

Strategic Five Year Plan for Bicycling

City of Manhattan, Kansas

Introduction

The Bicycle Master Plan was created in 1998 and has since been cited as a possible reference for bicycle related projects in the City of Manhattan. It was not formally adopted by the City and therefore, has not been used as official guiding policy for the Urban Area Planning Board for new development or by public works engineers for renovation. Rarely is the Bicycle Master Plan used to guide policy makers when new projects are being constructed or current infrastructure is being updated.

While the goals of the Bicycle Master Plan are consistent with current goals of the Bicycle Advisory Committee and City staff, the Bicycle Master Plan does a poor job on advising implementation of those goals. Few improvements to infrastructure have been accomplished since the creation of the 1998 Bicycle Master Plan. With the formal adoption of this document, we hope to begin the process of making the City of Manhattan a more bicycle-friendly community by creating a structured plan for implementation of infrastructure.

Bicycles are an increasingly important element to a healthy and vibrant community where residents want to call home. In environments where bicycling is encouraged and appropriate facilities are available, residents report a greater sense of community, better quality of life and being overall happier. Objective measures show that bicycle-friendly communities have less crime, higher property values and less disease states like obesity, cancer and hypertension. Because of this, it is important to promote cycling in the community.

Options for future direction

This document focuses on the next five years of bicycle infrastructure in the City. These highest cost to benefit projects are highlighted in Map 1 and outlined on a yearly basis in Table 1, while Map 2 highlights total proposed infrastructure and Table 2 outlines the timeline for implementation of that infrastructure. All of the projects in Table 2 are necessary to complete a network for bicycle transportation within and around the City. It should be noted that each list, both Table 1 and Table 2, are written such that a priority list of projects can be deduced, with the highest priority in the most recent years.

Types of facilities

Conceived as an interconnected web of bicycle facilities, this network of trails, bicycle lanes, bicycle boulevards and multi-use paths will serve to facilitate bicycle commuting throughout the City of Manhattan. Similarly to vehicular transportation plans, this plan focuses on connecting local points of interest in the most convenient way so that bicyclists are able to ride safely and comfortably from destination to destination.

Facility design should address two basic concepts:

1. An interconnected network of designated bicycle routes should provide access to every major destination in the City.
2. An average bicyclist should feel comfortable bicycling on designated routes during any time of the day.

Bicycle Boulevards

At the core of the proposed infrastructure are bicycle boulevards. A bicycle boulevard is a shared roadway (bicycles and motor vehicles share the space without marked bicycle lanes) where the through movement of bicycles is given priority over motor vehicle travel on a local street. Traffic calming measures are used to control traffic speeds and discourage through trips by motor vehicles. These traffic control measures are designed to limit conflicts between automobiles and bicycles and favor bicycle movement on the bike boulevard.

Bicycle boulevards are the safest way for the average person to ride a bicycle in the City of Manhattan. By adding traffic calming features and reducing bicycle-vehicular conflicts, bicyclists will be able to travel safely from destination to destination.

The term bicycle boulevard is has been used to describe many different attributes of shared roadways. For our purposes, a bicycle boulevard must provide at least three (3) of the following five (5) conditions:

1. Decreased speed limit to 18 miles per hour
2. A shared-lane marking in each direction on every block to denote that bicyclist are to ride with traffic
3. Right-of-way for bicycles at intersections whenever possible
4. Traffic calming features that inhibit additional through traffic
5. Way-finding signs that show distance or time to local destinations

Traffic calming feature can include but are not limited to: Traffic circles, divided medians, speed humps, raised sidewalks, curb extensions, partial closures that only allow bicycle traffic, street trees and midblock street closures.

Bike Lanes

Bike lanes are a portion of the roadway that which has been designated by stripping, signage and pavement markings to show exclusive use by bicyclists. Not only do bike lanes facilitate bicycling for the average person but they also make the movement of both motorist and bicycle more predictable.

According to the AASHTO Guide, pp 22-24, bike lanes must have the following critical dimensions:

1. 4 feet (1.2m): minimum width of bike lane on roadways with no curb and gutter
2. 5 feet (1.5m): minimum width of bike lane when adjacent to parking, from the face of the curb or guardrail
3. 11 feet (3.3m): total width for shared bike lane and parking area, no curb face
4. 12 feet (3.6m): shared bike lane and parking area with a curb face.

Furthermore, striping for a bike lane must be:

1. 6-inch width (150mm): solid white line separating bike lane from motor vehicle lane (possibly increased to 8-inches (20mm) where emphasis is needed)
2. 4-inch width (100mm): optional solid white line separating the bike lane from parking spaces

At intersections, bike lane striping should not be installed. The bike lane striping should stop at the near side street property line extended and then resume at the far side property line. However, dotted guidelines can be used when needed to assist bicyclist at particularly complex intersections or multi-lane roundabouts.

Multi-use Paths

Multi-use paths are used as a last resort to separate bicyclists from motorists on busy, multi-lane roadways (ADT>10,000). While multi-use paths are facilities designated for bicycle and pedestrian traffic, trails are improved recreational facilities not designed for transportation purposes. To serve transportation needs, multi-use paths must be at least five feet in width and have a solid center white line separating directional traffic.

Pavement surface quality

Pavement surfaces should be smooth, and the pavement should be uniform in width. Wide cracks, joints, or drop-offs at the edge of traveled way parallel to the direction of travel can trap a bicycle wheel and cause loss of control; holes and bumps can cause bicyclist to swerve into the path of motor vehicle traffic. Therefore, it is necessary that all surfaces be uniform and smooth.

Drainage inlet grates

Drainage inlet grates and utility covers are potential obstructions that can cause serious damage to the bicycle wheel and/or injury to the bicyclist. Therefore, bicycle safe grates and utility covers will be used on all roadways designated as bicycle routes.

Policies for Future Growth

Providing safe facilities for pedestrian and bicycle transportation in addition to automotive transportation is key to developing a sustainable community. The following transportation policies should be incorporated into all development in Manhattan to facilitate pedestrian and bicycle transportation opportunities. As previously discussed the transportation network alternatives should include bike lanes, trails, paths, alternative access points and a network of interconnected roads, bike lanes, paths and trails.

Policy 1 – Path Design

Sidewalks, shared use paths, street crossings (including over- and under-crossings), pedestrian signals, signs, street furniture, transit stops and facilities, and all connecting pathways shall be designed, constructed, operated and maintained so that all pedestrians and bicycles, including people with disabilities, can travel safely and independently throughout any development.

Policy 2 – Collector and Arterial Multi-use Design

Arterial and collector roadways should be designed to provide for bicyclists and pedestrians to cross corridors as well as travel along them. Where bicyclists and pedestrians may not commonly use a particular travel corridor that is being improved or constructed, they will likely need to be able to cross that corridor safely and conveniently. Therefore, the design of intersections and interchanges shall accommodate bicyclists and pedestrians in a manner that is safe, accessible and convenient.

Policy 3 – Multi-use facility design

The design of facilities for bicyclists and pedestrians should follow design guidelines and standards that are commonly used, such as the *AASHTO Guide for the Development of Bicycle Facilities*, *AASHTO's A Policy on Geometric Design of Highways and Streets*, and the ITE Recommended Practice "*Design and Safety of Pedestrian Facilities*".

Policy 4 – Rural Roadway Design

In rural areas, paved shoulders should be included on roadways used by more than 1,000 vehicles per day. Paved shoulders have safety and operational advantages for all road users in addition to providing a place for bicyclists and pedestrians to operate. Rumble strips are not recommended where shoulders are used by bicyclists unless there is a minimum clear path of four feet in which a bicycle may safely operate.

Policy 5 - Transportation Network

Every effort should be made to focus on implementation of grid pattern street connectivity. Any street segment longer than 500 feet should have bicycle and pedestrian access ways to link adjacent residential areas. Such access ways can be utilized for emergency vehicles and should be designed with appropriate widths and materials. Appropriate signage should also be used to direct bicycle and pedestrian traffic.

Policy 6 – Capital Projects

Capitol Improvement Project funds should be used to develop new bicycle and multi-use transportation projects. The design and construction of new transportation facilities should anticipate and provide for future demand for bicycling and walking facilities. Current lack of connectivity should not preclude funding of projects. For example, a bridge that is likely to remain in place for 50 years, might be built with sufficient width for safe bicycle and pedestrian use in anticipation those facilities will be available at either end of the bridge even if that is not currently the case.

Policy 7 – Land Use

Increased use of mixed use development and practices should be used to decrease urban sprawl and reliance on the automobile. New subdivisions should be required to incorporate a mix of housing types and include retail and/or office components to help to reduce the need for long commutes for work and services.

(This section does not replace the current BMP but is in addition to the current policy.)