Planning Process

This section provides a planning process that can be used as a guide to formulate a local community plan. For more information on the planning process for a local community plan, see Chapter 2 of the American Association of State Highway Transportation Officials (AASHTO) Guide for the Development of Bicycle Facilities 2012 Fourth Edition.

I. **Plan Committees and Public Process**
   a. A variety of committees may be used to provide support, technical information, and guidance for the plan. The committees should include city staff and members of the community who have an interest in improving bikeways and trail facilities.
   b. Public involvement is needed to understand and illustrate the user needs of all ages and abilities. It can include input from community surveys, newsletters, and/or at least two or more public meetings, and other means of public feedback.

II. **Coordination with other Documents and Planning Policies**
   a. Conduct a review of city policies, ordinances and processes regarding bicycle facilities.
   b. Speak with other agencies such as the county, TXDOT, and NCTCOG to coordinate plans and policies at the local and regional level.

III. **Planning Bicycle Transportation Networks**
   a. Conduct an analysis to determine where improvements are needed to connect important destinations. This is a multi-step process where choices should be made regarding which improvements receive priority, and what level of accommodation each will receive. See AASHTO Guide for the Development of Bicycle Facilities 2012 Fourth Edition Chapter 2.5 for more guidance.
      i. User Needs

         Balance the full range of needs of current/future bicyclists and trail uses of all ages and abilities.
      ii. Traffic Volumes, Vehicle Mix, and Speeds

         Motor vehicle traffic volumes, vehicle mix, speeds, and driveways should be considered. Some bicyclists may avoid areas with high speeds, high volumes of traffic, and frequent driveways unless a facility offers some separation from traffic. Bicyclist may desire to use major roadways because their directness typically make them more efficient routes.
      iii. Overcoming Barriers

         Overcoming constraints and physical barriers such as freeways or waterways should be considered when developing a plan. A single barrier may make an appealing route undesirable. Input from local bicyclists, along with a field analysis of major highway crossings, railroads, and river crossings, can help identify major barriers.

iv. Connections Between Destinations

Bikeways should allow bicyclists to access key destinations, such as large employers, parks, schools, shopping, transit connections, and other uses.

v. Directness of route

A bikeway should connect to locations with the most direct route as feasible.

vi. Logical route

Does the planned bicycle and trail network make sense? A network should include facilities that bicyclist already use, or have expressed interest in using.

vii. Intersections

Bikeways and trails should minimize the number of stops as feasible. If bicyclists and trail users are required to make frequent stops, they may avoid the route or ignore traffic control devices.

viii. Aesthetics

Scenery should be taken into account along facilities. People tend to prefer more attractive areas, and trees can provide shade in warmer months.

ix. Spacing or density of bikeways

A bicycle network should be planned for maximum use and comfort, and thus should provide appropriate network density relative to local conditions.

x. Safety

Analysis of crash data and reviews of crash reports may aid in identifying where improvements to the bicycle transportation network are needed based upon safety experience.

xi. Security

Security issues are important to consider especially for sections of shared use paths that are not directly visible from roads and neighboring buildings. Security measures may include increased lighting, Emergency Call Box System, and an Emergency Locator System (911 location signs placed along a trail to assist trail users identify their location to dispatchers so emergency services can respond to incidents without delay).

xii. Overall Feasibility

Decisions regarding the location of new bikeways and trails may also include an overall assessment of feasibility given physical right-of-way constraints.

IV. Technical Analysis Tools

a. Technical analysis tools may assist in the planning process of on-street bikeways and off-street trails and pathways. Listed below are technical analysis tools with information and graphics to communicate existing conditions and opportunities. For more

information, reference AASHTO Guide for the Development of Bicycle Facilities 2012 Fourth Edition Section 2.6.

i. Conduct data collection and a flow analysis for bike count data to determine future needs. Cities regularly collect and analyze data on motor vehicle traffic (average daily volumes, peak hour volumes, turning movements, and speed) to determine such items as number of travel or turn lanes, and signal timing. Bike-related data collection can also be used in this way. More information about data collection and flow analysis is available at the National Bicycle and Pedestrian Documentation Project.

ii. Quality of service (or Bicycle Level of Service (LOS)) tools can be used to inventory and evaluate existing conditions, or forecast future conditions for bicycling under different roadway scenarios. A variety of bicycle compatibility criteria have been created to quantify how compatible a roadway is for accommodating safe and efficient bicycle travel. Bicycle LOS evaluates bicyclists' by safety and comfort with respect to motor vehicle traffic while traveling in a roadway corridor. To evaluate Bicycle LOS, a mathematical equation is used to estimate bicycling conditions in a shared roadway environment. This modeling procedure calculates a user comfort rating, from factors such as curb lane width, bike lane widths and striping combinations, traffic volumes pavement surface condition, motor vehicle speeds, presence of heavy vehicle traffic, and on-street parking. For more information, reference the Real-Time Human Perceptions Toward a Bicycle Level of Service and the Highway Capacity Manual 2010.

iii. Conduct a safety analysis to review crash trends, which will help to choose and create safer facilities. By analyzing crash data, planners may target specific areas by understanding the combination of conditions that could be creating high crash rates. When using crash data to determine potential locations for improvements to reduce crash frequency or severity, it is important to review at least three years of data in order to account for anomalies that might occur in a single year. The Pedestrian and Bicycle Crash Analysis Tool (PBCAT) is a software product developed by the Federal Highway Administration that can be used to develop and analyze a database containing details associated with crashes between motor vehicles and pedestrian or bicyclists. The Bicycle Intersection Safety Index can be used to evaluate individual intersection approaches and crossings.

iv. Conduct a cost-benefit analysis to quantify the impact of new facilities. Discuss the findings in terms that are clear to understand for the general public, elected officials, and other key stakeholders. A cost-benefit analysis tool for bicycle facilities can be found at the Pedestrian Information Center.