

### **BOARD/COMMISSION RECOMMENDATION**

### **Urban Transportation Commission**

Recommendation Number: 20140918-03E: 2014 Bicycle Master Plan

WHEREAS, The 2014 Bicycle Master Plan updates the 2009 Bicycle Master Plan to include best practices that will guide the City to strategically maximize the benefits of bicycling to Austin.

WHEREAS, The 2014 Bicycle Master Plan did not get the 5 requisite votes required for the support of the Planning Commission, at the June 24<sup>th</sup>, 2014 meeting by a vote of 4 commissioners in support and 1 against or receive feedback on recommend changes.

WHEREAS, The Urban Transportation Commission would like to see the Planning Commission join the Urban Transportation Commission in support for this city-wide master plan before proceeding to Council.

NOW, THEREFORE, BE IT RESOLVED that the Urban Transportation Commission requests that the 2014 Bicycle Plan be taken back to the Planning Commission for reconsideration.

Date of Approval: September 18, 2014

Record of the vote: 6/0/0/1

(Staff or board member can sign)



### 2014 BICYCLE PLAN UPDATE

### **EXECUTIVE SUMMARY**

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### Vision

Help people in Austin of all ages and abilities bicycle comfortably and safely for transportation, fitness and enjoyment. Encourage bicycling in ways that benefit not just people who bicycle, but the whole community, by helping to activate the Imagine Austin Comprehensive Plan for our shared sustainable future.

### Achievements Since 2009 Bike Master Plan

The City of Austin Bicycle Master Plan 2014 (the Plan) reflects today's best practices in municipal planning for bicycling at a national and international level. An update of the 2009 Bicycle Master Plan, this 2014 Plan reflects the latest innovation in approaches and sets a goal of creating an "all ages and abilities" bicycle network. The "8-80" framework is a good test for all ages and abilities where an 8-year-old traveling with an 80-year-old should be able to navigate by bicycle comfortably and safely.

### Review Copy 09/12/2014

The 2009 Plan set the stage for a significant expansion of the bicycle network, primarily through painted bicycle lanes, resulting in a substantial increase in bicycling throughout Austin.

- Austin's bicycle network grew from 126 miles to 210 miles since 2009, a 70 percent expansion in only five years.
- The expanded bicycle network resulted in a citywide bicycle mode share of 2 percent in 2011, nearly doubling rates from 2009. (Mode share indicates people who primarily commute to work by bicycle, at least three days per week.)
- Within the 32 square miles of central Austin, the mode share reported was 5.5 percent, and as high as 13 percent in certain census tracts in 2012.

The City of Austin completed dozens of new signature projects and removed barriers to cycling. Some of these projects included creating new bicycle lanes on South Congress Avenue, Barton Springs Road, Cameron Road, South Lamar Boulevard and Guadalupe Street. Existing bicycle lanes were and continue to be routinely made safer and more comfortable by widening or buffering lanes and by addressing parking concerns in the bicycle lane. Many more projects are in construction or in design and are often coordinated with street resurfacing.

### Shifts in Best Practice Bicycle Planning

### **Protected Bicycle Lanes**

In order to make bicycling safe for most people, it is necessary to physically protect bicycle lanes; painted single lines are simply not enough of an incentive to encourage bicycle riding. National studies have found about half of the population fits into the category of "interested but concerned" - they are interested in bicycling for transportation, but concerned about their safety on the roads. In Austin, only 15 percent of bicyclists will ride in a painted bicycle lane on a busy road while 40 percent of bicyclists would feel comfortable riding in a protected bicycle lane, but not a painted one. A statistically valid phone survey conducted in 2013 by the City of Austin shows protected lanes would attract 55 percent of Austin's population.

Austin was selected as one of six U.S. cities to participate in the Green Lane Project to catalyze implementation of protected bicycle lanes based on programs in bike-friendly European countries. The Green Lane Project provided resources and technical assistance to help Austin implement quality bicycle infrastructure. Austin officials also participated in key study trips to the Netherlands and Denmark, and included a city council member, the city manager, the public works director, the city traffic engineer and an assistant director of the planning department. During Austin's two-year participation with the Green Lane Project, the city increased the number of buffered or protected bicycle lanes from 5 miles to 20 miles. Examples of completed protected bicycle lane projects include Barton Springs Road, Guadalupe Street, Bluebonnet Lane and Rio Grande Street. Numerous other protected bicycle lanes are currently in the planning and design stages.



### **Capturing Short Trips**

Shifting short motor vehicle trips to bicycle trips is another best practice aimed at increasing blcycling. Most trips Americans make are short: usually less than 3 miles. Short trips, or trips that consist of less than three miles, are the most likely motor vehicle trips to convert to bicycle or walking trips. Implementation of protected bicycle lanes should be focused where short trips most frequently occur to maximize return on investment. As a result, the 2014 Plan focuses on routes with high concentrations of existing short trips, most notably within the central Austin area but also to neighborhood destinations throughout the city such as schools, parks, business and shopping districts. For longer trips, the 2014 Plan focuses on linking bicycle and transit trips by providing protected bicycle lanes to major stations and secure bicycle parking at the station. Significant bike share systems, such as an expanded Austin's B-Cycle, are a powerful and flexible tool to connect transit users to their destinations solving the "last mile" problem.

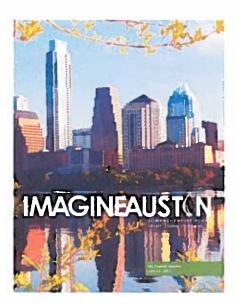
### **Building a Complete Bicycle Network**

There is an international focus on the importance of creating complete networks that serve people of all ages and abilities. Protected bicycle lanes are a great tool, but unless there is a network that serves the variety of trips that a user desires to take, the increase in bicycling will be limited. The most notable bicycle network success story is from Seville, Spain, where an 87-mile network of protected bicycle lanes was installed, resulting in an increased bicycle mode share from 0.5 to 7 percent in just three years. By comparison, it took Portland, Oregon, one of the country's most bike-friendly cities, 20 years to accomplish this same shift in behavior.

### **Activating Imagine Austin**

In 2012, the City of Austin adopted Imagine Austin, the first citywide comprehensive plan in 35 years. It captures the community's collective vision for how residents want Austin to grow and flourish. The 2014 Plan is shaped by Imagine Austin and will serve as a tool for implementing the comprehensive plan's policies and eight priority programs, including key support for compact and connected, affordable, healthy, workforce-related programs. Imagine Austin establishes big-picture, long-range goals; the 2014 Plan addresses specific projects and programs to activate the comprehensive plan's principles over the next five years.





Caption: The Imagine Austin Plan, adopted in 2012, guides the vision for the future of Austin.

### **Bicycle Program Goals**

- Connectivity: Create a bicycle network that serves people of all ages and abilities, providing
  direct and comfortable connections to where people live, work and play
- Increase Ridership: Achieve a significant increase in ridership, especially transportation cycling, and a corollary reduction in motor vehicle miles traveled and/or prevented traffic congestion
- Improve Safety: Implement safety measures for all roadway users, including bicyclists
- Equity: Provide equal bicycling access for all; through public engagement, program delivery, and capital investment
- Support Imagine Austin: Realize the potential of bicycling to support and achieve multiple goals of the Imagine Austin Comprehensive Plan

### Chapter 1: Bicycle System

The City's "bicycle system" refers to our physical bicycle network, as well as supporting infrastructure elements such as end-of-trip facilities (bike racks, bike storage, showers, etc.), transit integration and an expanded bike share system. The most important element of the bicycle system and the highest priority recommendation of the Plan is to fund and implement an all ages and abilities bicycle network. Supporting bicycle infrastructure elements and the ongoing maintenance of the system are also priorities of the Plan.

### Creating an All Ages and Abilities Bicycle Network

To create a network of all ages and abilities bicycle facilities, City staff analyzed our existing streets to determine the most cost-effective means of implementing this network. The result is a proposed

network that is compatible with existing motor vehicle volumes and parking needs, not requiring costly street reconstruction, and focused on capturing short trips.

An all ages and abilities network elements include:

### Protected Bike Lanes

Protected bicycle lanes include a physical barrier between motor vehicle traffic and separation from pedestrian traffic. Protected bicycle lanes are a tool to make high-volume or high-speed streets comfortable for users of all ages and abilities.

Caption: Parking protected bicycle lanes on Guadalupe Street.



### Urban Trails

Urban Trails are hard-surface trails designed for use by pedestrians, bicycling and other non-motorized forms of transportation for both transportation and recreational use. Urban Trail priorities are set by the Urban Trails Program and guided by the Urban Trails Master Plan.

Caption: Dual track urban trail separating wheeled and on-foot users.



### Quiet Streets

Local neighborhood streets offer bicycling routes that are inherently safer and more pleasant than busy major roads. Physical improvements to optimize designated "quiet streets" for bicyclists, and integrate them into the bicycle network, will include traffic calming devices for motor vehicles and wayfinding signage for people on bikes.

Caption: Quiet Street in Portland, Oregon.



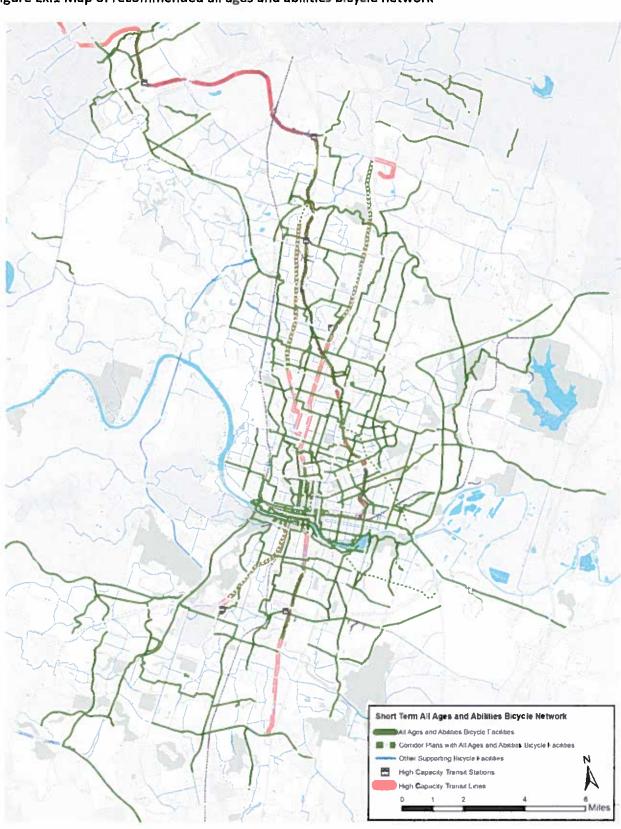


Figure Ex.1 Map of recommended all ages and abilities bicycle network

The planning level cost estimate for the of the all ages and abilities bicycle network is \$155 million and leverages many existing and already planned bicycle facilities. The cost of priority investments includes \$66 million for 200 new miles of on-street facilities at an average of \$330,000 per mile. It also includes \$89 million for 44 new miles of Urban Trails at an average of \$2 million per mile. The priority Urban Trails match those recommended in the Urban Trail Master Plan.

### 400.0 350.0 300.0 inear Miles 250.0 by Others 200.0 Existing 150.0 Funded Unfunded Priority 100.0 50.0 **Urban Trails** On-street Total (Including existing trails)

All Ages and Abilities Bicycle Network Composition

Facility Type

The proposed network is composed of 220 miles of on-street facilities and 150 miles of off-street facilities, largely new urban trails and existing unpaved trails. The chart shows the composition of the complete network including priority investments, existing facilities, and those already funded by the City of Austin or partner agencies.

#### **Returns on Investment**

City staff conducted a cost-benefit analysis for the investment in the all ages and abilities network as part of the region's transportation system. Benefits were conservatively calculated by forecasting the increase in bicycle use and associated decrease in motor vehicle use. The analysis draws on data from other cities that have completed an-all ages and abilities bicycle networks, and accounts for higher capture rates for short trips.

### Calculated returns include:

### Reduced car trips

Of the 300,000 motor vehicle trips bound to the central business district and university area daily, there is an estimated reduction of 20,000 trips (7 percent) as a result of the all ages and abilities bicycle network. For citywide trips, not just those bound to the downtown area, there

### Review Copy 09/12/2014

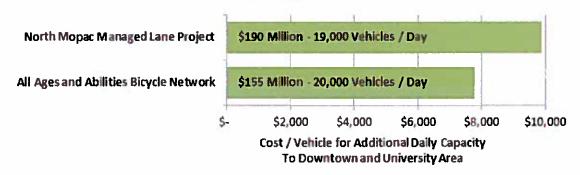
is an estimated reduction of 170,000 daily driving trips, equating to 460,000 miles traveled daily.

### Regional mobility and congestion management

The 20,000 fewer trips to central Austin as a result of the \$155 million all ages and abilities bicycle network results in the same increased motor vehicle capacity as the MoPac Improvement Project, a \$190 million 11-mile urban freeway project adding a single managed lane in each direction. This demonstrates that the investment in the all ages and abilities bicycle network is on par with other large mobility projects in managing regional congestion.

Comparison of Regional Mobility Projects

### **Regional Mobility Project Costs**



Source: City of Austin

### Boost affordability

By offering people a viable low-cost transportation option, the bicycle network can help families significantly cut the household expense of owning and operating a motor vehicle. Due to decreased vehicle miles traveled, Austin residents collectively save \$170 million in direct driving costs annually.

### • Public health benefits

Increasing the percentage of travelers who regularly bicycle for transportation directly correlates to improved public health. The increased physical activity associated with shifting short trips to bicycle trips would equate to 130,000 people or 15 percent of Austinites meeting their daily minimum physical activity.

### Environmental benefits

By reducing vehicle trips, bicycling reduces the pollution from motor vehicles. The reduction in motor vehicle miles traveled would result in a reduction of 84,000 metric tons of carbon per year, equivalent to the annual carbon absorption of a forest one third the size of the City of Austin.

### **Barrier Removal**

There is an existing and extensive network of painted bicycle lanes throughout the city that is still incomplete. While not offering the same quality as protected bicycle lanes, these lanes can often be

installed in locations where protected lanes are not feasible. This will extend the reach of the all ages and abilitles bicycle network. The Plan prioritizes the funding and removal of barriers in the painted bicycle lane network, estimated at a cost of \$10 million.

### Chapter 2: Bicycle Programs

The City of Austin seeks to help people of all ages and abilities realize the full potential of Austin's investment in the bicycle system through broad and diversified program support.

Education and encouragement programs are recommended to raise awareness, communicate the benefits of bicycling, promote the use of the bicycle network, and help people learn how to bike safely. These programs should target all demographics groups. The Plan recommends programs directed toward both students, during their formative years to create changes in lifelong transportation habits, and adults, to ensure the entire population has access to the information they need to expand their transportation choices. The Plan recommends that the City partner with other transportation providers to create a SmartTrips program - a proven multimodal education and encouragement model program designed to reduce drive-alone trips. The City of Portland's investment in a SmartTrips program resulted in a 9 to 13 percent reduction in drive-alone trips for each neighborhood it served each year for a decade.

In coordination with the Austin Police Department, consistent enforcement of the rules of the road for all users is important in improving safety for all travelers. Law enforcement officers and the bicycle community alike must understand and apply the laws in order to build a cooperative relationship and safer streets.

### Chapter 3: Bicycle Implementation

Following the five-point implementation framework set forth in Imagine Austin will enable the City of Austin to enact a more well-rounded approach that will have a broader and more lasting impact on the community. The five-points of the implementation program are as follows:

Education and Engagement

For successful implementation it is necessary to raise awareness, understanding and support for how the Plan aligns with Imagine Austin goals and elements. The Plan recommends partnering with other transportation providers to provide systematic education and encouragement.

internal Alignment

Realizing the plan will require the City of Austin to take a collaborative, cross-departmental approach to execution. It requires aligning City department planning efforts, long-range and short-term capital investments, major initiatives and work programs, and long-range budgets.



### Regulations

City code and regulations should support creation of an all ages and abilities bicycle network and help produce a built comfortable environment for bicycling. The Land Development Code and Transportation Criteria Manual currently are being revised to help create a more compact and connected city. The jurisdiction of the Plan is the City of Austin, including its extraterritorial jurisdiction.

### Public Investment

The plan defines an overall need for approximately \$165 million in capital investments for both the all ages and abilities bicycle network and bicycle lane barrier removal. In addition to capital costs (to construct protected bike lanes, paved trails and other infrastructure), the City and its partners must budget appropriately for operating costs (program staff, education programs, operations and maintenance). Bicycle Program staff under the Austin Transportation Department also needs to be expanded to deliver the priority infrastructure and programs recommended by the Plan. The plan recommends adding at least one Bicycle Program position in each of the next three years. For an investment strategy, the plan recommends Austin leadership elevate investment in our bicycle system to a level of regional significance. It recommends a multi-pronged, diverse and creative funding strategy. Traditional funding sources include the City general fund, transportation fund, voter-approved bonds and federal grants. Other innovative funding approaches and partnerships should also be developed.

### Partnerships

Numerous partners could support the plan's implementation, as the benefits of bicycling are communitywide and help advance all aspects of the community's Imagine Austin vision. Implementing the plan requires the coordination of all City of Austin departments, partner agencies and organizations, and the general public. By integrating bicycling as a tool to meet the goals of groups outside the City government, a broad coalition can be built that will significantly accelerate the realization of the plan.

### **Chapter 4: Measuring Success**

Ongoing monitoring and evaluation are important for assessing whether the plan is meeting its goals over time. Measuring real outcomes through the regular collection of data from bicycle facility use, ridership counts, surveys, mode splits and other metrics used to track the growth of bicycling over time, along with qualitatively evaluating the user experience. While progress will be assessed over the long-term, data should be collected on a regular basis to help track progress. This information will allow for adjustments to improve implementation efforts toward the Plan goals.



# City of Austin 2014 Bike Plan Update

Maximizing the contribution of bicycling to Austin's quality of life...





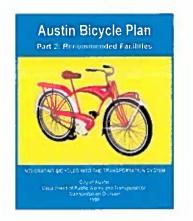
## WHY UPDATE THE BICYCLE PLAN?

Creating the future Austin



## Current Bicycle Planning Efforts: **Urban Trails Master Plan and Bike Plan Update**

1998



2014





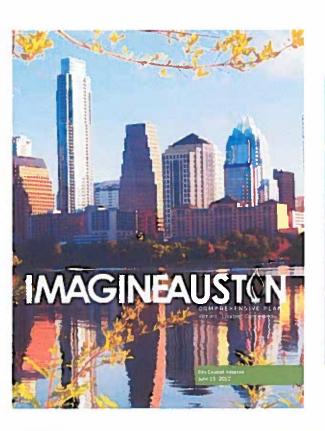


2009





## Bicycling and Active Transportation Support Imagine Austin Plan



Priority Program #1: Invest in Compact

Priority Program #8: Align Code

Priority Program #3: Workforce Development

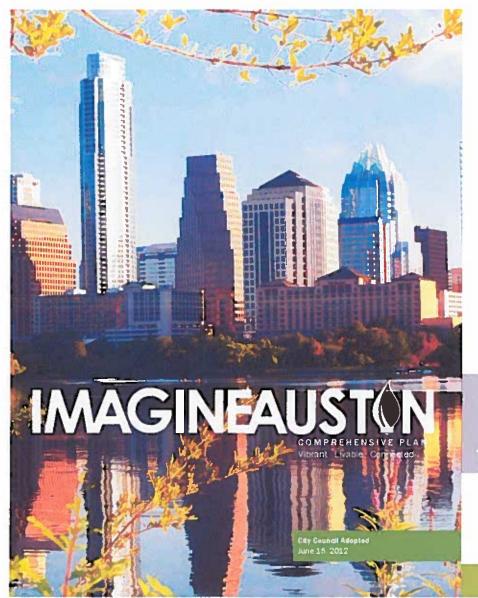
Priority Program #5: Creative Economy Priority Program #2: Sustainable Water

Priority Program #4: Green Infrastructure

Priority Program #6: Household Affordability

Priority Program #7: Healthy Austin





### A Shift in Focus:

"To Create and Promote the best-environment for the friendly co-existence of bicycle riders and other transportation users in Austin"



"To maximize the contribution of bicycling to Austin's quality of life"

October 14, 2014



# HOW ARE WE APPROACHING THE UPDATE?

Elements of the 2014 Bicycle Plan Update



## The Bicycle Plan is a 5 E's Approach

## Engineering



- Updates for all ages and abilities network
- Includes cycle tracks recommendations

### Education



- 45,000 children educated annually on bicycle safety.
- 300 + taught in Defensive Cycling annually.

### Encouragement



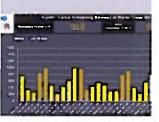
- 1,500 bike light sets distributed in 2013.
- Policies to encourage developers to build showers, locker rooms, and secure bicycle parking.

### Enforcement



- Almost 700 citations given to cyclists annually by APD (since 2007)
- Vulnerable Road
   User Campaign

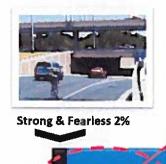
### Evaluation



- 2% of Austinites use a bicycle to get to work; compared to a 1% national average (2011 US Census).
- 6% in Central City



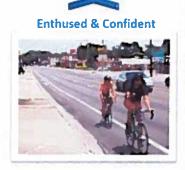
## Four Types of Transportation Cyclists in Austin By Proportion of Population



Less than 20% of Austinites will ride in Bicycle Lanes

Interested but Concerned 39%

No Way No How 44%







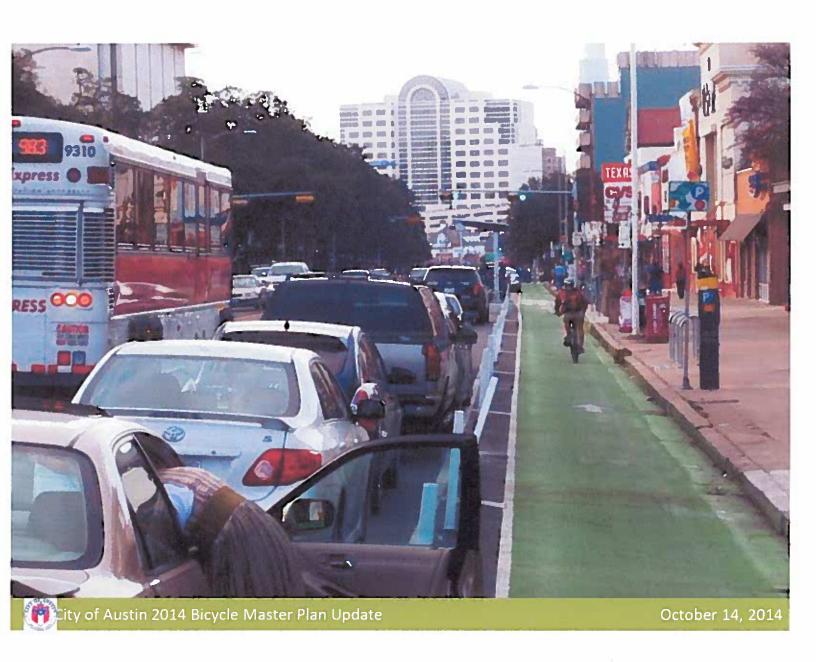




## Four Types of Transportation Cyclists in Austin By Proportion of Population



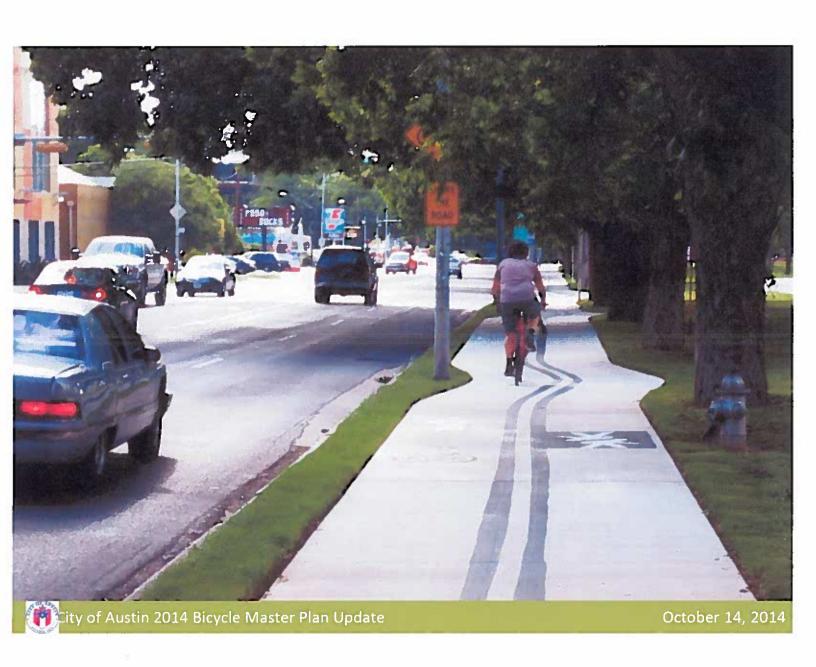
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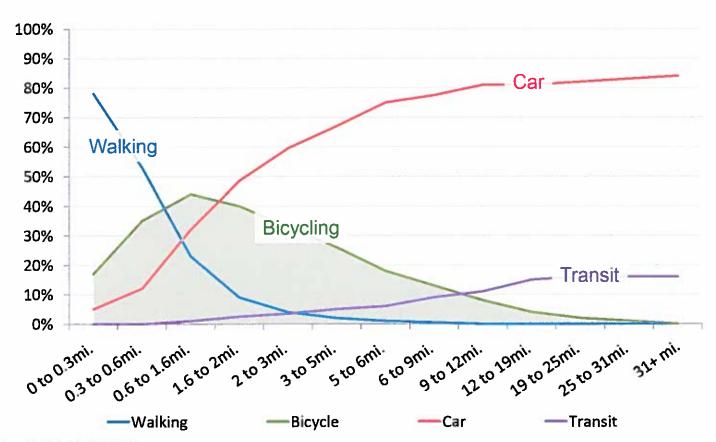








## Capture Short Trips by Bicycle



Source: RWS/AVV 2005 /MON 2005

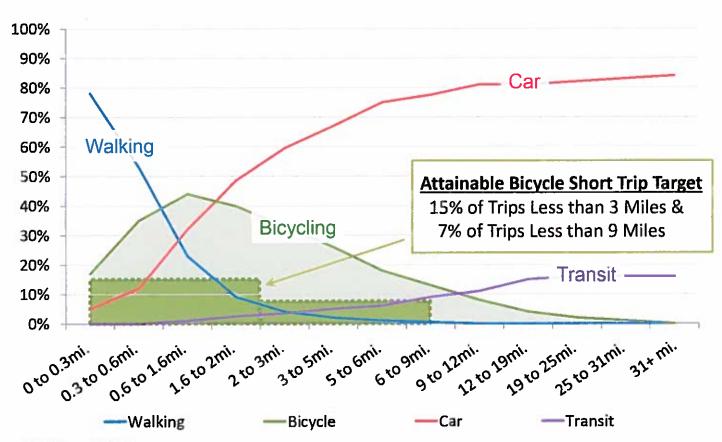


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## Capture Short Trips by Bicycle



Source: RWS/AVV 2005 /MON 2005

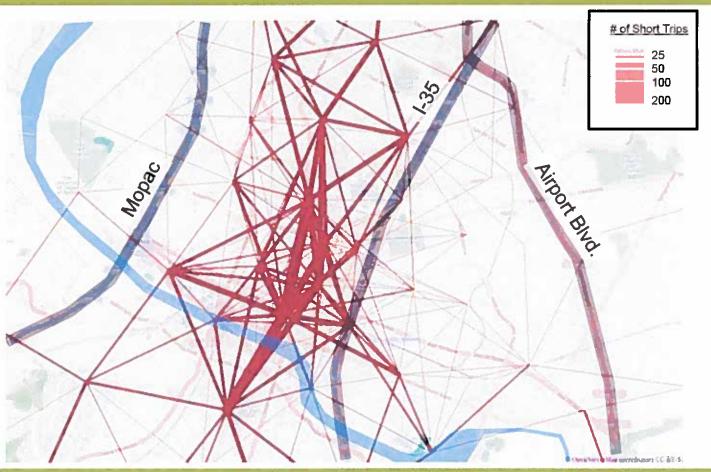


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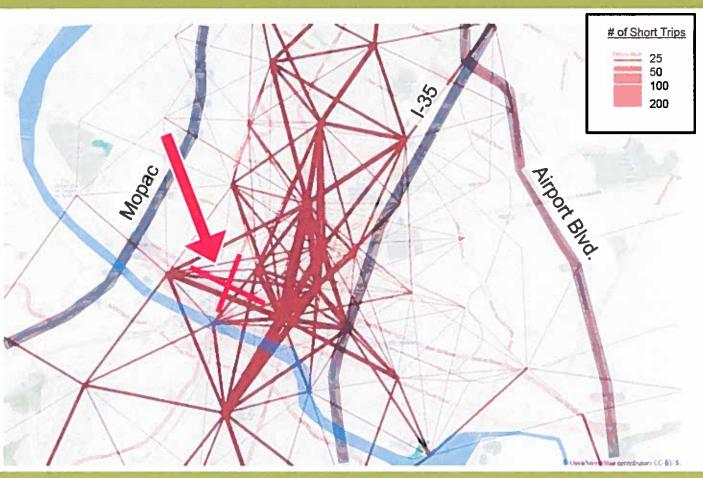


## Spider Diagram of Short Car-Trips (0-3 mile)



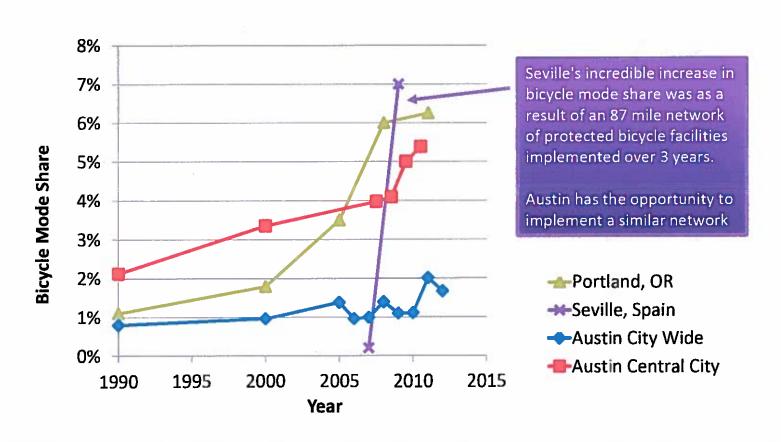


## Intersection of 5<sup>th</sup>/6<sup>th</sup> and Lamar





## Rise of Cycling in Over Time in Portland, Seville, and Austin



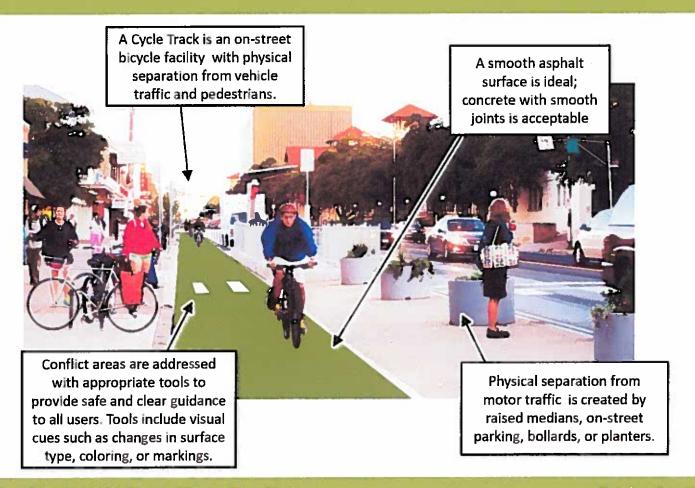


## WHAT IS THE PLAN MADE OF?

Our strategic focus

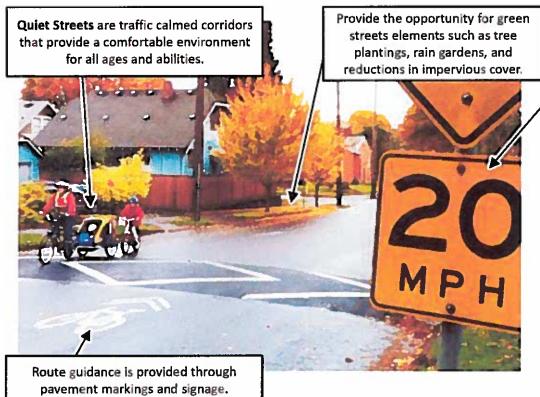


## Toolbox: Cycle Tracks





### **Toolbox: Quiet Streets**



Motor vehicle speed and volumes are managed to achieve safety and comfort for all ages or abilities.

### Target Speed and Volume:

- 25 mph or less (20 mph preferred)
- 1,500 vehicles per day preferred; up to 3,000 vehicles per day in limited areas.

### **Target Locations:**

- Residential streets where traffic calming is desired.
- Commercial corridors where heavy motor vehicle traffic is less desired.



### **Toolbox: Intersection Treatments**

INTERSECTION TREATMENTS help users comfortably cross major streets on key routes.

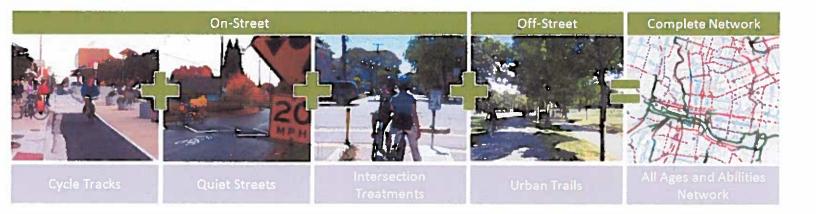
Intersection Treatments Include:

- Crossing signs and markings
- Median refuge islands and curb extensions.
- Crossing devices including actuated warning beacons and signals.





## Creating a Network:





## Creating a Network:





### The 8 to 80 Test:

An **8 year old** traveling with an **80 year old** should be able to traverse the city comfortable and safely.



## Recommended Bicycle Facility

### **Speed and Volume Criteria**

	Î	Average Annual Daily Traffic (vehicle per day)		
		Less than 3,000	3,000-9,999	10,000+
85th Percentile	< or =30	Shared*	Bike Lane	Buffered
Speed (MPH)	31-40	Bike Lane	Buffered	Protected
Meaured or	41-50	Buffered	Protected	Protected
Projected	> 50	Protected	Protected	Protected

<sup>\*</sup>Local streets that are important for the all ages and abilities network with less than 3,000 vpd and 30 MPH should be treated as necessary to meet the performance guidelines for Quiet Streets.

### **Special Consideration Will be Given To**

- On-street parking pressures
- Delivery activity
- Network context



### **Bicycle Network Priorities**

### Long-Term Recommendations

- Based on Speed and Volume Criteria
- Decades Long Build-out

### Recommended Short-Term Network

- Highest Return on Investment
- Target Short Trips



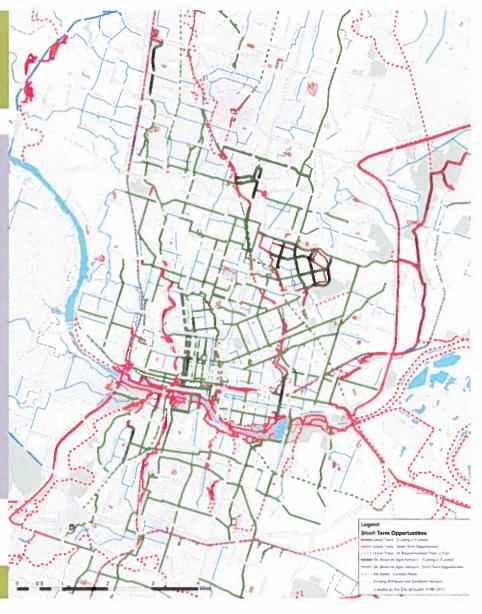


# Draft Short-term All Ages and Abilities Bicycle Network Central Austin

#### Focus on where short trips exist

- The central city
- To major transit stations
- Key feeder routes to the central city
- To schools and to and along parks
- Supporting Imagine Austin Centers

\*Short Term defined as potential implementation within 5 years





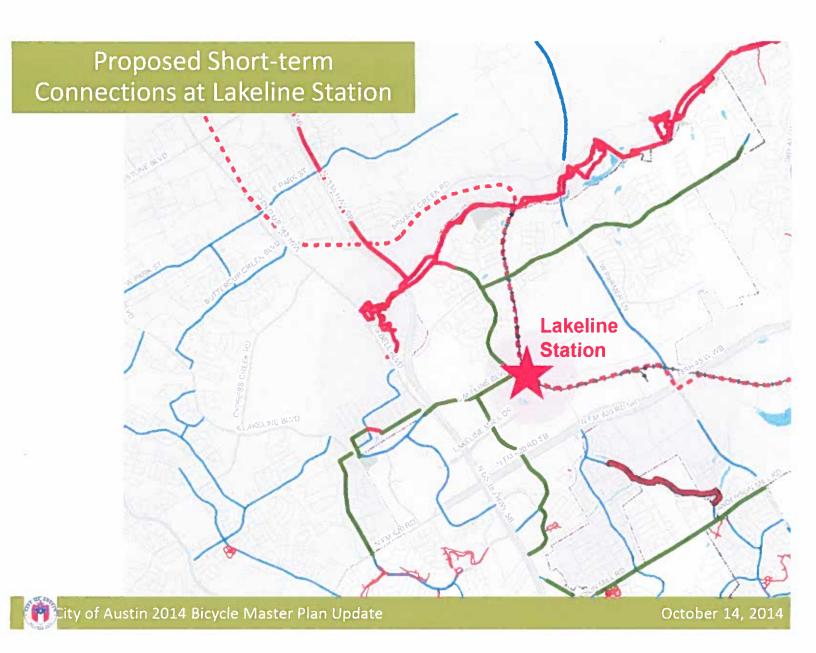


# Bicycle Lane Network Barriers

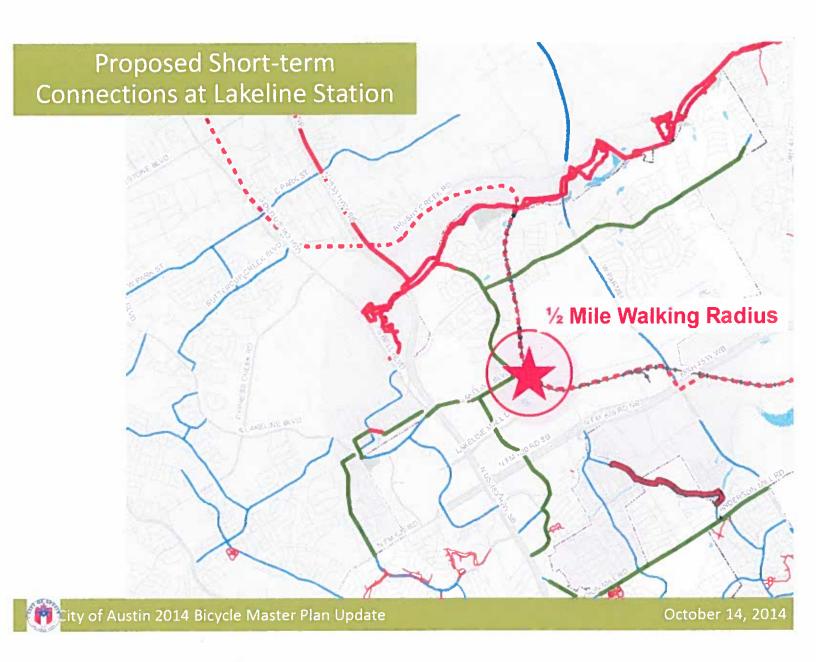
- Updated top 100 barriers
- Removal of barriers prioritized in plan



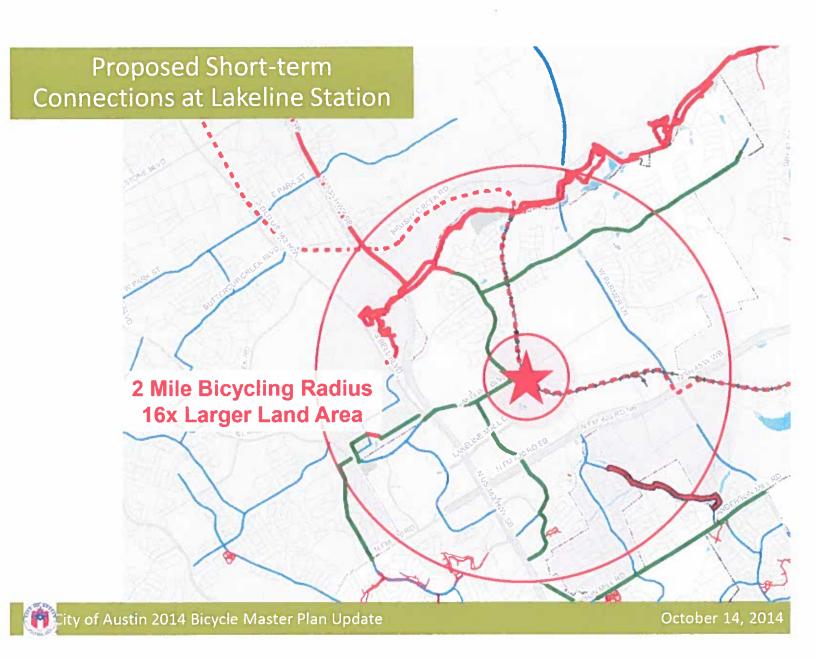




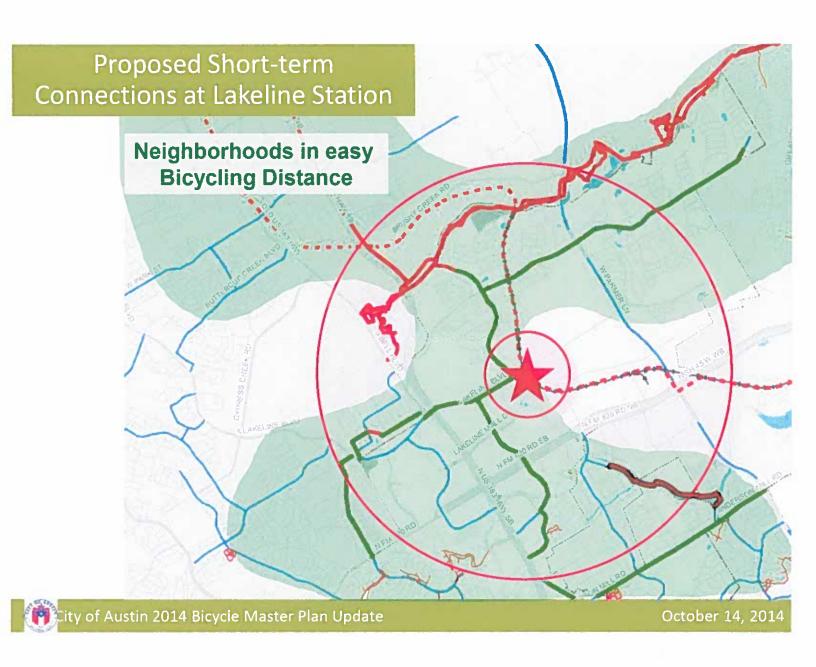














# High Capacity Bicycle Parking at Transit Stations









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# Integrating Transit with Bike Share



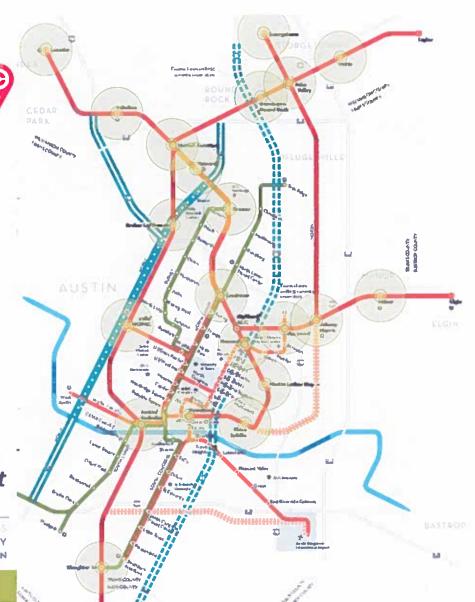
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# Integration with project connect §

- Create feeder bikeways to high capacity transit stations in outlying areas
- Increase transit use and reduce motor vehicle trips





HIGH-CAPACITY
TRANSIT VISION





# Implementation and Cost Considerations





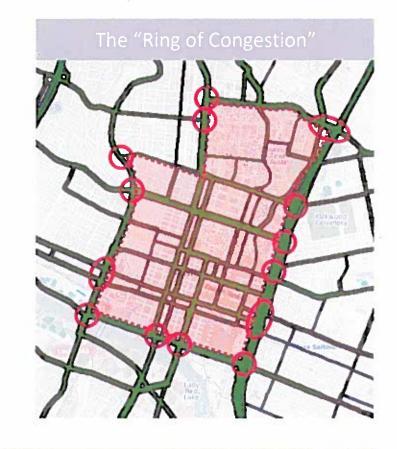
## Benefits of Short Term Network Significant Mobility Improvements

Our DRAFT Analysis Shows
Of the 300k passenger vehicle trips that
enter the "Ring of Congestion" Daily

36% are less than 3 miles

If only 15% of these trips 0-3 miles and 7% of trips 3-9 miles are converted to bicycle trips

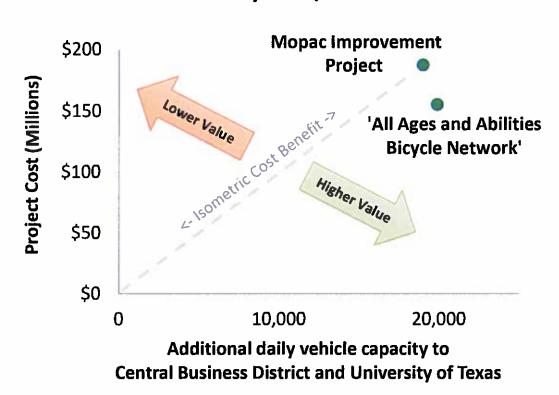
There would be a total reduction of 7% all motor vehicle trips to the Ring of Congestion





## Cost Benefit to Regional Mobility

#### **Mobility Cost / Benefit**





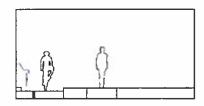
# Benefits of All Ages and Abilities Network Continued

- Citywide Mobility Improvements:
  - A reduction of 170,000 daily driving trips
  - A reduction of 460,000 daily vehicle miles traveled
- Boost Affordability: Due to decreased vehicle miles traveled, individuals would save a total \$170 million in direct driving costs annually.
- Public Health: 130,000 people or 15% of Austinites meeting their daily minimum physical activity. Savings from avoidance of disease associated with sedentary lifestyle per person is estimated at \$128 per person.



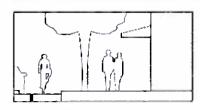
## Implementation with Development

#### **Existing**



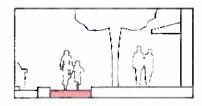
Pre Development Blcycle Lane

#### **Opportunity Lost**



Post Development No Change in Curb Line Opportunity for Superior Bicycle Facility Lost

#### Superior Bicycle Facility Achieved



Post Development
Curb Line Relocated Through Redevelopment
Cycle Track Barrier Curb built by Development
Assistance Program or CIP Project
Superior Bicycle Facility Achieved



# Boards, Commissions, and Council Status

Date	Meeting	Bike Plan Approval?
10-Mar	Comprehensive Planning Committee - Planning Commission	Briefed
7-Apr	Pedestrian Advisory Council	Approved
8-Apr	Urban Transportation Commission	Approved
16-Apr	Environmental Board	Approved
19-May	Parks: Land, Facilities, and Programs Committee	Approved
27-May	Parks Board 6-8pm Boards and Commissions Room	Approved
2-Jun	Comprehensive Planning & Transportation Committee (CPTC) 2-4pm Boards and Commissions Room	Briefed
17-Jun	Codes and Ordinances Subcommittee of Planning Commission	Briefed
24-Jun	Planning Commission	Not Recommended
18-Sept	Urban Transportation Commission	Recommended PC Action
14-Oct	Planning Commission	
6-Nov	City Council (conduct public hearing)	





### **CITY OF AUSTIN 2014 BIKE PLAN UPDATE**

For more information: <a href="http://austintexas.gov/yourpath">http://austintexas.gov/yourpath</a>

For comments contact: Nathan Wilkes, nathan.wilkes@austintexas.gov

City of Austin Bicycle Program

