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16. Abstract <b>This research analyzes both the need and mechanisms for integrating livability components such as transit and active transportation into a broader mega-regions transportation framework. The research builds a conceptual framework for understanding how transportation livability concepts fit within the larger mega-regions literature. This framework based around the study of regional green infrastructure greenbelt systems is then used to analyze key strategies that could be integrated into the larger Gulf Coast/Texas mega-region transportation planning framework through analysis of three case studies in greater Houston, Austin/San Antonio, and New Orleans/Baton Rouge regions. Major existing and emerging opportunities to tie infrastructure into a mega-region transportation system are identified in these three case studies.</b>			
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# **Accessing the Mega-Region: Evaluating the Role of Livable Community Patterns in Gulf Coast Mega-Region Planning**

by

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## Executive Summary

Megaregions have emerged as a key transportation planning framework, but there is significant debate about whether these regions can or should be more concentrated or dispersed. This research surveys the existing literature on megaregions from both a U.S. and European perspective and finds that broader economic forces on both sides of the Atlantic (and around the world) are encouraging broader regional/megaregional economic conglomerations. These broader economic forces do not, however, predefine the spatial form of the megaregion. The form of the megaregion, more dispersed or concentrated, depends on transportation policy decisions.

The implications of this megaregion policy framework are examined based on the growing understanding of the limits of a carbon intensive transportation system. Existing research on sustainable megaregion planning highlights the need to facilitate the growth of walkable urban nodes connected by transit and bicycling to manage greenhouse gas emissions. Fostering these connected, more concentrated urban units is, however, a challenge that requires the coordination of transportation, land use, environmental and economic development planners.

This research explores the underlying challenges and opportunities of coordinating the multi-stream planning processes necessary to create more sustainable megaregion transportation systems through a series of case studies of greenway planning in the Texas Triangle/Gulf Coast megaregion area. The study of greenway planning, one of the oldest regional planning tools, provides an opportunity to examine the interplay of transportation planning with land use, environmental and economic development planning.

The research finds that while there is considerable implementation of transportation-oriented greenways in the Texas Triangle/Gulf Coast megaregion area, there is a limited regional-scale orientation to the projects. The result at this point is a set of ad hoc greenway projects that have not broadly been connected into a system. Despite this finding, analysis of planning documents in case study communities reveals increased concern with system building that could act as a foundation for a more regional, sustainability-oriented megaregion transportation system in the future.



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## **Chapter 1. The Meaning of Megaregions: Framing the Research Problem**

Megaregions are an emerging spatial framework for understanding and planning for increasingly linked metropolitan areas. Multiple larger and smaller cities across regions are now becoming connected in economic, social, and environmental networks. The strength of these networks, rather than the singular assets or weaknesses of a particular community, are becoming important features that define the global economic potential of the region.

The growing interest in the megaregion framework broadly stems from these economic competitiveness issues related to linkages to the global economy, but also from the need for regional scale policy initiatives such as managing and mitigating climate change (Hall 2009, Lang and Knox 2009). The simultaneous focus on increasing economic development opportunities across a broad region with a likely need for increased mobility under the present system and the vital need to decrease greenhouse gas emissions linked to this increasing mobile society creates an underlying tension in the megaregions literature (Wheeler 2009). Understanding these tensions is vital to improved megaregion sustainability planning.

These tensions are, however, not new. Regional planners have long struggled with the environmental imperative to conserve the environment while dealing with the spread of dispersed, sprawling development (Mumford 1937). Garden cities, growth boundaries, greenways and other tools have been used to focus development and preserve natural landscapes.

Understanding the history and contemporary uses of greenways, one of the oldest regional planning tools, provides a platform for understanding and managing these tensions.

This research seeks to better understand the potential role that regional active transportation systems (walking and bicycling networks and trails) can play in building long-term sustainable megaregions. Specifically, this research focuses on how greenway transportation corridors are being used in megaregion planning through an analysis of contemporary regional greenway planning in emerging megaregions along the Gulf Coast. Case studies of the greater Houston, Austin/San Antonio, and New Orleans/Baton Rouge regions are analyzed to better understand how walkable, linked nodes of development fit within the broadly dispersed, auto-oriented regionalism of the contemporary Texas Triangle and Gulf Coast megaregions. Document analysis and key stakeholder interviews were conducted in each community to provide an overview of regional greenway planning. This approach matches Erickson's greenway case study approach (2004) providing an overview of the current extent of the system, management structures, and long-term planning strategies designed to steer system growth. The detailed interviews with stakeholders are designed to probe whether the case study regions are intentionally planning and utilizing greenways to connect transportation systems and manage growth in emerging megaregions.



## **Chapter 2. Megaregion Transportation Issues: Competing Visions**

Megaregions are emerging as the central spatial framework for understanding the forms and economic functions of contemporary urban areas (Ross 2008, Lang and Knox 2009). With increased globalization, connected regions are becoming the cornerstones for effective economic competitiveness.

The forms of these connected megaregions, however, differ around the world based on national land use and transportation policy. Currently, the continuum of megaregion forms broadly stretches from the more dispersed United States form to the more concentrated variants in Europe and Asia. Developing country forms also offer important variations.

A key policy question is what form megaregions should take to most effectively position nations and regions to address emerging environmental and social conditions and compete in the world economy. This question is addressed below through an analysis of the key components of the current U.S. and European megaregion frameworks.

### **U.S. Megaregion Form: Dispersed Connections**

While there are multiple definitions and conceptions of megaregions, they broadly focus on, as the Regional Planning Association (RPA) describes, “networks of metropolitan areas, connected by travel patterns, economic links, shared natural resources, and social and historical commonalities” (Todorovich 2008, p. 10). Utilizing these broad categories for analysis, the RPA has conceptualized a set of 11 emerging megaregions across the U.S. where 70% of the population and economic growth is expected to take place by 2050 (RPA 2006, p. 4).

Lang and Knox (2009) utilize Census and economic data to create a similar portrait of what they call megapolitan regions. They identify 10 megapolitan regions emerging across the country in a slightly different pattern than the RPA (Table 1). These megapolitan regions are composed of belts of “edgeless cities” running along major highway corridors linking a network of central and edge cities in a large spatial union of previously disparate parts. Essentially, the megapolitan region is “bound together through urban freeways, arterial highways, beltways, and interstate highways” (p. 795) linking “clusters of decentralized employment” (p. 793). This spatial form provides a platform for connected regions to engage with the globalized economic system, but is reliant on low-cost, high carbon energy to be efficient.

These transportation structures and economic processes essentially define how the megapolitan or megaregion is emerging in the United States. The present structural foundation often leads to planning approaches that emphasize enhancing mobility through improved large-scale highway connections designed to improve economic competitiveness (Ross 2008). While there is discussion of the potential for rail connections to function in U.S. megaregion framework, (Todorovich 2008), the efficient provision of highway systems to manage congestion in the system both from a freight and passenger perspective is generally seen as the de facto foundation for effective megaregion transportation planning.

**Table 1: Emerging Megaregion/Megapolitan Areas**

Emerging Megaregions (RPA)	Emerging Megapolitan Areas (Lang and Knox)
Arizona Sun Corridor	Arizona Sun Corridor
Cascadia	Cascadia
Florida	Florida Peninsula
Front Range	Great Lakes Crescent
Great Lakes	Gulf Coast
Gulf Coast	I-35 Corridor
Northeast	Megalopolis (Northeast)
Northern California	NorCal
Piedmont Atlantic	Piedmont
Southern California	SoCal
Texas Triangle	

### **European Mega-City Region: Connecting the Continent**

While the U.S. discussions describe how the globalized economic condition is impacting urban form through the American policy prism, a European variant of megaregions is simultaneously emerging across the Atlantic. The European megaregion form, responding to a different set of transportation and policy structures, is far different than the current “decentralized employment” centers model (Lang and Knox 2009, p. 793) that characterize U.S. megapolitan regions.

The megaregion, or mega-city region in the European terminology, is emerging in response to these same large, globalized structural economic forces. The result of these forces on the form of the mega-city region in Europe is resulting in a constellation of central and secondary cities linked in a far denser network than the U.S. variant (Hall 2009).

The central policy question from a megaregions perspective is not whether the large, long-term changes to the economy will continue into the future. Large structural forces are at play across the globe that make regional economic connections to the wider global sphere a near given for the foreseeable future (Hall 2009, Lang and Knox 2009). The more vexing policy question is the type of urban form that will be developed to engage these broader structures. This presents U.S. megaregion policy makers with a choice: Will the megaregion policy frame lead towards more walkable urban clusters linked through transit and regional rail connections or, as Banerjee (2009) pointedly asks, are megaregions “destined to be megasprawls” (p.83)?

### **Greenway Planning in the Megaregion Age**

In large measure, the answer to the above question will emerge from key policy decisions that will define the type of transportation system that is developed over the next 50 years to engage with these globalized economic flows. As the above discussion makes clear, the emerging megaregions around the globe are not all morphologically the same. The current U.S. system of more dispersed megaregions is much more reliant on cheap, carbon-intensive energy. With the push to address

climate change, the economic underpinning of this decentralized system could be jeopardized (Hall 2009, Lang and Knox 2009).

An important question for megaregion planners in the U.S. in response to climate change is how to begin to transition towards more concentrated and accessible forms of megaregions that are less carbon intensive. The policy choice is between transportation systems that promote more dispersed, car-dependent outcomes and systems designed, as Peter Newman (2009) argues, with “a commitment to centres and to transit as its core ingredients together” (p. 13). To put this directly, the key policy question for sustainable megaregion planning is how to best connect walkable urban clusters through transit.

To address this question, this research analyzes the extent to which U.S. communities along the Gulf Coast are utilizing one of the oldest regional planning tools, greenway planning. Regional planners have been applying Howard’s Garden City concept and Olmsted’s regional greenways as tools to shape the city and region for over 100 years. The megaregion framing provides an important opportunity to reevaluate these early regional planning tools in light of emerging economic and environmental conditions.

In the contemporary context, Hickman et al (2013) point to greenway planning as a potentially important tool in building more sustainable mega-city regions in Europe. The potential exists for greenways to function as radial active transportation corridors that link more compact centers together. The goal is to facilitate “more localized trip patterns” (p. 210) through active transportation for shorter trips. When needed, these connections can then provide linkages to public transit and rail for longer trips. In this way, greenways as active transportation corridors along with stronger land use planning tools can protect sensitive land from development, steer development towards existing population centers, and connect local communities together with active transportation linkages.

There is tension, however, between this more trail-oriented development greenway planning approach that focuses on the development and redevelopment opportunities of urban corridors (Fields 2009, 2013) and the more dominant land conservation-oriented approach that can protect individual landscapes but result in potentially leap-frog, dispersed development. Before examining the greenway case studies of the Texas Triangle/ Gulf Coast megaregions, these underlying visions of the role of greenways are explored.





### Chapter 3. Methodology

The Gulf Coast case study sites of New Orleans/Baton Rouge, Austin/San Antonio, and greater Houston were selected because they represent emerging megaregions and are simultaneously expanding greenway/active transportation infrastructure systems. At the same time, these communities also share high rates of auto-oriented land use and travel patterns. Houston, for example, has been referred to as a region “practically defining sprawl with its 600-square-mile span” (Jacobs 2014, np). In this way, the selected case study sites represent more challenging locations for regional greenway integrated land use and transportation planning. Emerging greenway examples in these areas, thus, can show potential in more difficult planning environments.

The methodological approach taken for the case studies is a qualitative review of primary documents complemented with site visits and key stakeholder interviews. The method mirrors earlier greenway research by Erickson (2004) seeking to uncover key structures, actors, and planning frameworks used in building greenway systems. While Erickson was searching to understand how communities were working to protect open space systems with greenways, this research adds a set of questions designed to uncover if and how communities are using greenways to explicitly use greenways to drive redevelopment. This trail-oriented development framework provides a platform for uncovering how radial greenway corridors can be integrated not just into an open space system, but also into an integrated transportation and land use planning framework to guide megaregion development.

Because this is the first attempt to uncover these connections, the work is speculative and seeks to use the case studies as a springboard for future questions and research. Following the case studies a discussion section seeks to draw out these implications.



## **Chapter 4. Findings: Case Study Analysis**

### **New Orleans/Baton Rouge: Building Regional Connections**

In the wake of Hurricane Katrina, community leaders in Baton Rouge and New Orleans sought to increase transportation choices between the Louisiana's two largest metropolitan areas. While separated by 84 miles and numerous bodies of water, Baton Rouge (metropolitan population 815,000) and New Orleans (metropolitan population 1.2 million) are increasingly intertwined with trade and commuting patterns moving between the core cities and adjacent parishes.

In the immediate post-Katrina era, a new transit service (Louisiana Swift) was established between the two centers. While the service was ended by the State of Louisiana in 2013, a coalition of business and transportation advocates has emerged pointing to the need for more robust transit and rail connections for the region. The New Orleans/Baton Rouge Rail Compact, for example, is working on proposals to expand rail within the region. Megabus, a private bus service, has also emerged providing new regional bus options.

The proposals for more multimodal transportation options have also extended to trails and greenways. Significant project proposals have been developed and funded in Baton Rouge and New Orleans for enhanced active transportation infrastructure.

#### **New Orleans**

In the New Orleans metro area, population levels are now 92% of pre-Hurricane Katrina levels though the share of population and jobs in area parishes has shifted with suburban Jefferson Parish now surpassing the City of New Orleans as the regional jobs leader. Jefferson Parish now contains 38% of all area jobs with the City of New Orleans at 34%. St. Tammany Parish across Lake Pontchartrain has moved to 15% of area jobs (Plyer et al 2013).

While these economic and population shifts have impacted business and travel centralization broadly, hurricane recovery efforts in the City of New Orleans have resulted in a growing active transportation network. Prior to Hurricane Katrina in 2005, the City of New Orleans had only 3 miles of bicycle facilities associated with the Mississippi River Trail. By 2014, the active transportation system had grown dramatically with 90 miles of completed projects and 20 additional miles of funded projects (Table 2).

In addition to the growth and need for better integration of the on-road system and various transit connectors, the 3 mile Lafitte Greenway project broke ground in February 2014. The greenway emerged in post-Katrina plans as a key tool to promote active transportation and neighborhood revitalization (Fields 2009). Neighborhood groups such as the Friends of the Lafitte Corridor (FOLC) and local business advocates the Urban Conservancy helped to push the project forward and secure funding in post-Katrina plans. The greenway offers an important new component to the active transportation system as it is designed to link the Mississippi River to City Park and then on to Lake Pontchartrain through the park's network on-road and trail facilities. The potential will exist for residents and tourists to travel on dedicated bicycle facilities from the French Quarter through local neighborhood business districts and then on to the New Orleans Museum of Art and out to

Lake Pontchartrain. While the greenway was championed as a major lure for trail-oriented development (Fields 2009), the revitalization planning up to this point has not strategically utilized this framework

**Table 2: New Orleans Region Bicycle Facility Types**

Facility Type	Orleans (Miles)	Jefferson (Miles)	Plaquemines (Miles)	St. Bernard (Miles)	St. Charles (Miles)	St. John (Miles)	St. Tammany (Miles)	Regional Total (Miles)
Dedicated Bike Lane	25.10	3.20	1.40	0.00	2.95	0.00	0.85	33.50
Buffered Bike Lane	3.65	0.00	0.00	0.00	0.00	0.00	0.00	3.65
Protected Bike Lane	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Shared Lane	41.15	2.95	0.00	0.00	0.00	0.00	0.00	44.10
Bike Lane/Shared Lane	2.25	0.00	0.00	0.00	0.00	0.00	0.00	2.25
Wide Shoulder	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bicycle Boulevard	0.80	0.00	0.00	0.00	0.00	0.00	0.00	0.80
Shared-Use Trail	12.20	15.30	0.00	0.00	0.00	0.00	26.85	54.35
Levee Top Trail	5.05	29.75	0.00	0.00	22.90	5.45	0.00	63.15
Parish Total	90.20	51.20	1.40	0.00	25.85	5.45	27.70	201.80

Source: New Orleans Regional Planning Commission

Overall, stakeholder interviews revealed that while there was significant progress to begin to create the backbone of an integrated active transportation system, there was not currently a truly functional system.

## Baton Rouge

In Baton Rouge, on the other hand, significant active transportation planning has only recently begun to emerge. The City of Baton Rouge, the state capital of Louisiana with 230,000 residents, is situated on the east side of the Mississippi River with development spreading from the Mississippi River along the major transportation corridors of I-10 and I-12. While there is a major university campus, Louisiana State University (LSU), located just south of downtown, there is not a strong active transportation presence throughout the city with bicycling commute mode shares hovering at .58%. By way of comparison, the state capital of Wisconsin, Madison, has a population similar to that of Baton Rouge (240,000 residents), but has a far higher bike commute mode share of 6.2% (League of American Bicyclists 2013).

Leaders in Baton Rouge are seeking to change those numbers and provide much more significant active transportation and trail connections around Baton Rouge. At present, the city has a trail system running south of downtown on the Mississippi River to the LSU campus and an on-road system of approximately 48 miles of bike lanes and sharrows scattered throughout the city (Table 3).

The city is, however, planning a much more robust system. As part of the city's comprehensive planning process, FutureBR, residents called for a connected trail system. This proposal, called

Greenlinks in the plan, has garnered significant support. The Downtown Development District, the Baton Rouge Recreation Department (BREC), the mayor’s office, planning department, and department of public works have partnered on a downtown greenway plan to link the Mississippi River Trail to area parks and the LSU lake trails. This proposal and a set of other trails along water corridors offer the opportunity to reconnect Baton Rouge population, recreation, and economic centers through active transportation infrastructure.

**Table 3: Baton Rouge Bicycle Facility Mileage**

Bicycle Transportation Facilities	Shared Use Trails	Bike Lane	Wide Shoulder	Sharrows	Total
2013	24.18 miles	27.06 miles	1.02 miles	20.69 miles	72.95 miles

Source: City of Baton Rouge 2013

While there are stirrings of a trail-oriented development vision in Baton Rouge with the Greenlinks concept, full-fledged plans with significant dedicated funding do not yet exist to either create a full active transportation system or to leverage a potential system to guide regional development.

## Houston

Further to the west on Interstate 10, Houston, TX, the country’s 4<sup>th</sup> largest city (2.1 million residents) and fifth largest metropolitan area (6.2 million residents), forms the interface between the Gulf Coast and Texas Triangle megaregions. Houston is emerging as an unlikely new actor in the trail development movement. The city, known more for its sprawling landscape than its trail amenities, is seeking to position itself as a leader in trails.

The “Bayou City” has begun to develop an extensive trail system along its network of waterways with a nearly seamless system of trails converging on downtown. The parks system was originally envisioned in the early 20<sup>th</sup> century by city planner Arthur Comey (Crompton 2011). Comey sought to weave Houston’s waterways together into an integrated park/open space system that would mitigate flooding and providing significant community amenities with easy access to parks. While the system remained dormant during Houston’s tremendous growth period during the 20<sup>th</sup> century, planners in the 21<sup>st</sup> century have rediscovered the vision and are seeking to create a vibrant network of greenways.

This vision, the Bayou Greenways Initiative, has already been able to galvanize a coalition and secure dedicated bond funding to build a network of radial greenways that link multiple neighborhoods to downtown along the network of 10 area bayous. Crompton (2011) notes that 52% of residents in Harris County are within 1.5 miles of these bayou corridors opening up large access opportunities for the region.

Jack Sanford, staff member of the statewide bicycle advocacy organization for Texas (BikeTexas; author interview 2013), notes that this “hub and spoke system” provides a tremendous active transportation access network system for Houston. Sanford says, “Houston stands out as having the most potential because they have long trails along bayous, east/west waterways. They are working on several ways to connect these. The network is paramount...When that’s connected you could

ride for a hundred miles...”

While the full system is still under construction, land use development along the corridor has already begun with new apartment complexes developing on the edges of the greenway. While no specific trail-oriented development plan currently exists, the proximity to downtown and access to the greenway lifestyle seems to be already be attracting this new development (Figure 1).

While Houston’s Bayou Greenway Initiative shows tremendous promise, the region is still highly car-dependent. The bicycle commute share for Houston is only .4% and the combined bike/walk share stands at 2.6% (League of American Bicyclists 2013). A network of light rail has begun to develop and some mapping of integration between the greenways and the transit system has taken place (author interview 2014: Houston Parks Board Advocacy Director Jen Powis). These efforts mark the beginnings of an effort to broaden thinking about how trails/transportation/land use can be coordinated more significantly.



**Figure 1: Houston Trail-Oriented Development** Source: Author

### **Austin/San Antonio: The Emerging Megaregion**

Further into Texas, the Austin and San Antonio metropolitan areas, once distinct communities separated by 80 miles, are now nearly linked together in an almost continuous corridor of development stretching up Interstate 35. Tremendous population growth over the last several decades has acted to create this belt of near uninterrupted development.

This rapid, dispersed growth has resulted in extensive greenfield development and strained highway capacity. The vast majority of trips along the corridor are taken in private autos. Currently, there is only a single daily Amtrak train on the Texas Eagle line providing rail access between the two cities and adjacent towns. Bus service is also available via Greyhound and MegaBus.

## **San Antonio**

In 2000, San Antonio voters passed the Linear Creekway Parks Development Program, a bond package utilizing an eighth of a cent sales tax to provide dedicated funding to create a greenway system along area creeks. Subsequent bond elections in 2005 and 2010 helped to expand the scope of the effort with 45 miles of greenway trails currently constructed and 41 additional miles funded (City of San Antonio 2014).

These funding streams have radically transformed access to active transportation in San Antonio with the groundwork laid for a connected greenway system. Former Mayor Howard Peak, for whom the trail system is now named, first developed the idea of a “ring of hike and bike trails in flood zones along city-owned creeks” (City of San Antonio 2014) and helped to usher passage of the initial bond package.

This initial vision, stakeholders felt, was an important platform for building support. Jack Sanford, a San Antonio native and staff member of BikeTexas, argued that the idea has “been around for decades of an emerald necklace around the city using creeks that circle the city” with the vision coalescing around creating a “green loop.” He went on to argue that through dedicated funding San Antonio “has connected home and work and major parks” and is “actually building” the “emerald necklace concept” (author interview 2013).

While the full vision is not currently built out, current completed projects along the 17 mile trail portion of San Antonio River show how the pieces are beginning to come together. The Museum Reach portion of the RiverWalk trail, for example, opened in 2009 and connects the well-known downtown, walkable-oriented segment with a multipurpose trail to the renovated mixed-use Pearl Brewery redevelopment. The trail continues up through Brackenridge Park to the Witte Museum.

The redevelopment of the Pearl Brewery in the Museum Reach probably offers the most interesting opportunity for trail-oriented development showing how a former brownfield site can be re-envisioned as a new community asset. The brewery, which sits about 3 miles from downtown on the San Antonio River, fully closed in 2001 and left a large gap in the urban fabric. The site was acquired by Silver Ventures in 2002 with plans to revitalize the site into a large mixed use center. Over the last 10 years, tenants such as the Culinary Institute of America have set up shop and gradually transformed the area. The final redevelopment was awarded with an American Institute of Architects 2014 Honor Award for Regional and Urban Design for the plan created by Lake|Flato Architects. The jury noted that the redevelopment “has served as a catalyst for green urban revitalization in a long-neglected portion of San Antonio’s inner city” (AIA 2014).

While not explicitly addressing integrating land use management, the San Antonio approach seeks to enhance active transportation access to existing nodes of higher density development and “maximize the economic benefits from ongoing investments in expanding the San Antonio River Trail, Mission Trail, and Greenway Trails” (City of San Antonio 2011, Introduction, p. 11). This type of approach offers potential for beginning to explicitly cultivate more trail-oriented development in San Antonio.

## **Austin**

Austin has a long-standing trails and bicycling program and has been seen as a national leader in active transportation. With 50,000 students at the University of Texas, a new bikeshare system, and



an extensive trail system, Austin has been able to cultivate a strong bicycling culture. Bicycling Magazine, for example, ranks Austin as the 13<sup>th</sup> most bicycling-friendly city in their 2012 rankings.

Austin laid the groundwork for this success through a network of greenbelts along area creeks. Known locally as “hike and bike trails”, these mostly unpaved trails provide a conservation buffer along creeks and mostly recreational active transportation access (Figure 2).

Over the last decade, Austin has begun to build the beginnings of a strong on-road active transportation system as well. From 2008 to 2013, Austin expanded the bicycle lane mileage by nearly 75% going from 118 miles to 205 miles of facilities. This system has also been expanded over the last several years to include more use of buffered bike lanes and cycle tracks (on-street protected bicycle facilities) with 18 miles of these new facilities in place by the end of 2013. Austin has utilized bond funding for many of these projects particularly from the extensive 2010 Bond Project.

The challenge for Austin is to begin to integrate the conservation and land use potential of greenways to enhance trail-oriented development (Fields 2009, 2013). Greg Griffin of the Texas Transportation Institute (TTI) echoes this by pointing out that the initial focus was around “creeks and protecting sensitive environmental areas” with trails developing on Shoal and Waller creeks in the 1970s (author interview 2013). Austin is moving to more coordination of greenways through the Department of Public Works. This shift should bring a more transportation-oriented focus to greenway management.



**Figure 2: Shoal Creek Greenbelt Trail** Source: Author

## Chapter 5. Policy Directions and Conclusions

This section outlines the underlying tensions and opportunities for greenway management in megaregions uncovered from the analysis of case study communities. The approach discussed below is currently speculative, but the case study results can begin to point to some of the potential for a creating a broader, more integrative greenway planning framework.

Two central questions about the contemporary management of greenways were posed at the beginning of this report:

1. Are greenways being used as a key planning tool to create more concentrated and accessible regions?
2. More specifically, are greenways being created to form networks of radial active transportation corridors?

While the broad answer to both questions is currently “no” from case study experiences, analysis of case study communities highlights nascent possibilities and potential.

The megaregion and greenway planning approaches discussed in the case studies above share a broad regional orientation, but have thus far lacked an integrative framework for addressing shared policy goals such as shaping future growth and managing climate change. Currently, examples from the Texas Triangle and Gulf Coast megaregions show an increasing use of greenways and the beginnings of a set of transportation systems, but a lack of a broader vision about the potential of greenways to actively shape development of megaregions. The progress made on developing projects in these communities does, however, point to the opportunity to begin to incorporate the greenway regional planning tradition with the emerging megaregion approaches.

Table 4 highlights the growing greenway systems and management structures in case study communities. All of the communities except for Baton Rouge either had produced or were producing significant bicycle master plan documents to guide system development. While local bicycle systems seemed to be in development, regional, greenway-specific system planning was less evident. Only Houston through their Greater Harris County plan had produced a broader regional greenway plan. No community had produced a specific trail-oriented development plan, and most communities relied on their parks department for greenway management.

While management of greenways in case study communities is currently more parks oriented, greenways planning has the ability to pull multiple agencies such as planning and transportation together to create more holistic visions of sustainable regions. One of the central strengths of greenways is their ability to act as a conduit for this type of integrative landscape management thinking. Greenway planning provides a bridging framework as it is regional in inclination, but local in terms of landscape specificity. This framework provides an opportunity for citizens to engage in building landscapes that achieve multiple goals simultaneously. This integrative vision helps communities envision how they can protect sensitive landscapes, link neighborhoods while at the same time envisioning how to tie multiple communities together to achieve larger goals.

**Table 4: Greenway Planning and Management Characteristics**

Greenway Planning and Management Characteristics	Austin	San Antonio	Houston	New Orleans	Baton Rouge
City greenway or bicycle master plan	City of Austin Bicycle and Urban Trails Plan (in preparation)	San Antonio BikePlan 2011	Bayou Greenways 2020 Initiative	New Orleans Regional Planning Commission Metropolitan Bicycle and Pedestrian Plan	East Baton Rouge Parish Bike and Pedestrian Master Plan Map
Regional greenway-specific master plan	No	No	Yes (Greater Harris County)	No	No
Trail-oriented development plans	No	No	No	No	No
Comprehensive city greenway management organization	Parks/Public Works	Parks Department	Parks Department	No	No
Regional greenway management organization	No	No	No	No	No
Miles of greenways/trails (city total)	50.8 miles	26 miles (2011)	128 miles	16.55 miles	24.8 miles
Miles of greenways/trails (regional total)	Not available	49 miles (2011)	Not available	116.8 miles (8 Parish MPO area)	Not available

Source: compiled planning documents and author interviews

While greenway planning provides this potential platform, current projects in the case study communities point to applications of mostly localized landscape management concerns. Greenway planning has not been targeted at regional management issues like climate change mitigation or steering regional growth and is mostly planned for recreational or environmental benefits.

At the same time, greenway projects across the case study communities are proving to generate considerable momentum. This positive public association with greenways could be seen as an important opportunity for coalition building to achieve larger regional goals. There are few tools that both generate public enthusiasm and help to meet larger development management goals. More research on the potential for greenways to act as serious public policy tools could help to shed light on how to create coalitions that can help communities meet these larger regional goals.

Administratively, broader coordination of the departments of parks/recreation and public works seems to offer a potential platform for achieving these broader goals. Most of the case study communities are using their parks/recreation departments or a public/private parks management organization to build/manage their greenways. The management emphasis from a parks perspective fits with the traditional view of greenways as recreation/open space systems. The move by Austin to transfer some greenways into “transportation trails” managed by the Department of Public Works shows the potential to broaden the goals of greenways to include improved active transportation.

To fully integrate greenways into regional transportation planning, more research needs to be done on the potential to begin to integrate planning departments into the greenway management equation. Aside from the relatively weak New Orleans Lafitte Greenway redevelopment plan, no case study community has actively sought to manage/encourage development along their greenways. As the San Antonio, Austin, and Houston cases show, there is incredible potential to actively utilize these public amenities to center growth and improve active transportation connections in managed trail-oriented developments. These type of projects put together on a regional scale could begin to center development along more linked radial active transportation corridors. While in no means is this framework a type of “silver bullet” for megaregion management, it could act as a cost-effective and popular way of beginning to build more accessible megaregion landscapes.

To tap into the emerging opportunities for improved megaregion sustainable planning, the case study evidence suggests that improved coordination among the differing layers of government responsible for greenway planning is necessary. At present, there is often a lack of coordination between parks and recreation, transportation, and economic and environmental planning units. The broader planning goals of centering development and connecting walkable urban nodes through transit and bicycling needs to be seen as a core element of a sustainable megaregion transportation strategy. While there are case study examples of emerging partnerships that show promise, the broader lack of coordination limits the more integrative planning necessary to push larger regional visions forward. Utilizing existing funding channels like the federal TIGER grant program to incentivize broader partnerships could be a potential pathway to begin to create U.S. models of more sustainable megaregion planning.



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