or where widening is appropriate
- Other bikeway types (Shared Use Paths, Bike Lanes, and Buffered Bike Lanes) were identified based on existing infrastructure or planned infrastructure in bicycle plans
- Next step- Identify segments needing improvements to serve bicyclists of existing all ages and abilities

# UPDATED Bikeway Types Cost Estimates



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## BTTS bikeway types: *Capital and O&M Costs Summary Comparison*

Bikeway Type	Cost Ranges per mile (thousands)	
	Construction Costs	Annual Operation and Maintenance Costs
Widen Roadway for Wide Outside Shoulder <sup>1</sup>	\$670 – \$850	\$50 – \$75
Construct Shared Use Path <sup>2</sup>	\$550 – \$700	\$40 – \$55
Construct Sidepath <sup>2</sup>	\$560 – \$700	\$50 – \$80
Restripe Roadway for Bicycle Lane <sup>3</sup>	\$60 – \$80	\$40 – \$60
Widen Roadway for Bicycle Lane <sup>3</sup>	\$670 – \$850	
Restripe Roadway for Buffered Bicycle Lane <sup>4</sup>	\$100 – \$130	\$45 – \$70
Widen Roadway for Buffered Bicycle Lane <sup>4</sup>	\$820 – \$1,040	

NOTE: Construction costs do not include intersection considerations, right-of-way acquisition, contingency, mobilization, or project development. All costs are based upon TxDOT Average Bid Prices for Construction and Maintenance. All prices are still being refined as of 12/12/17.

1. Typically 10' wide with 8" Continuously Reinforced Concrete Pavement.

2. Typically 12' wide with 6" Continuously Reinforced Concrete Pavement.

3. Typically 5' wide with 8" Continuously Reinforced Concrete Pavement.

4. Typically 7' wide (5' lane and 2' buffer space identified with pavement markings) with 8" Continuously Reinforced Concrete Pavement.

## BTTS bikeway types:

### *Capital and O&M Cost Considerations*

- Construction costs do not include intersection considerations, right-of-way acquisition, or other project development costs.
- Urban, suburban, and rural contexts have different development patterns,
- Where sidepaths are located less than 5' from road edge, a crashworthy barrier would be required. This can significantly affect cost estimates.
  - A per mile cost estimate of a common barrier type, a concrete barrier is approximately \$265,000.
  - Additional barrier types include wooden or steel bollards.

## BTTS Documentation



## BTTS Documentation – 1 of 2

### • Tech Memos

Stand alone products describing portions of the study. These include:

1. Benefits of Bikeways and Trails
2. Routing Criteria and Example Network Development
3. Bikeway Design Criteria
4. Stakeholder Engagement



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## BTTS Documentation – 2 of 2

### • Static and Digital Maps

- Includes created and obtained GIS Files

### • Summary

- Graphic-oriented, 4-page, high-level overview

### • Final Report

- Executive Summary
- Contents of Tech Memos discussed in a single document
- Tech Memos included in appendix



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# Stakeholder Outreach UPDATE



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## Stakeholder Outreach Activities

### TxDOT Division Outreach

- Design (Nov 6)
- Traffic Operations (Dec 4)
- Transportation Planning and Programming (Dec 7)



### Other Outreach Activities

- TxDOT Austin District and CAMPO (Oct 30)
- Adventure Cycling Association (Nov 30)

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## Action Items

### TxDOT-PTN & CH2M:

- Continue TxDOT Division outreach and review
- Continue refining Example Network and cost estimates
- Apply bikeway construction costs to Example Network
- Prepare for final Working Group and BAC Meetings in January
- BTTS Documentation



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## Final Working Group Meeting

### January meeting

- WG #12, WebEx or in-person?
  - January 15<sup>th</sup> - 19<sup>th</sup>?

### Possible Topics:

- January BAC meeting
- Implementation
  - Costs per route
  - State-approach to Network Development



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# Questions



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## Thank You!!

**Bicycle Advisory  
Committee**

**Carl Seifert**

*Transportation Planner*

[carl.seifert@ch2m.com](mailto:carl.seifert@ch2m.com)

CH2M: 512-249-3351

TxDOT: 512-374-5213

**ch2m.**



*Public Transportation (PTN)*

**Teri Kaplan**

**Bonnie Sherman**

## Working Group Meeting #12

**ATTENDEES:** BAC Working Group: Billy Hibbs, DawnElla Rust, Bobby Gonzalez, and Karla Weaver  
TxDOT-PTN: Teri Kaplan and Bonnie Sherman;  
CH2M: Carl Seifert and Stephanie Lind

**MEETING FORMAT:** Conference Call via WebEx (visual & audio access for all)  
Prior to the meeting, a copy of the PowerPoint presentation (in pdf form) and agenda were distributed via email to the working group members.

**COPY TO:** TxDOT-PTN and file

**NOTES PREPARED BY:** CH2M and TxDOT-PTN

**DATE:** 1/19/18

## Meeting Objectives

- Discuss FINAL Example Network and analysis
- Discuss progress for bikeway type cost estimates
- Update stakeholder outreach activities
- Discuss next steps

## Summary

### Introduction

Carl introduced the agenda for the meeting. He noted intent of this final Working Group meeting is to seek final input and approval of the Working Group prior to the Bicycle Advisory Committee (BAC) meeting on Monday, January 22<sup>nd</sup>, 2018. The project team is seeking a BAC endorsement of the study during this meeting. The project team and Working Group members then discussed drafting specific language to reflect the type of approval sought by the project team. Specifically, Working Group members noted that the language should be strong and suggested that “the BAC strongly endorses the study and its recommendations.”

### Example Network

Carl shared the final alignments of the BTTS Example Network. The Example Network’s over 8,300 miles were shown categorized into the network categories:

- Cross-state spines
- Connecting spurs
- Regional routes

It was reiterated with a note on every slide that routes represent an application of qualitative and quantitative criteria established as part of the study and that further local-level analysis and engagement would be required for future route development. The routes follow existing or planned shared use paths, buffered bicycle lanes, or bicycle lanes and wide shoulders that meet BTTS design minimums. Gaps between these existing or planned bikeways were identified as “To be determined”

and will require further local level investigation; however, shared use paths are preferred as part of an all-ages and all-abilities network. These gaps were shown as future recommended sections on the map entitled “Example Network Segments Where Bikeway Type Needs to Be Determined.” These gaps in the network represent approximately 50 percent of the proposed network. See the corresponding charts in the attached presentation for additional information.

#### Discussion:

- The BTTTS Example Network is located proximate to 65-75% of Texas parks, historical markers, Texas Main Street Communities, small towns, and urban areas. Billy asked if the consultant team could assess how many small towns are directly intersected by the proposed BTTTS network. Carl will work to have this information ready by the BAC meeting on Monday.
- Billy felt it is important to articulate that the workgroup looked at a number of routes that crossed the state and the ones recommended align closely with USBRS corridors identified by Adventure Cycling in association with AASHTO. Discussion followed regarding the creation of a map product layering USBRS routes with the Example Network.
- The group discussed naming these routes, ultimately, they thought there needed to be more discussion about this. Suggestions included:
  - Short names implying the connections (ex: TX-ARK)
  - Historic names (ex: Alamo Trail)
  - Texas-centric (ex: Armadillo, Bluebonnet Trail)

## Recommended Bikeway Types and Design Criteria

Carl noted that these are the same bikeway types that have been presented previously with refinements as the study team met with TxDOT division staff.

- Shared Use Path/Sidepath
- Buffered Bicycle Lane
- Bicycle Lane
- Wide outside shoulder

### **Discussion on Bikeway Maintenance and Operation Cost Estimates**

Bikeway cost estimates have been refined and are currently being reviewed within TxDOT. Initial estimates only include materials and labor. TxDOT and the project team are investigating TxDOT common practices for showing per mile bicycle costs.

#### Discussion:

- Working group members noted that a \$1 million per mile cost estimate is often used. For comparison, members highlighted that NCTCOG has \$6 Billion in bikeway investments within their jurisdiction. Depending on the BTTTS audience, this may be an exceptional amount of money or may be considered manageable.

## Review of Stakeholder Outreach

Carl shared a summary table showing breadth and depth of stakeholder engagement throughout the BTTTS. Additionally, it was highlighted that during a recent meeting with Bike Texas, BTTTS products were

shared. BikeTexas is very supportive of the BTTS products and recommendations. There is a plan to present details of the BTTS at the Texas Trails and Active Transportation Conference in May 2018.

## Next Steps

The BTTS has accomplished several important activities related to advancing bicycle tourism statewide.

Carl discussed some of the consultants proposed recommendations, those include:

- Incorporating aspects of the study into the next Long-Range Transportation Plan
- Make Example Route Networks available on the Statewide Planning Map
- Take steps toward creating a Texas Tourism Trail Plan or a Texas Bicycle Plan

### Discussion:

- Working Group members emphasized the importance of engaging the TxDOT Transportation Commissioners (TTC) and gaining their support. Billy recommended making a presentation to TTC.
- Karla recommended that the consultant team look into which districts could be impacted and notice could be sent to those districts – so they could include this network into their future projects.
- Carl noted that an additional workgroup meeting may be necessary.

## Action Items

### **CH2M/PTN:**

- Continue TxDOT Division outreach and review
- Continue refining Example Network and cost estimates
- Apply bikeway construction costs to Example Network
- Present at next week's BAC Meeting
- BTTS Documentation

### **Working Group:**

- Support the BTTS during next week's BAC Meeting

# TxDOT Bicycle Tourism Trails Study

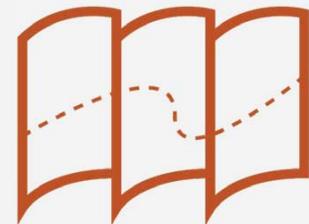
Working Group- Meeting #12

January 19, 2018

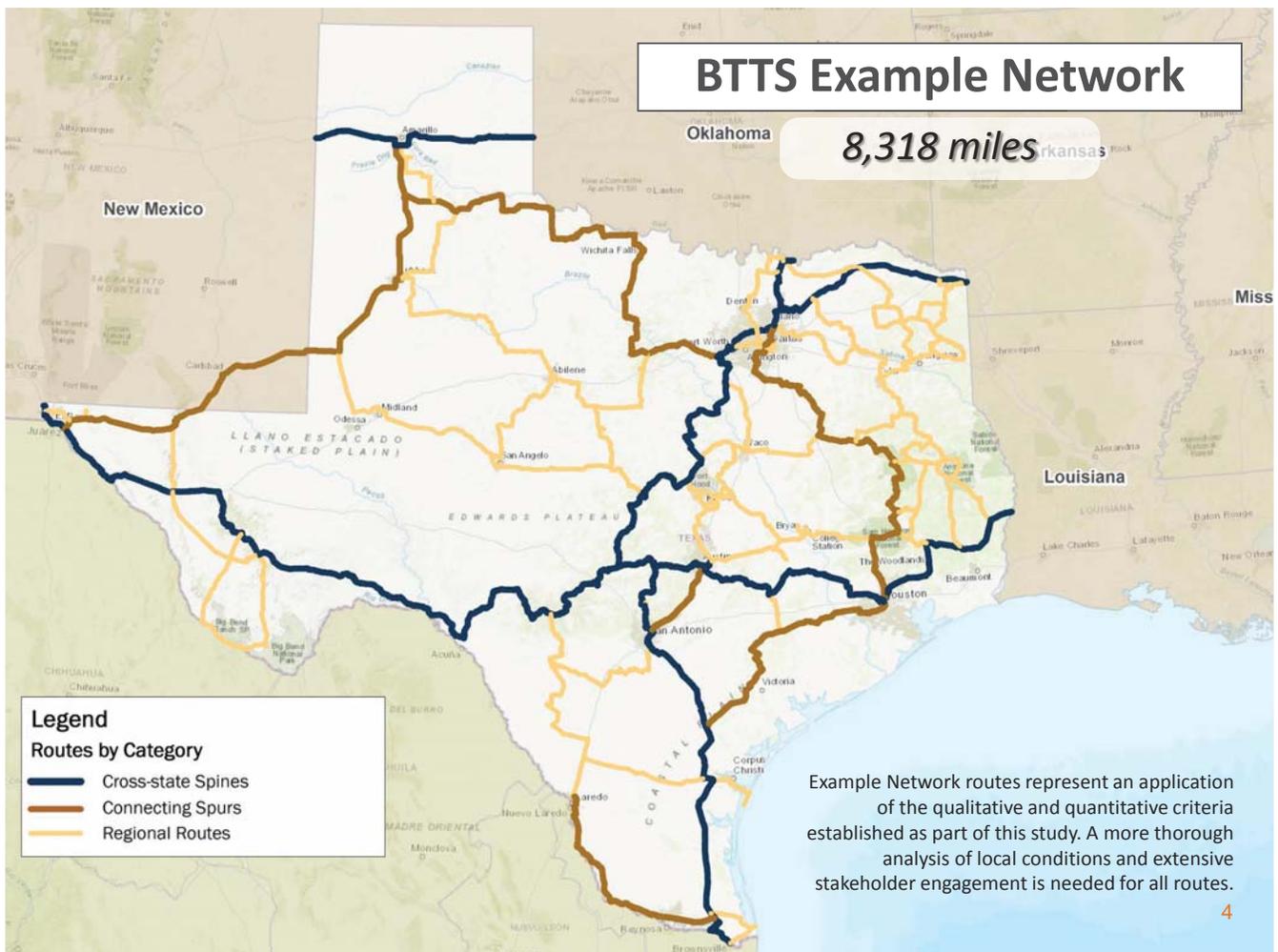
Discussion DRAFT

## Agenda

- Example Network
  - Bikeway types on the Example Network
  - Analysis: Cross-State Spine
- Recommended Bikeway Types and Design Criteria
- Discussion on Bikeway Maintenance and Operation Cost Estimates
- Review of Stakeholder Outreach
- Next Steps

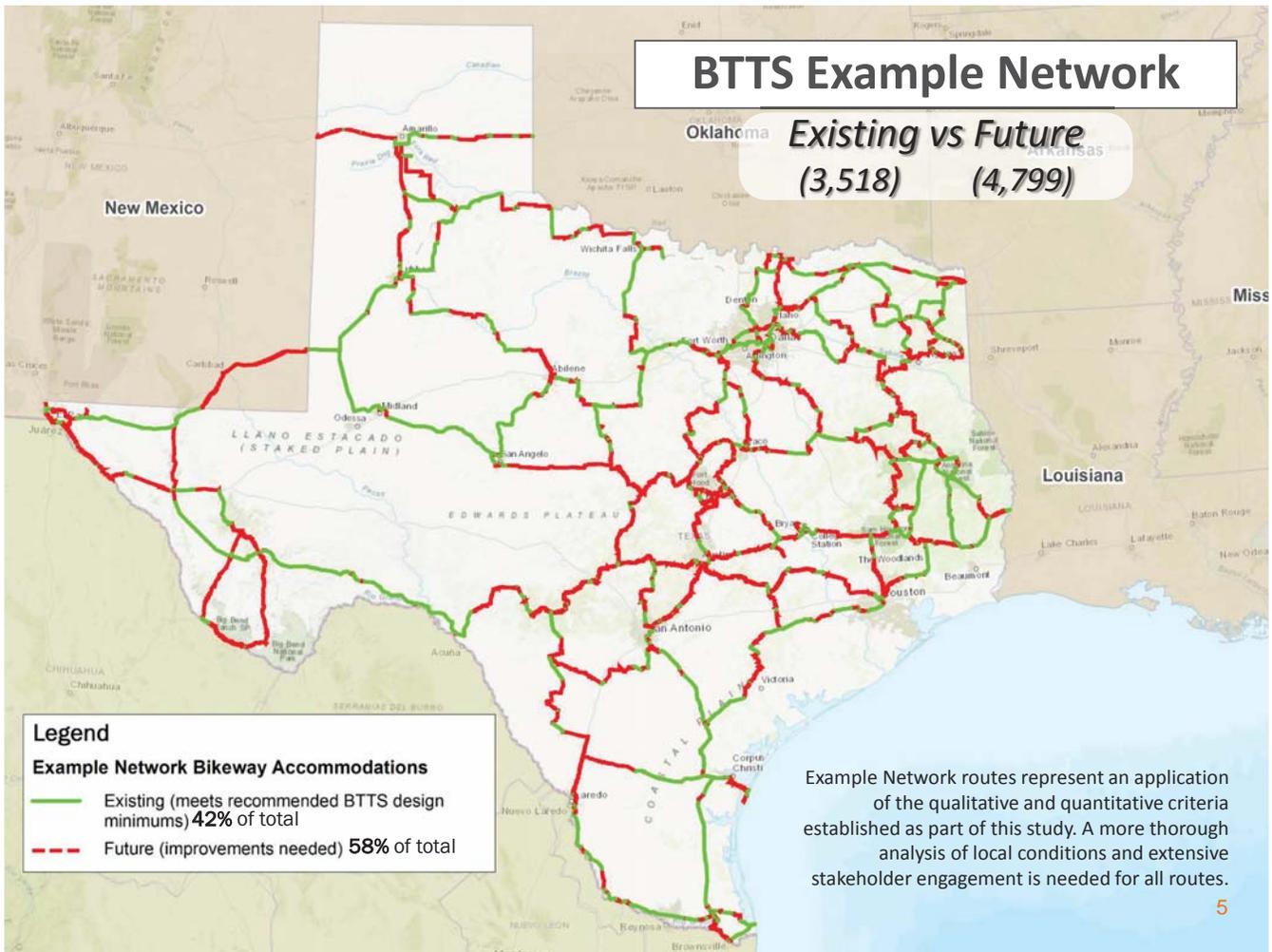


# Example Network



# BTTS Example Network

Oklahoma **Existing vs Future**  
 (3,518) (4,799)



### Legend

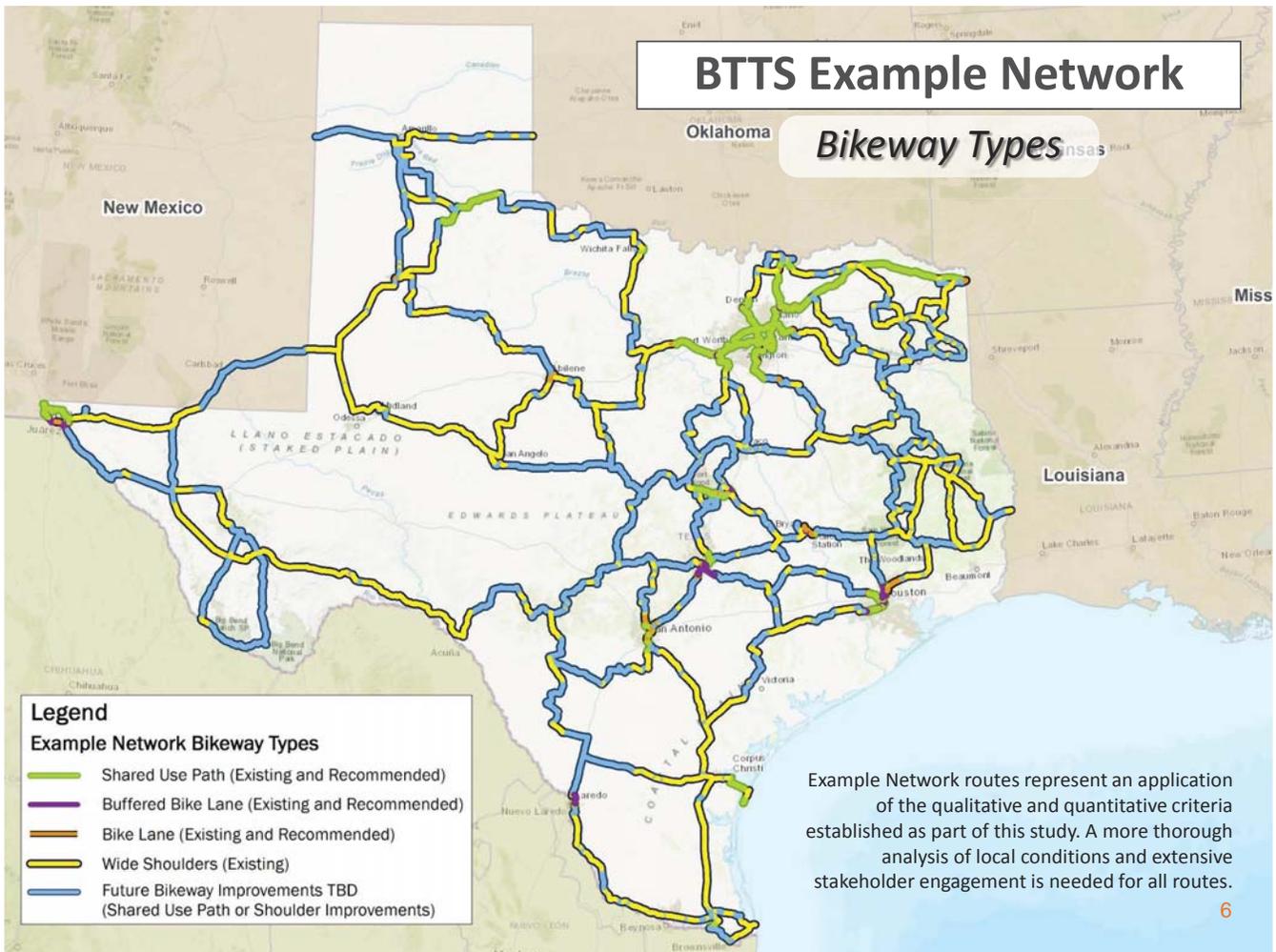
#### Example Network Bikeway Accommodations

- Existing (meets recommended BTTS design minimums) **42%** of total
- - - Future (improvements needed) **58%** of total

Example Network routes represent an application of the qualitative and quantitative criteria established as part of this study. A more thorough analysis of local conditions and extensive stakeholder engagement is needed for all routes.

# BTTS Example Network

Oklahoma **Bikeway Types**



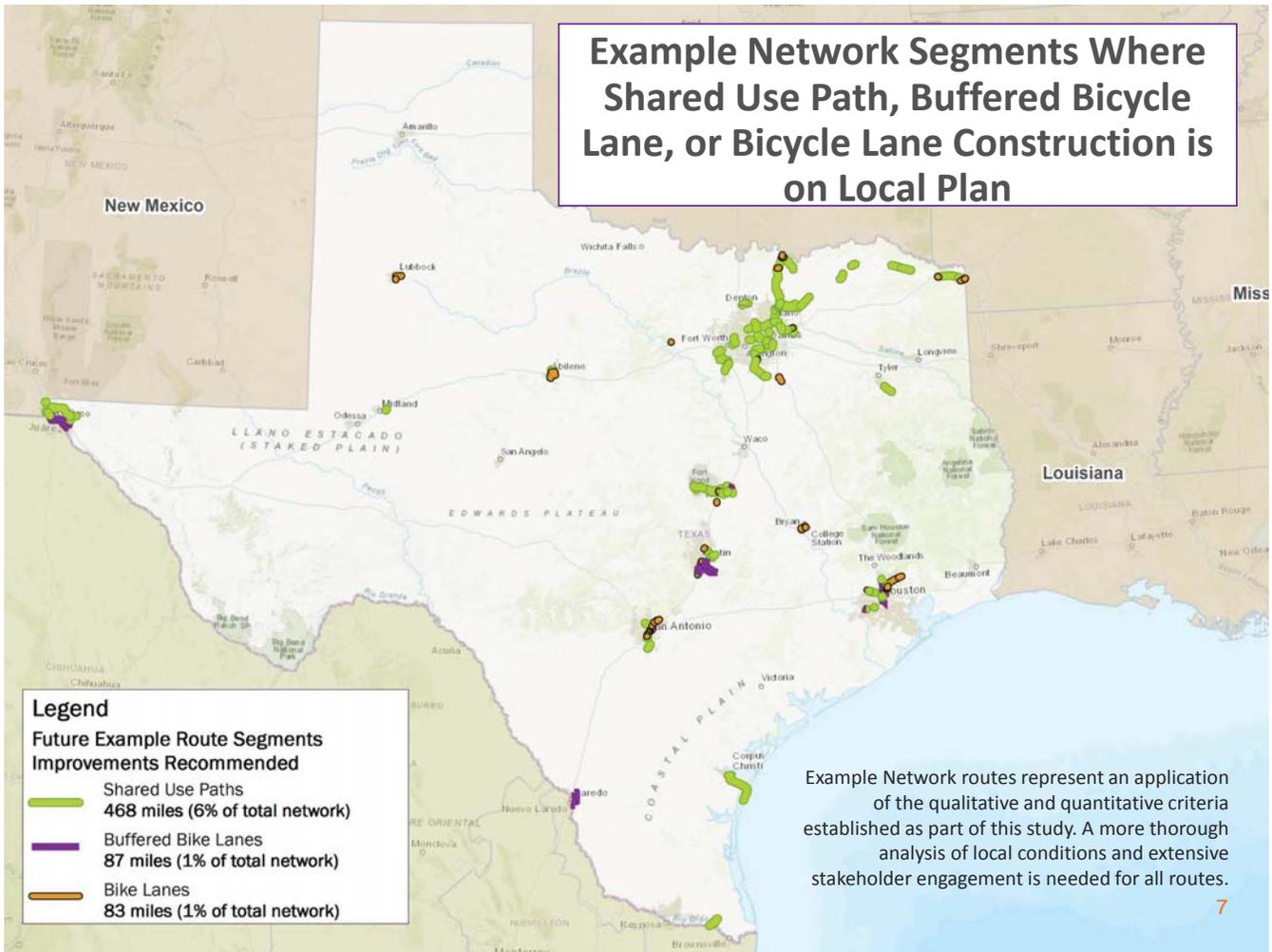
### Legend

#### Example Network Bikeway Types

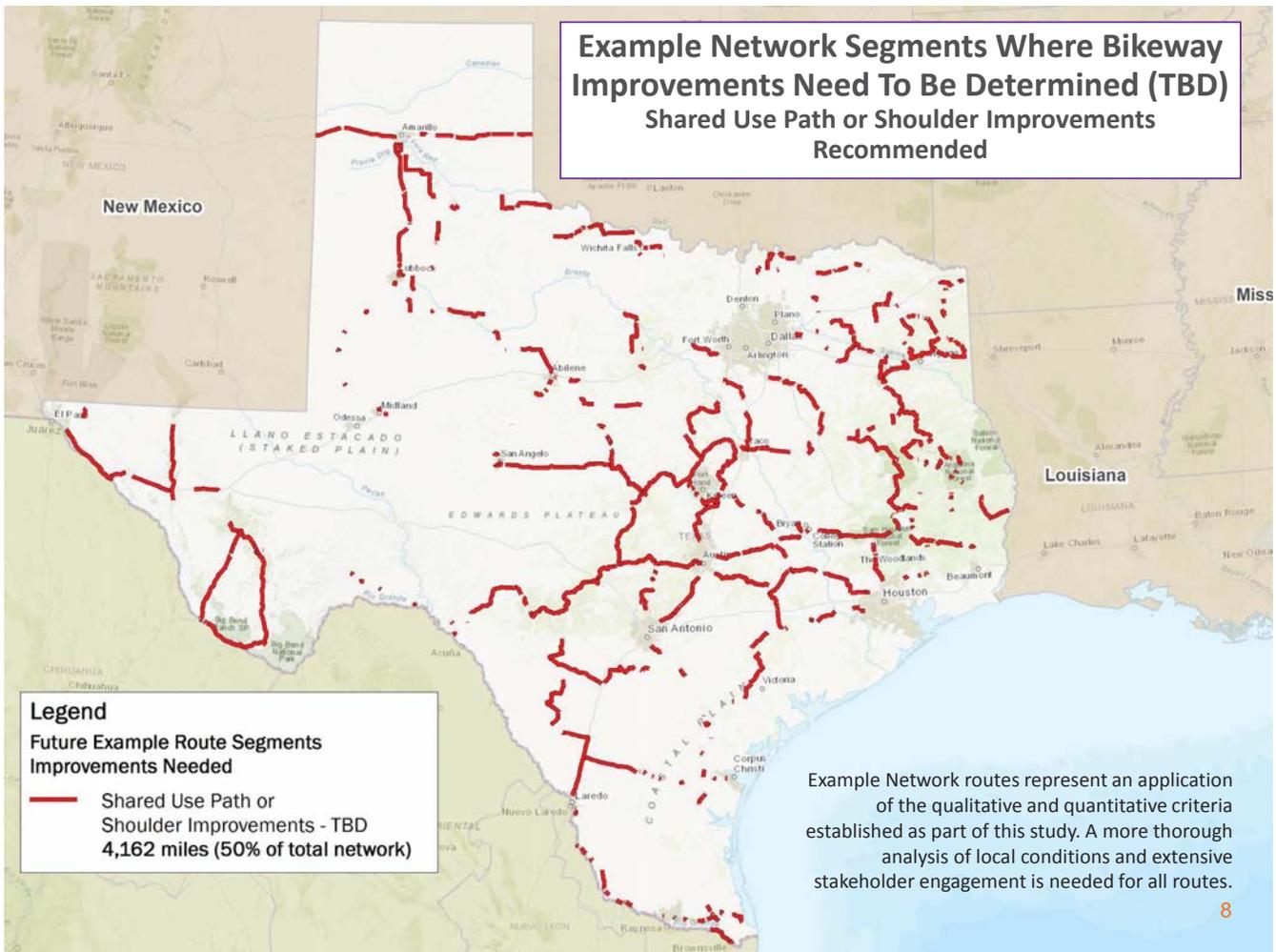
- Shared Use Path (Existing and Recommended)
- Buffered Bike Lane (Existing and Recommended)
- Bike Lane (Existing and Recommended)
- Wide Shoulders (Existing)
- Future Bikeway Improvements TBD (Shared Use Path or Shoulder Improvements)

Example Network routes represent an application of the qualitative and quantitative criteria established as part of this study. A more thorough analysis of local conditions and extensive stakeholder engagement is needed for all routes.

## Example Network Segments Where Shared Use Path, Buffered Bicycle Lane, or Bicycle Lane Construction is on Local Plan



## Example Network Segments Where Bikeway Improvements Need To Be Determined (TBD) Shared Use Path or Shoulder Improvements Recommended



## BTTs Example Network Analysis - 1 of 3

Route Category	Miles	Percent of Total
Cross-State Spines	2,346	28%
Connecting Spurs	1,809	22%
Regional Routes	4,163	50%

Summary of improvement status across the Example Network:

- **42%** of the network meets BTTs minimum bikeway design recommendations
- **58%** requires construction improvements

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## BTTs Example Network Analysis - 2 of 3

Bikeway Accommodation	Shared Use Path (SUP)/ Sidepath	Buffered Bicycle Lane	Bicycle Lane	Wide Shoulder	To Be Determined
Meets BTTs Bikeway Requirements	6%	0.0%	0.3%	36%	-
Recommended Improvements (Local Plans)	6%	1%	1%	-	-
Improvements Needed (Either SUP or Shoulder Improvements)	-	-	-	-	50%
Total Mileage	931	90	111	3,024	4,162

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## BTTs Example Network Analysis - 3 of 3

Economic Development and Tourism-related characteristics	Within 10 miles of BTTs Example Network	
	Number	Percent
National Parks/Forests/Historic Sites	18	69%
State Parks/Forests/Historic Sites	110	68%
Historical Markers	6,705	62%
Texas Main Street Communities	65	75%
Small Towns (under 5,000 ppl)	540	62%
Medium Cities (5,000 to 200,000 ppl)	243	75%
Large Urban Areas (over 200,000 ppl)	13	100%

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## Cross-State Spine Analysis

### Cross-State Spines:

- |                             |             |
|-----------------------------|-------------|
| 1. Southern Tier/USBRS 90   | 1,136 miles |
| 2. Oklahoma-Mexico/USBRS 55 | 866 miles   |
| 3. Panhandle/USBRS 66       | 192 miles   |
| 4. Arkansas Connection      | 178 miles   |



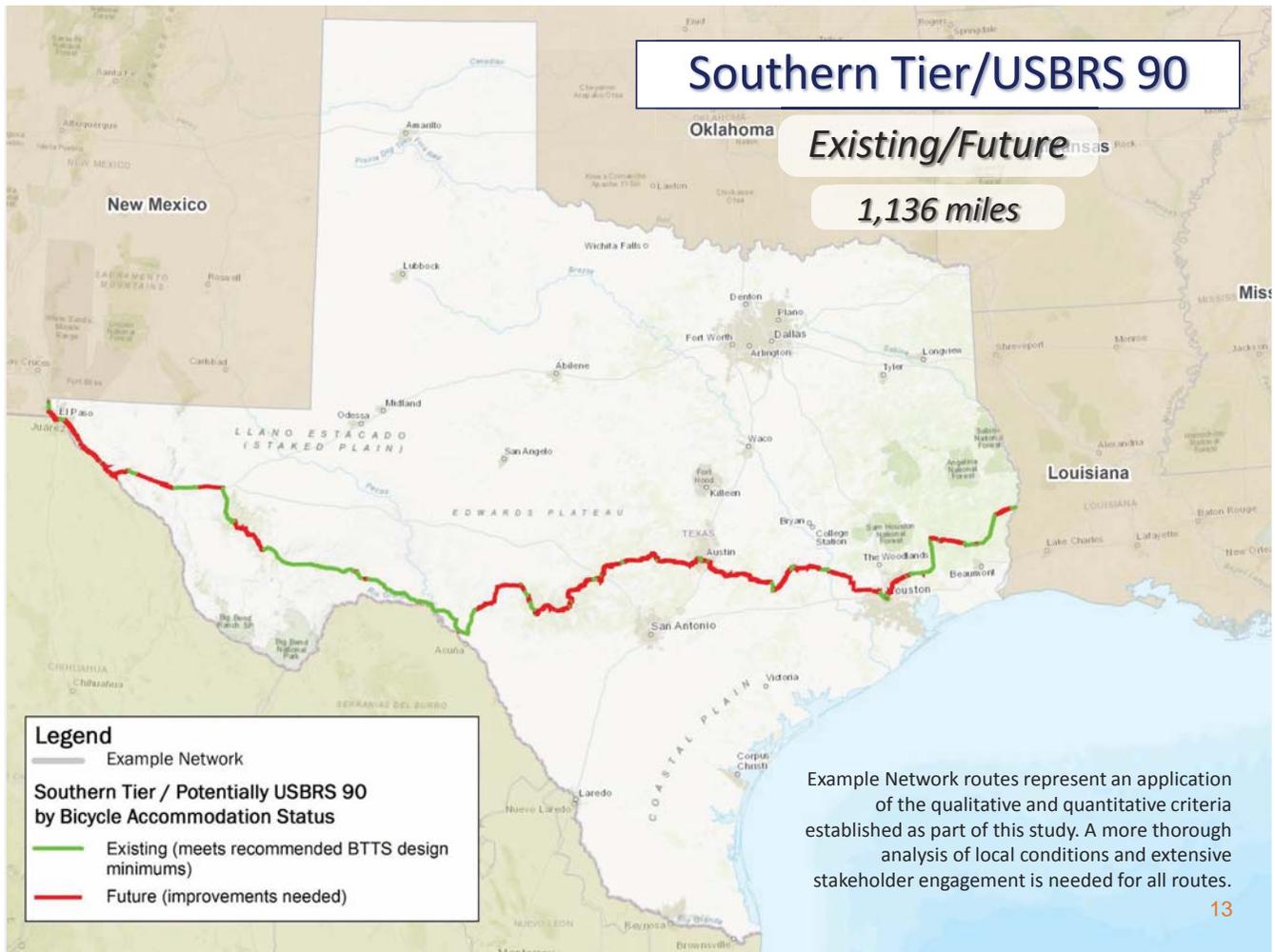
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# Southern Tier/USBRS 90

Existing/Future

1,136 miles



### Legend

Example Network

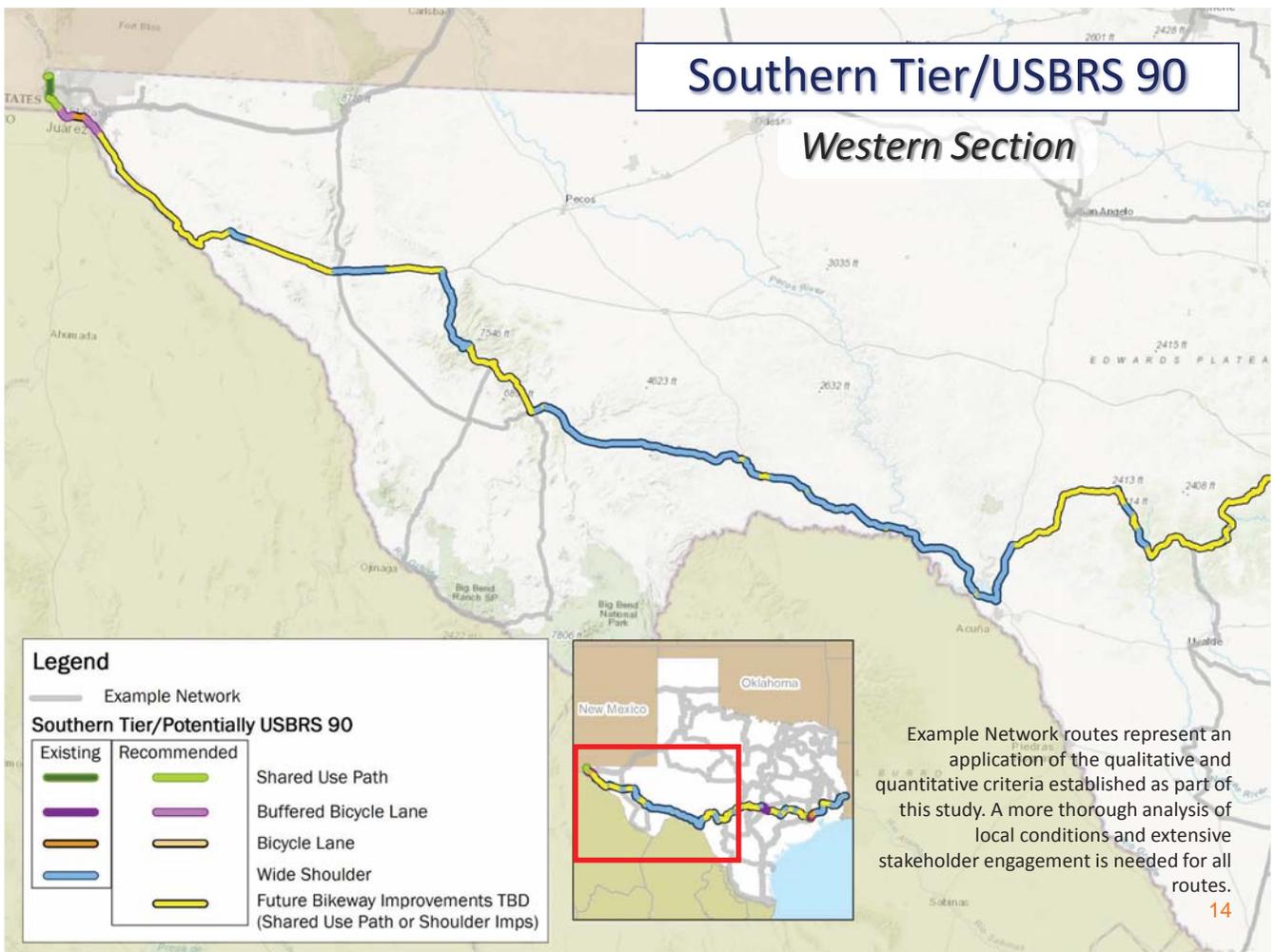
### Southern Tier / Potentially USBRS 90 by Bicycle Accommodation Status

- Existing (meets recommended BTTTS design minimums)
- Future (improvements needed)

Example Network routes represent an application of the qualitative and quantitative criteria established as part of this study. A more thorough analysis of local conditions and extensive stakeholder engagement is needed for all routes.

# Southern Tier/USBRS 90

Western Section



### Legend

Example Network

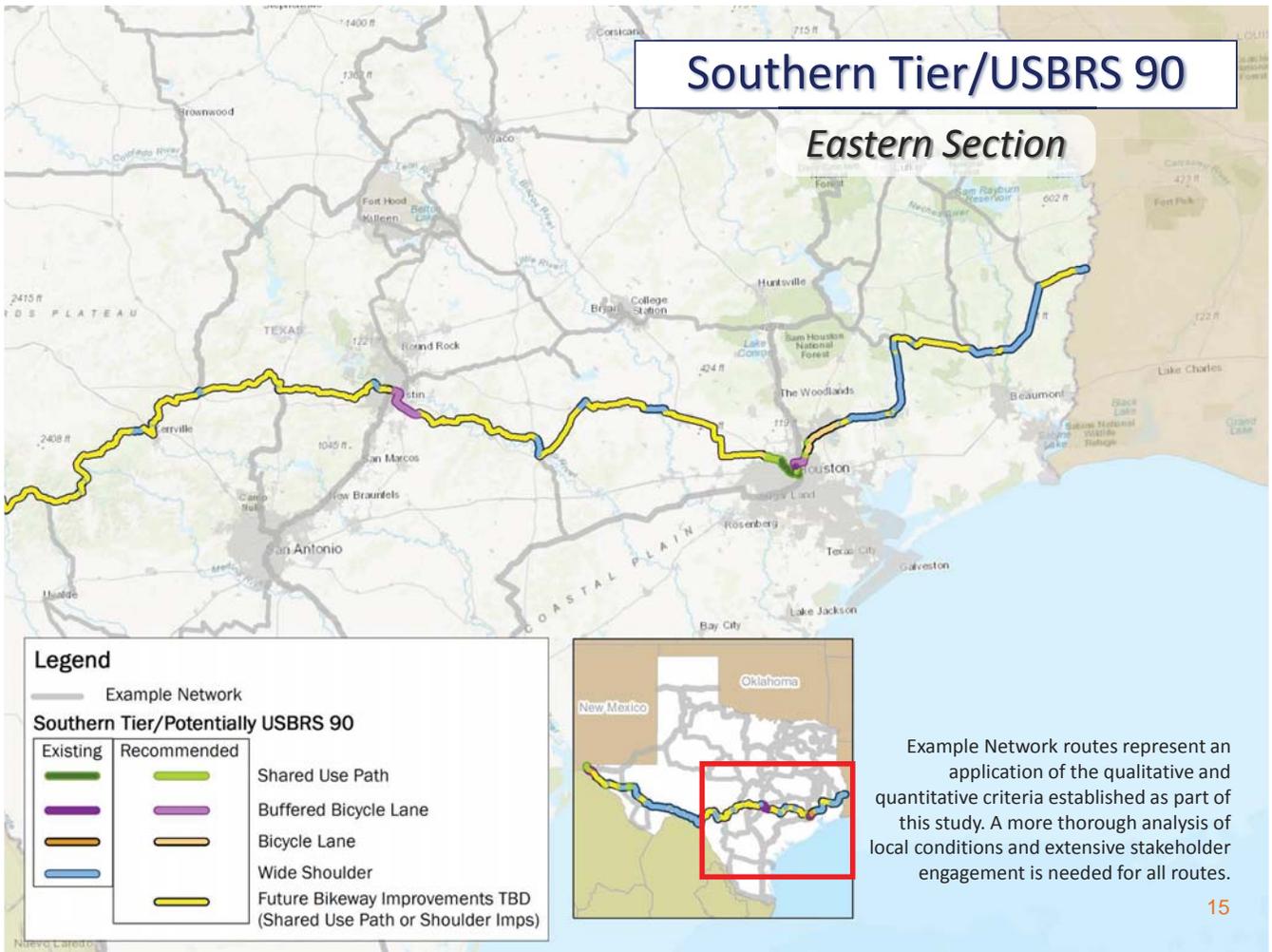
### Southern Tier/Potentially USBRS 90

- | Existing                              | Recommended                           |  |
|---------------------------------------|---------------------------------------|--|
| <span style="color: green;">—</span>  | <span style="color: green;">—</span>  | Shared Use Path  |
| <span style="color: purple;">—</span> | <span style="color: purple;">—</span> | Buffered Bicycle Lane  |
| <span style="color: orange;">—</span> | <span style="color: orange;">—</span> | Bicycle Lane   |
| <span style="color: blue;">—</span>   | <span style="color: blue;">—</span>   | Wide Shoulder  |
| <span style="color: yellow;">—</span> | <span style="color: yellow;">—</span> | Future Bikeway Improvements TBD (Shared Use Path or Shoulder Imps) |

Example Network routes represent an application of the qualitative and quantitative criteria established as part of this study. A more thorough analysis of local conditions and extensive stakeholder engagement is needed for all routes.

# Southern Tier/USBRS 90

## Eastern Section



**Legend**

Example Network

**Southern Tier/Potentially USBRS 90**

Existing	Recommended	
		Shared Use Path
		Buffered Bicycle Lane
		Bicycle Lane
		Wide Shoulder
		Future Bikeway Improvements TBD (Shared Use Path or Shoulder Imps)

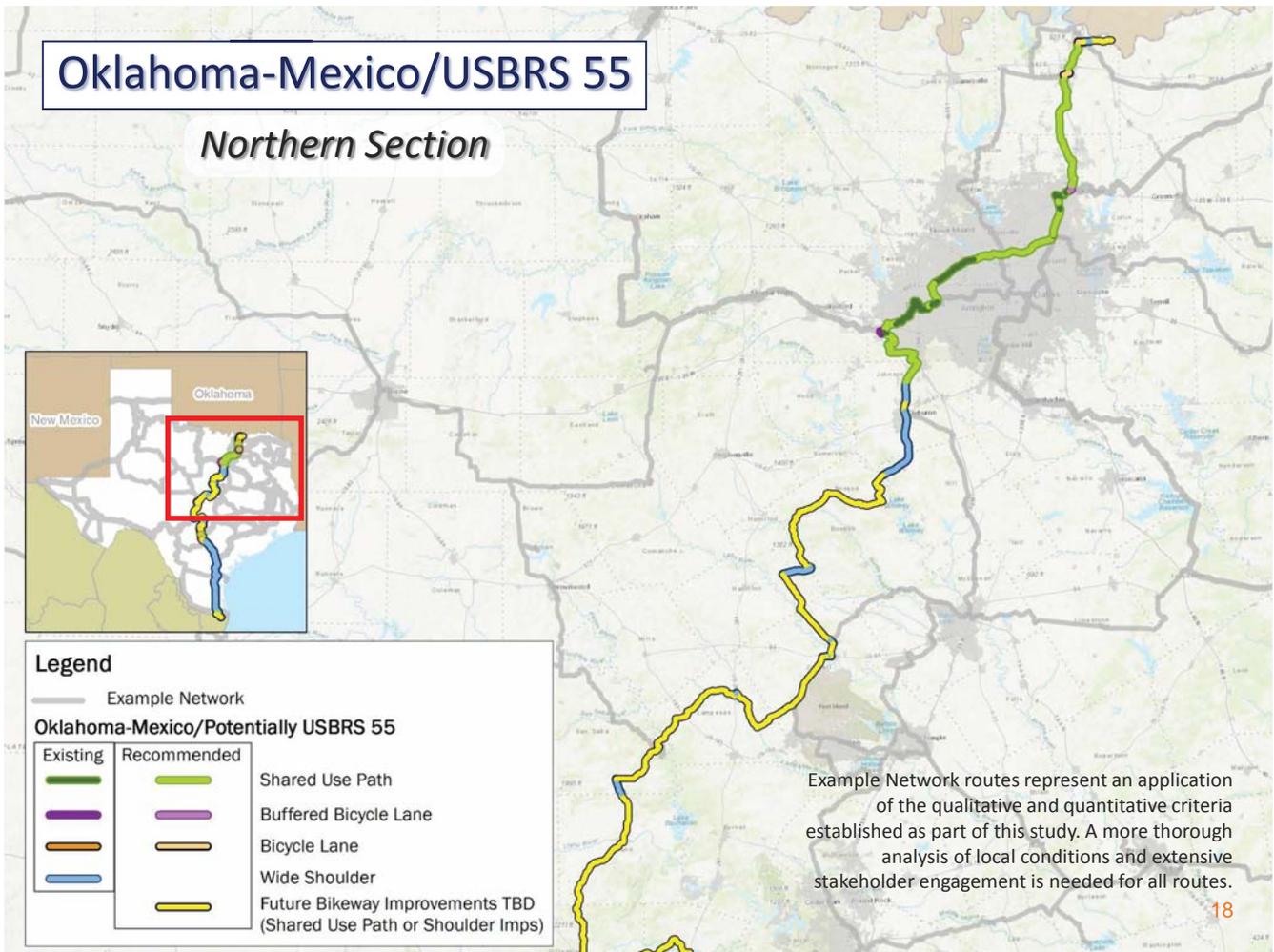
Example Network routes represent an application of the qualitative and quantitative criteria established as part of this study. A more thorough analysis of local conditions and extensive stakeholder engagement is needed for all routes.

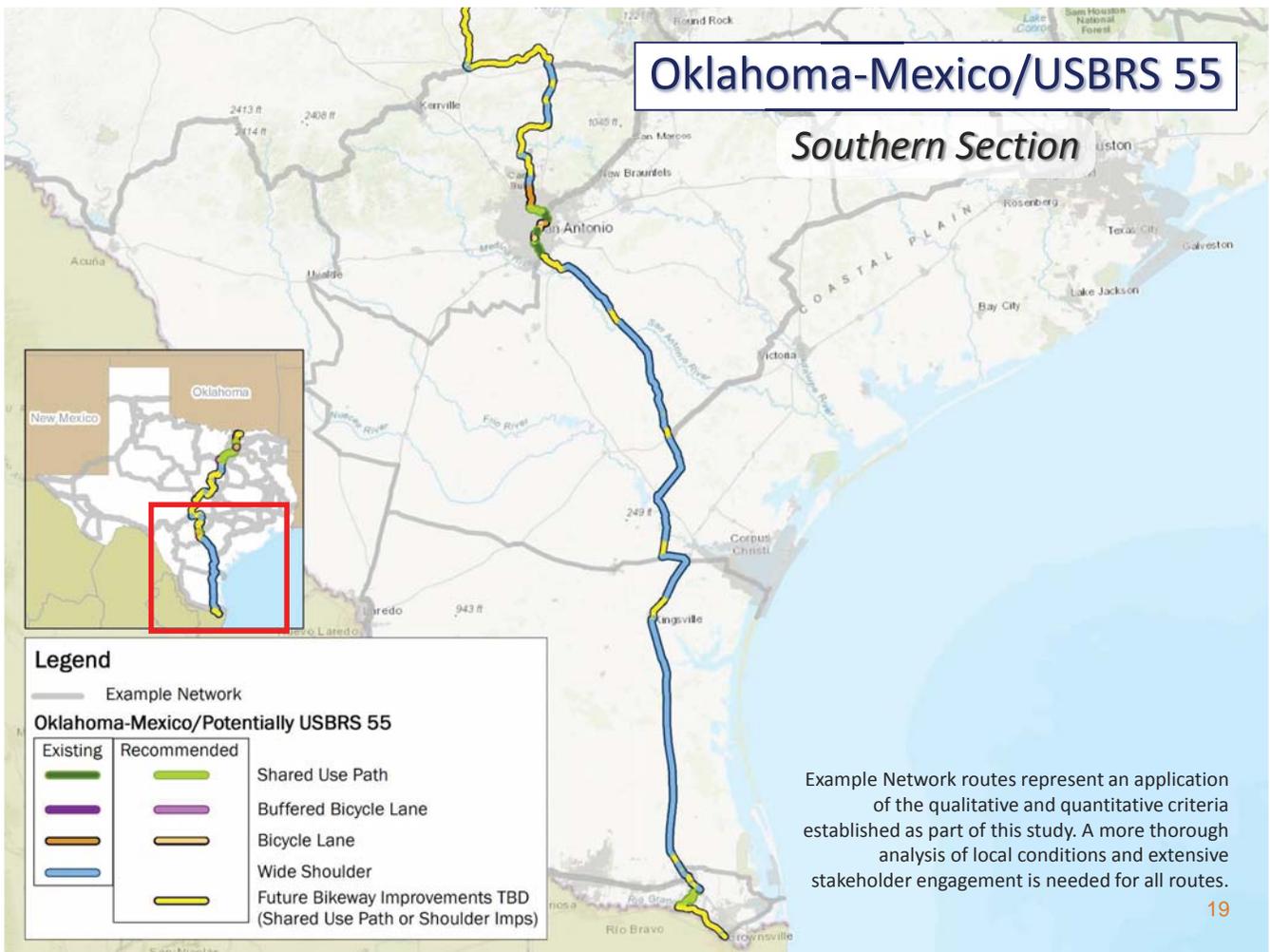
## Southern Tier Details

Accommodation	Shared Use Path/Sidepath	Buffered Bicycle Lane	Bicycle Lane	Wide Shoulder	To Be Determined
Existing	3%	0%	0%	34%	-
Future	2%	3%	2%	-	56%
Total Mileage	43	38	22	391	642

Overall Improvement Status	Miles	Percent of Spine
Meets BTTS Bikeway Minimum Recommendations	416	37%
Needed Bikeway Improvement	720	63%
Total Mileage	1,136	

Cost Estimate Ranges (millions)	
Initial Construction	Annual Operations & Maintenance
UNDER \$	DEVELOPMENT \$





## Oklahoma-Mexico/USBRS 55 Details

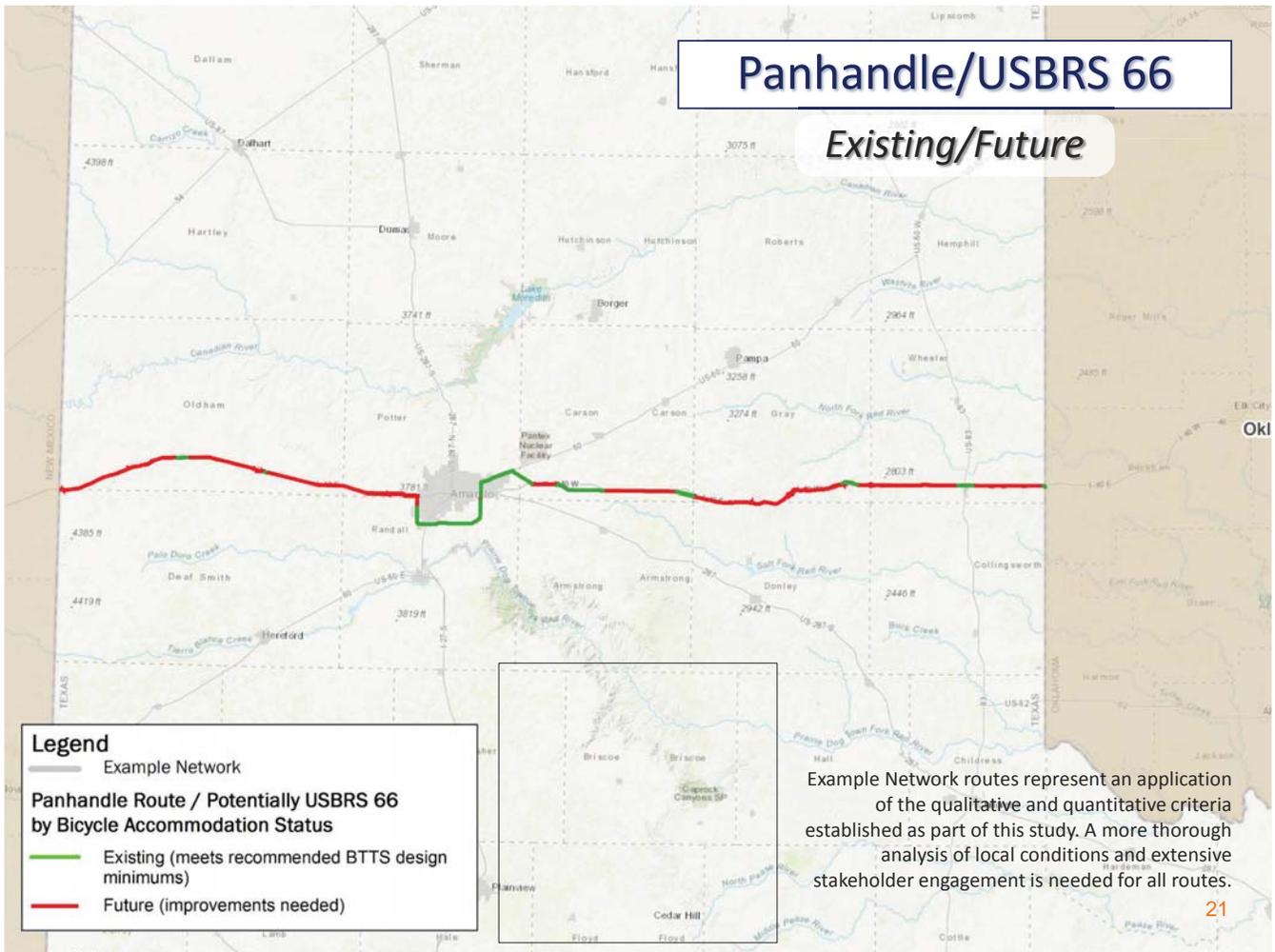
Accommodation	Shared Use Path/ Sidepath	Buffered Bicycle Lane	Bicycle Lane	Wide Shoulder	To Be Determined
Existing	7%	0%	1%	33%	-
Future	16%	0%	1%	-	42%
Total Mileage	194	4	17	284	367

Overall Improvement Status	Miles	Percent of Spine
Meets BTTS Bikeway Minimum Recommendations	355	41%
Needed Bikeway Improvement	511	59%
Total Mileage	866	

Cost Estimate Ranges (millions)	
Initial Construction	Annual Operations & Maintenance
UNDER \$	DEVELOPMENT \$

# Panhandle/USBRS 66

Existing/Future



### Legend

Example Network

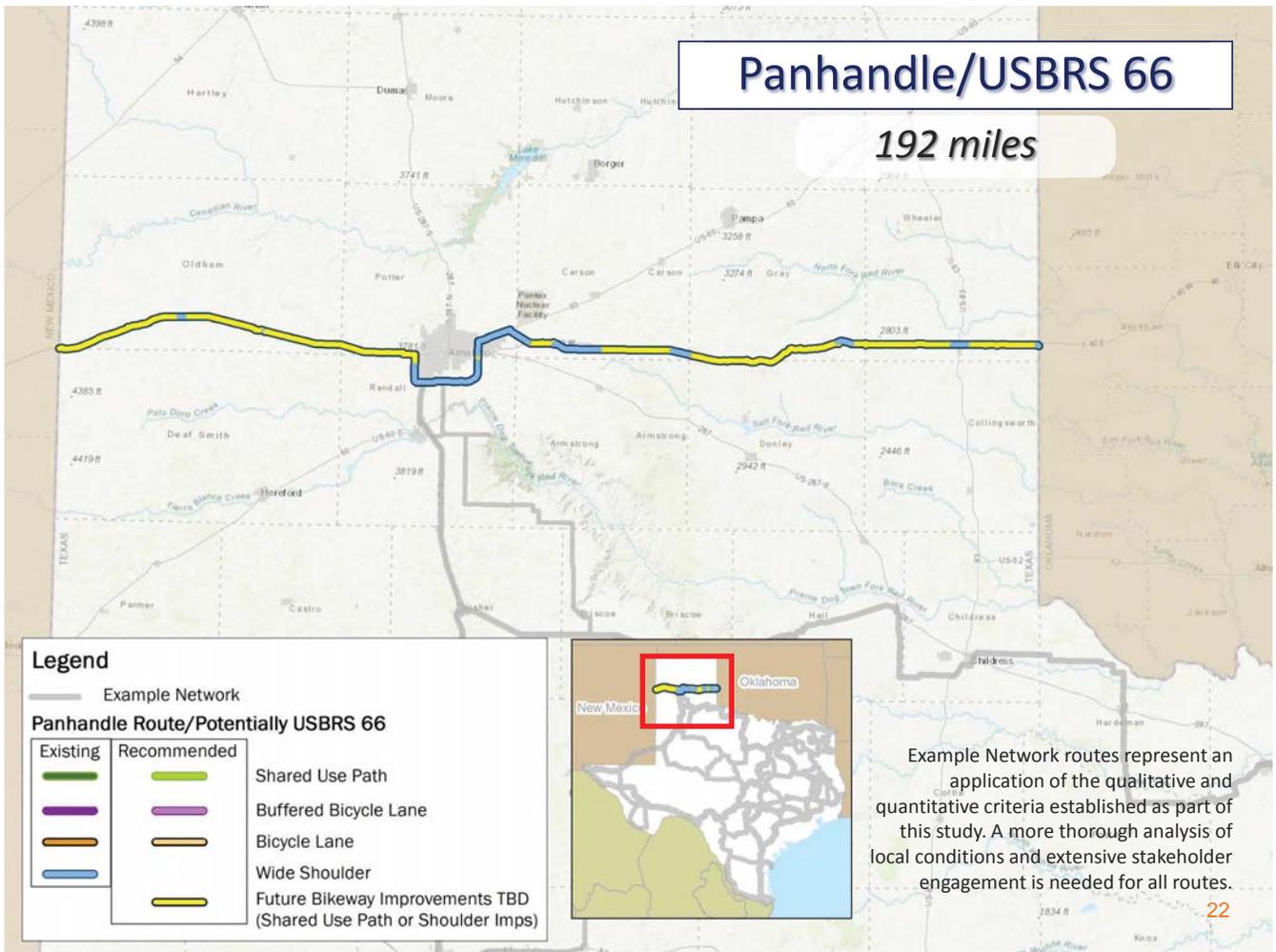
### Panhandle Route / Potentially USBRS 66 by Bicycle Accommodation Status

- Existing (meets recommended BTSS design minimums)
- Future (improvements needed)

Example Network routes represent an application of the qualitative and quantitative criteria established as part of this study. A more thorough analysis of local conditions and extensive stakeholder engagement is needed for all routes.

# Panhandle/USBRS 66

192 miles



### Legend

Example Network

### Panhandle Route/Potentially USBRS 66

- | Existing                              | Recommended                           |  |
|---------------------------------------|---------------------------------------|--|
| <span style="color: green;">—</span>  | <span style="color: green;">—</span>  | Shared Use Path  |
| <span style="color: purple;">—</span> | <span style="color: purple;">—</span> | Buffered Bicycle Lane  |
| <span style="color: orange;">—</span> | <span style="color: orange;">—</span> | Bicycle Lane   |
| <span style="color: blue;">—</span>   | <span style="color: blue;">—</span>   | Wide Shoulder  |
| <span style="color: yellow;">—</span> | <span style="color: yellow;">—</span> | Future Bikeway Improvements TBD (Shared Use Path or Shoulder Imps) |

Example Network routes represent an application of the qualitative and quantitative criteria established as part of this study. A more thorough analysis of local conditions and extensive stakeholder engagement is needed for all routes.

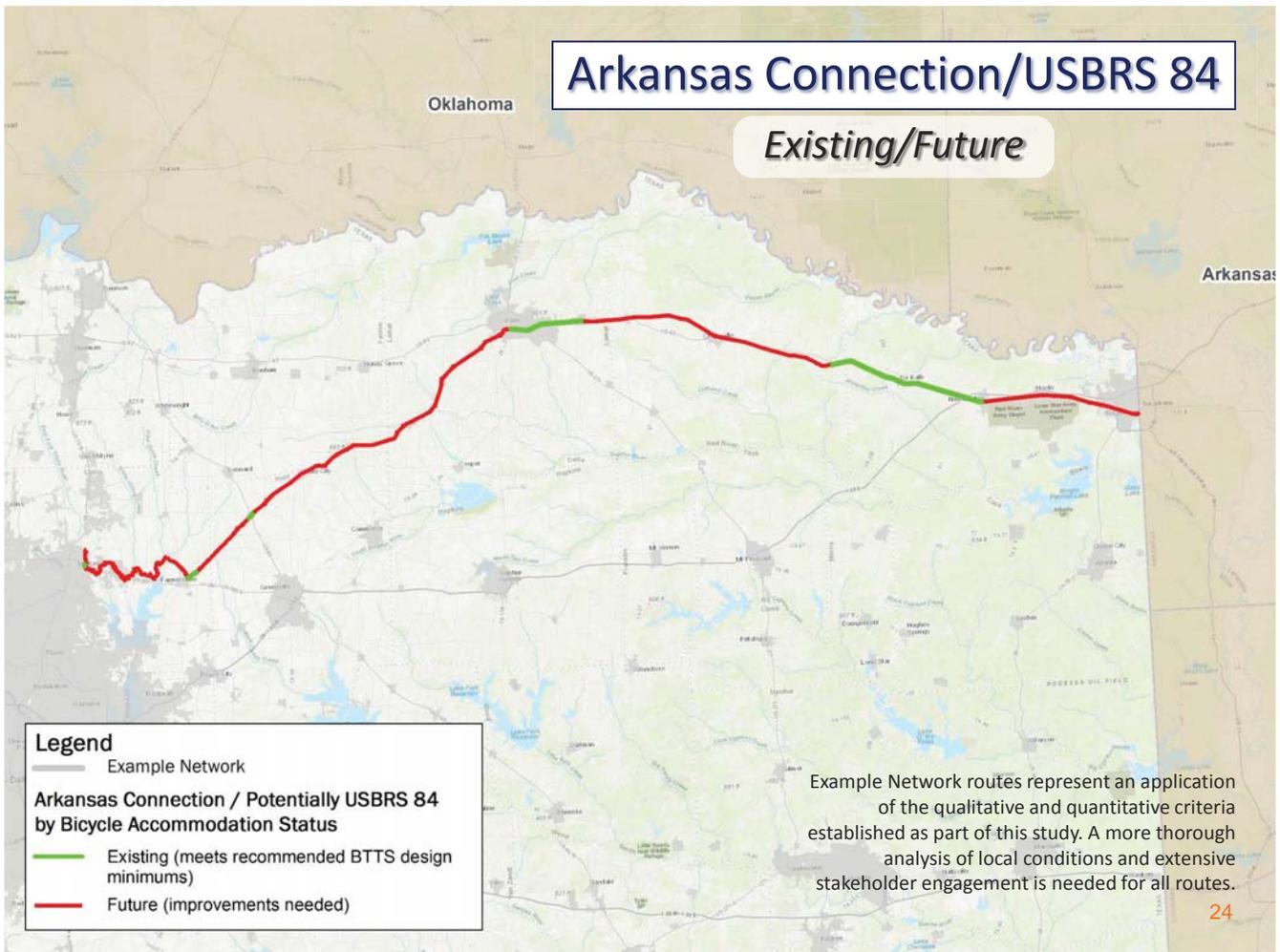
# Panhandle/USBRS 66 Details

Accommodation	Shared Use Path/Sidepath	Buffered Bicycle Lane	Bicycle Lane	Wide Shoulder	To Be Determined
Existing	-	-	-	26%	-
Future	-	-	-	-	74%
Total Mileage	-	-	-	50	142

Overall Improvement Status	Miles	Percent of Spine
Meets BTTs Bikeway Minimum Recommendations	50	26%
Needed Bikeway Improvement	142	74%
Total Mileage	192	

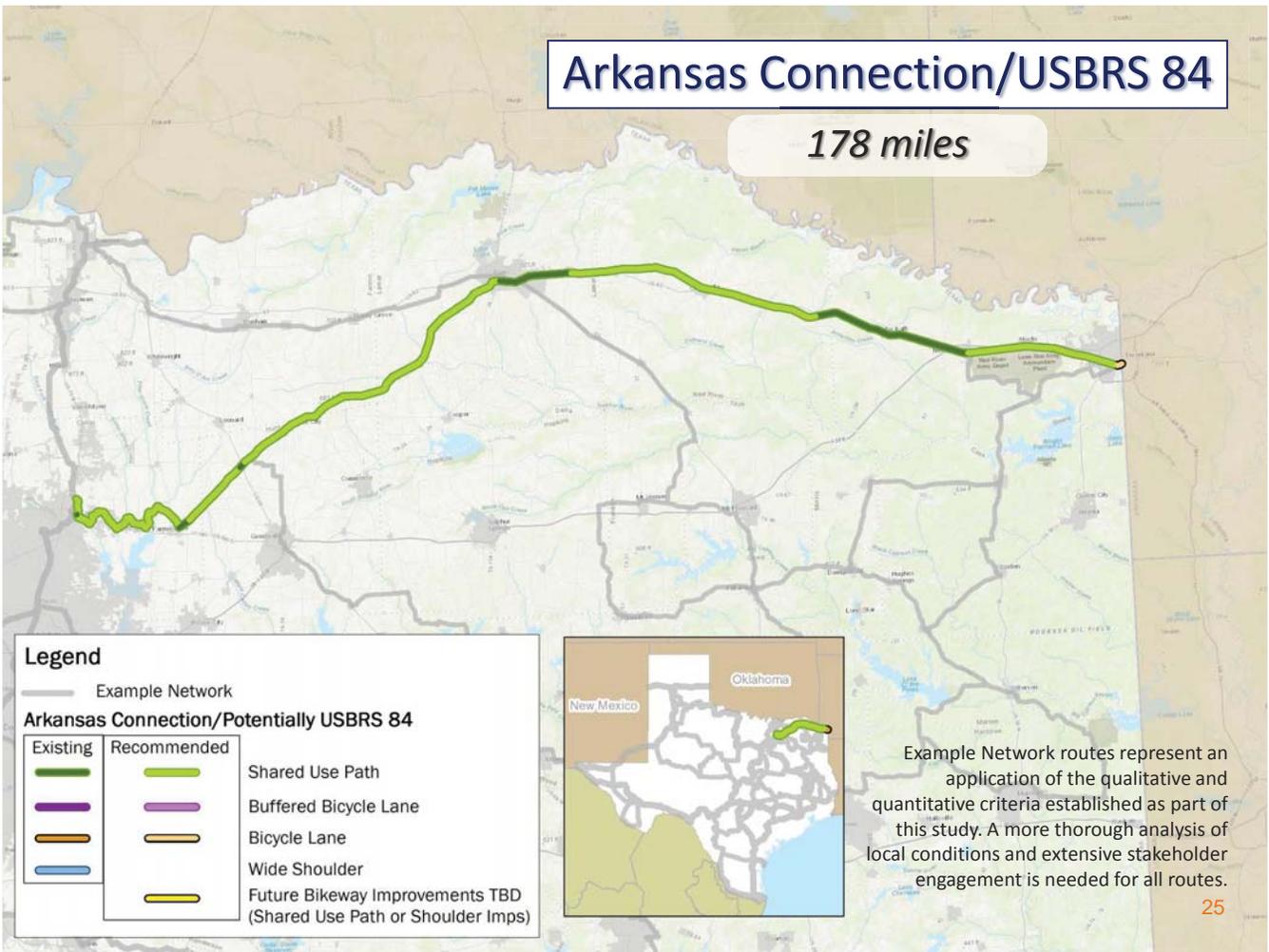
Cost Estimate Ranges (millions)	
Initial Construction	Annual Operations & Maintenance
UNDER \$	DEVELOPMENT \$

Slides intended for discussion purposes only



# Arkansas Connection/USBRS 84

178 miles



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## Arkansas Connection/USBRS 84

Accommodation	Shared Use Path/Sidepath	Buffered Bicycle Lane	Bicycle Lane	Wide Shoulder	To Be Determined
Existing	20%	-	-	-	-
Future	80%	-	0%	-	-
<b>Total Mileage</b>	<b>177</b>	<b>-</b>	<b>1</b>	<b>-</b>	<b>-</b>

Overall Improvement Status	Miles	Percent of Spine
Meets BTTS Bikeway Minimum Recommendations	36	20%
Needed Bikeway Improvement	142	80%
<b>Total Mileage</b>	<b>178</b>	

Cost Estimate Ranges (millions)	
Initial Construction	Annual Operations & Maintenance
\$	\$
UNDER DEVELOPMENT	

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## Recommended Bikeway Types and Design Criteria



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## BTTS recommended bikeway types and design criteria

- Shared use path/Sidepath
- Buffered bicycle lane
- Bicycle lane
- Wide outside shoulder



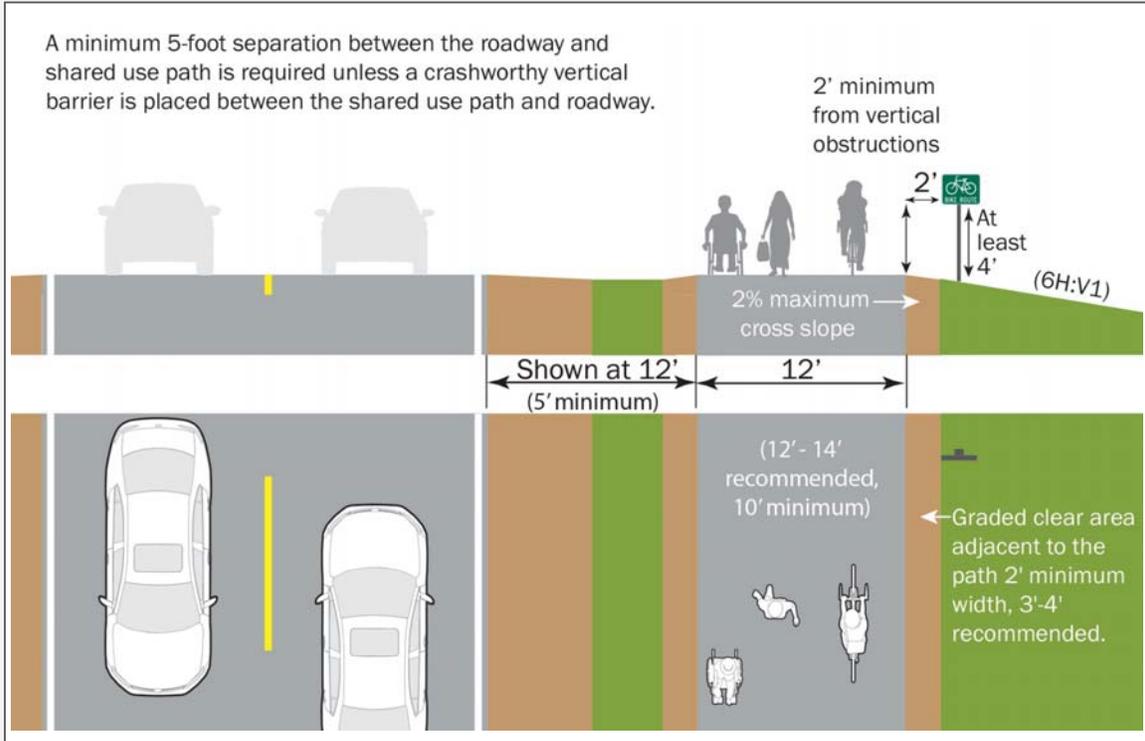
All proposed design recommendations meet or exceed the current TxDOT's Roadway Design Manual, AASHTO's Guide for the Development of Bicycle Facilities and the Texas MUTCD.

**NOTE: Bicycle accommodations within state-maintained right-of-way MUST meet or exceed minimum requirements in TxDOT's Roadway Design Manual for the functional classification of that roadway segment.**

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# Shared Use Path/Sidepath

**FOR DISCUSSION  
PURPOSES ONLY**

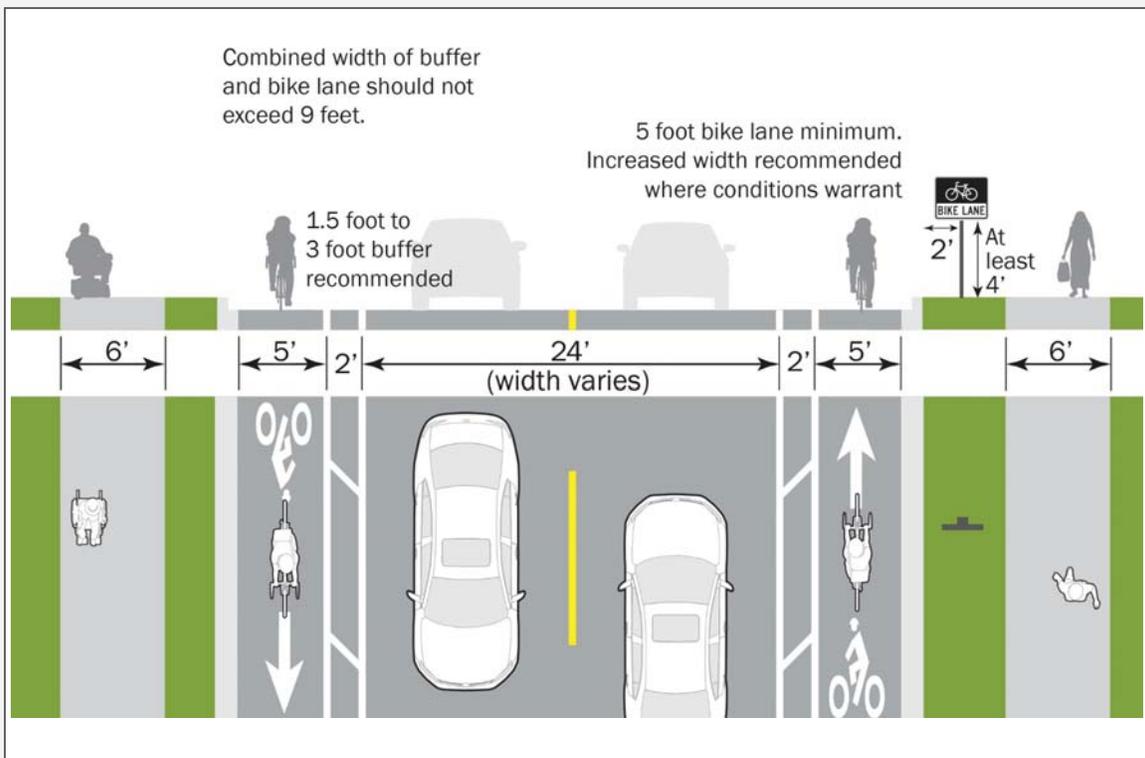


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Layout is conceptual, actual measurements and placements must conform with TxDOT RDM, AASHTO Bikeway Guide, and TMUTCD

# Buffered Bicycle Lane

**FOR DISCUSSION  
PURPOSES ONLY**

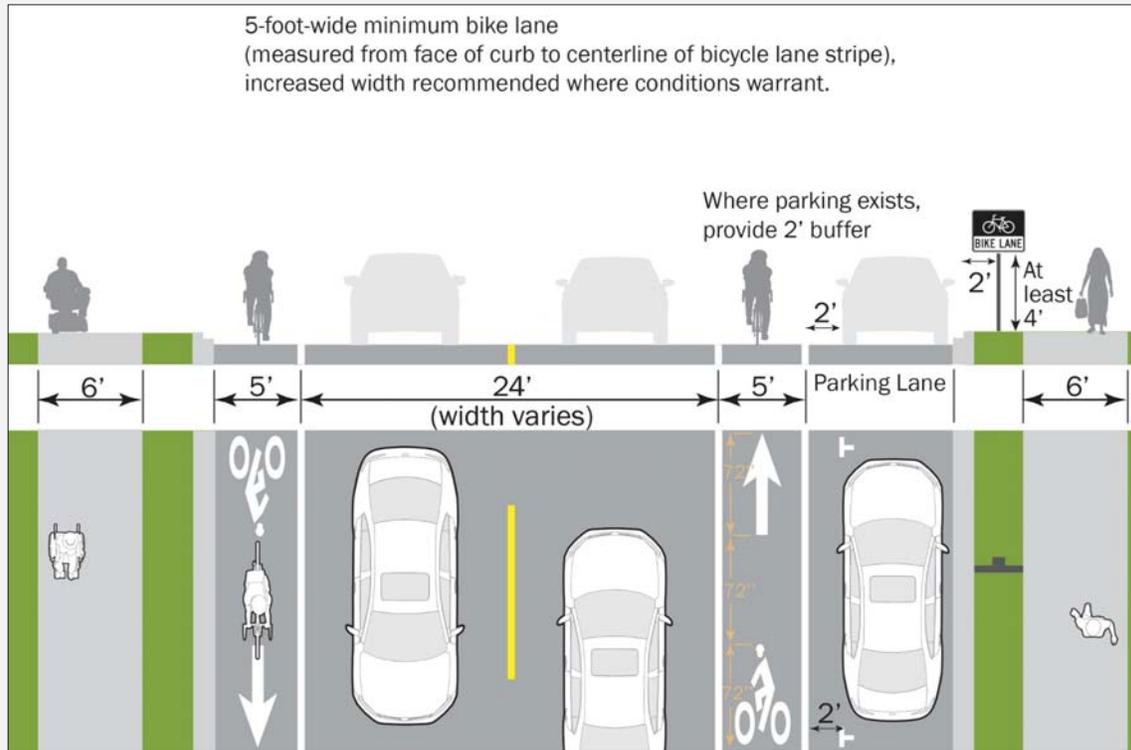


30

Layout is conceptual, actual measurements and placements must conform with TxDOT RDM, AASHTO Bikeway Guide, and TMUTCD

# Bicycle Lane

**FOR DISCUSSION  
PURPOSES ONLY**

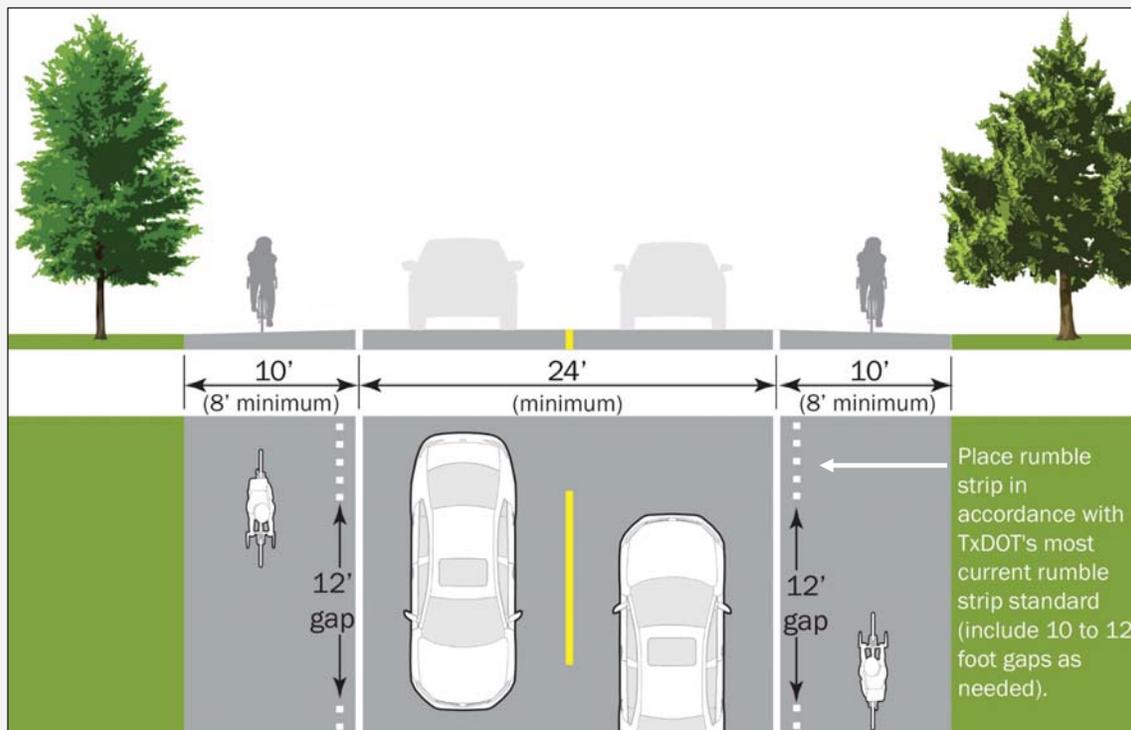


31

Layout is conceptual, actual measurements and placements must conform with TxDOT RDM, AASHTO Bikeway Guide, and TMUTCD

# Wide Outside Shoulder

**FOR DISCUSSION  
PURPOSES ONLY**



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Layout is conceptual, actual measurements and placements must conform with TxDOT RDM, AASHTO Bikeway Guide, and TMUTCD

# BTTs recommended bikeway surface types

## Long-term:

- Hard surfaces preferred for ultimate network



## Short to mid-term:

- Off-road shared use paths with various surface treatments may be included
  - Different surface treatments may attract different users

Slides intended for discussion purposes only

# BTTs bikeway types:

## *Capital and O&M Costs Summary Comparison*

Bikeway Type	Cost Ranges per mile (thousands)	
	Construction Costs	Annual Operation and Maintenance Costs
Construct Shared Use Path <sup>1</sup>		
Restripe Roadway for Buffered Bicycle Lane <sup>2</sup>		
Widen Roadway for Buffered Bicycle Lane <sup>2</sup>		
Restripe Roadway for Bicycle Lane <sup>3</sup>		
Widen Roadway for Bicycle Lane <sup>3</sup>		
Widen Roadway for Wide Outside Shoulder <sup>4</sup>		

NOTE: Construction costs do not include intersection considerations, right-of-way acquisition, contingency, mobilization, or project development. All costs are based upon TxDOT Average Bid Prices for Construction and Maintenance. All prices are still being refined as of 12/12/17.

1. Typically 12' wide with 6" Continuously Reinforced Concrete Pavement.

2. Typically 7' wide (5' lane and 2' buffer space identified with pavement markings) with 8" Continuously Reinforced Concrete Pavement on each side.

3. Typically 5' wide with 8" Continuously Reinforced Concrete Pavement on each side.

4. Typically 10' wide with 8" Continuously Reinforced Concrete Pavement on each side.

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## BTTT bikeway types:

### *Capital and O&M Cost Considerations*

- Construction costs do not include intersection treatments, right-of-way acquisition, utility adjustments, or other project development costs.
- Urban, suburban, and rural contexts have different development patterns.
- Where shared use paths are located less than 5' from the road edge, a crashworthy barrier would be required. This can significantly affect cost estimates.
  - A per mile cost estimate of a common barrier type, a concrete barrier, is approximately \$265,000.
  - Additional barrier types include wooden or steel bollards.

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## Review of Stakeholder Outreach



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# Stakeholder Outreach Overview

Type	Number of Meetings	Stakeholder Outreach Participation Level*
<b>TxDOT's Bicycle Advisory Committee</b> <ul style="list-style-type: none"> <li>BAC meets quarterly (5)</li> <li>Working Group meets monthly (12)</li> </ul>	17	Inform/Consult/Involve/Collaborate
<b>TxDOT Divisions</b> (DES, TRF, CON, MNT, TPP)	6	Inform/Consult/Involve
<b>TxDOT Districts</b> <ul style="list-style-type: none"> <li>TP&amp;D Directors Quarterly Meeting (1)</li> <li>TP&amp;D Directors &amp; Bicycle Coordinators (Wikimap)</li> </ul>	1 + Wikimap	Inform/Consult
<b>Other Texas Agencies</b> <ul style="list-style-type: none"> <li>Texas Parks &amp; Wildlife</li> <li>Texas Historical Commission</li> <li>Texas Economic Development &amp; Tourism</li> </ul>	1	Inform/Consult
<b>Metropolitan Planning Organizations (1) and Councils of Governments (1)</b>	2 + Wikimap	Inform/Consult
<b>BikeTexas</b>	2	Inform/Consult

\*Based upon the International Association for Public Participation (IAP2) Public Participation Spectrum

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## Next Steps



## Texas approach to bicycle tourism

TxDOT's Bicycle Tourism Trails Study is Texas' first statewide investigation into bicycle tourism. The study has:

- Established a methodology to form a bicycle tourism network
- Identified bikeway designs acceptable for all-ages-and-abilities
- Estimated rough construction and maintenance costs (TBD)
- Created excitement about long-distance bicycle infrastructure
- Initiated dialogue about bicycle tourism within TxDOT and between state agencies

Questions still remain...

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## Texas approach to bicycle tourism (continued)

	<b>Texas Approach</b>
<b>Bicycle user focus</b> <i>(advanced cyclists vs 8-80)</i>	<b>All ages and abilities (8 to 80 years old)</b> <b>Local users and tourists</b>
<b>Lead agency</b>	<b>To be determined</b> TxDOT? Texas Parks & Wildlife? Texas Economic Development & Tourism?
<b>Product Promotion</b>	<b>To be determined</b>
<b>Interagency coordination</b> <ul style="list-style-type: none"> <li>• TxDOT</li> <li>• Texas Parks and Wildlife</li> <li>• Texas Historical Commission</li> <li>• Texas Economic Development &amp; Tourism</li> <li>• Local Governments</li> <li>• Bicycle advocacy groups (<i>BikeTexas</i>)</li> </ul>	<b>To be determined</b>

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Thank You!!

**Bicycle Advisory  
Committee**

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