MANHATTAN
LINEAR PARK

Implementation Guidelines
January 1998
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1.0 Introduction

1.1 Purpose

The City of Manhattan recognizes the importance of public pathways for their recreational value and as an alternative mode of transportation to the motor vehicle. In response, this document's purpose is to define the design criteria and level of expectations for the City of Manhattan’s Linear Park Trail System. Although appropriate variances from the criteria stated in this document may be considered, future developers should use this document as a tool to meet the design expectations of the City.

1.2 Design Goals

The design standards stated below are a product of the functional and aesthetic goals established for the trail system. Trail design decisions should be based on the following goals:

- to provide a safe and functional environment for pedestrians, bicyclists, and other non-motorized modes of travel
- enhance the image of the adjacent neighborhoods and roadway
- work with the existing features, such as existing plant material and rock outcroppings, to reflect the inherent natural environment
- identify environmentally sensitive areas and insure their protection for the future
- use simple, classical, furnishings made of durable materials to insure a long lifetime of use
2.1 Location of the Linear Park & Its R.O.W's

The Manhattan Linear Park shall be located according to the Linear Park Master Plan as amended to the City of Manhattan Comprehensive Parks Master Plan. The trail should lie specifically within the R.O.W. or parcel that is defined depending on its location. Trails adjacent to streets must maintain a minimum distance of 5'-0" from the back of curb to the closest edge of the trail (Figure 2.1.a, b).

Figure 2.1.a

Additional R.O.W. Requirements at Arterial Streets

Figure 2.1.b

Additional R.O.W. Requirements at Collector and Residential Streets
Trail locations that are not adjacent to streets must have an average R.O.W. width of no less than 50'-0". This average width shall be determined by measurements taken at 50'-0" intervals on center along the trail centerline. In no case shall the R.O.W. or parcel width be less than 25'-0" (Figure 2.1.c). These R.O.W.s may overlap utility easements, but the trail surface must maintain a minimum clearance of 5'-0" from any above grade utility structure. The trail itself shall keep a minimum distance of 3'-0" from the Linear Trail R.O.W.

2.2 Trail Layout & Dimensions

The path width shall be 10'-0" and the horizontal radius, measured from the path's centerline, shall be a minimum of 50'-0" to accommodate two-way bicycle traffic (Figure 2.1.a,b).

A meandering trail is more inviting to the user and enhances the overall experience. To insure that the pattern of the trail takes a varied form, there will be a minimum of one curve per 200 linear feet of trail, unless site specific conditions hinder the ability to accomplish this (Figure 2.1.a,b).

2.3 Sight Distance

The curvilinear form of the trail poses a concern about adequate sight distance. It is important that the user is able to see oncoming trail traffic from at least 150'-0" (Figure 2.3.a). Although trees are an exceptional obstruction to the sight distance requirement, they must be trimmed of branches and heavy vegetation up to a minimum height of 8'-0".

Two Examples of Linear Trail R.O.W Requirements at Locations Not Adjacent to Streets

Figure 2.1.c

Sight Distance Requirement

Figure 2.3.a
2.4 Trail Access Points & Easements

Certain instances may occur where the trail might follow along a drainage-way or between rows of housing, breaking the visual connection between the trail and public streets. Although the sense of seclusion may add to the experience of the trail user, it also restricts the user’s ability to access or depart from the trail, presenting a security threat. Therefore, access to the Linear Park from adjacent residential streets shall be provided at intervals of ¼ mile (1320’-0” linear feet) or less when the Linear Park R.O.W. abuts the rear property line of adjacent residential lots. This easement must be a minimum width of 15’-0” with a concrete sidewalk no less than 8’-0” wide.

For commercial, industrial, and office areas, the easement width increases to 30’-0” with a concrete sidewalk no less than 10’-0” in width. The requirements for slopes, horizontal curves, and clearances applicable to the Linear Park Trail shall also apply to all of the access sidewalks.

2.5 Trail Heads

Trail heads serve as a formal entry providing the user with the necessary accommodations and information to enjoy the trail. Accommodations such as vehicular parking, seating, and trash receptacles combine to create a suitable environment to initiate the trail experience.

In order to make the linear park accessible to a larger scope of users, parking lots shall be constructed at all trail heads at locations where existing parking is not available. These lots shall be sited in a manner to have a minimal impact on the visual aspects on the area. Technical details about the parking lot are explained below (Table 2.5.a) and the diagram on the following page (Figure 2.5.a).

<table>
<thead>
<tr>
<th>Element</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parking spaces required</td>
<td>Quantity to be determined by the City</td>
</tr>
<tr>
<td>Parking space dimension</td>
<td>9’-0” x 18’-0”</td>
</tr>
<tr>
<td>Handicap spaces required</td>
<td>Quantity to be determined by the City</td>
</tr>
<tr>
<td>Handicap space dimension</td>
<td>15’-0” x 18’-0”</td>
</tr>
<tr>
<td>Parking grade range</td>
<td>1% to 5% (1%-2% for handicap stalls)</td>
</tr>
<tr>
<td>Striping</td>
<td>3” wide (white)</td>
</tr>
</tbody>
</table>

Table 2.5.a

Available seating for trail users also encourages more people to take advantage of the Linear Park. Seating should be provided in close proximity to the trail in accordance with the specifications given in Section 5.1.

![Typical Trail Head Layout](image)

*Figure 2.5.a*
Trash receptacles also play a vital role in a trail head’s appearance by providing opportunities for users to properly dispose of litter. Receptacles shall be located in close proximity to the trail and seating areas where users are most likely to utilize them.

Rules signs and trail maps provide users with the necessary information to begin their experience on the linear trail. Rules signs should be located near the trail head in a highly visible area in close proximity to the trail (refer to Section 4.2). These signs should also display a map of the linear park offering the user a geographical reference of the trail and its features.

2.6 Distance From Obstacles

Some elements along the trail can be potentially dangerous as obstructions to the user. An obstruction can be defined as any physical element from ground level to 8'-0" in height. This includes, but is not limited to, benches, trash receptacles, fences, light standards, and tree branches.

To address this concern, objects considered as obstacles by the given definition will be kept at a minimum horizontal distance of 5'-0" from the edge of the path (Figure 2.6.a).
2.7 Trail Construction & Materials

The surface material for the trail shall be either 4" thick limestone screenings, 4" thick concrete reinforced with a 6" x 6" steel wire mesh, or 4" full depth asphalt (Figure 2.7.a). All of these surface materials shall be placed on a 6" depth compacted subgrade, compacted at 95% of standard maximum density.

2.8 Storm Water Management

For limestone trail segments, all storm water flow shall be collected and piped below the trail surface. Sheet flow of storm water across the trail surface will be allowed for concrete and asphalt trail segments.

2.9 Grading Considerations & Accessibility

In order to provide adequate surface drainage, the cross-slope of the trail should be at a minimum of 1%, but no more than 2% producing a semi-level surface.

The running slope of the trail shall not exceed 5%. The City will review exceptions to this requirement on a case by case basis.

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![Diagram of trail construction materials and grading considerations](image-url)
2.10 Retaining Walls & Railings

Certain situations may arise where the cross slope adjacent to the path exceeds a 4:1 rate. In order to insure the stability of these slopes, a retaining wall is required. The following examples are recommended styles of retaining walls for the trail system.

Flat-stacking limestone boulders enhance the natural image of the trail and therefore are the recommended materials for the implementation of retaining walls within the trail system corridor (Figure 2.10.a). The use of other materials, such as modular concrete blocks, shall be reviewed and approved on a case by case basis (Figure 2.10.b).

Where retaining walls with a height greater than 36” are necessary to allow implementation of the trail system, the recommended alternative shall be to step back a second retaining wall behind the first so that no one segment of retaining wall is more than 36” in height. The higher retaining wall section shall be setback a minimum of 36” behind the lower section. The purpose of this requirement is to avoid excessive and dangerous vertical drops as well as improve the visual character of the walls.
At any point where the trail is on the elevated side of a retaining wall that exceeds 30", a railing is required. Rails shall be made of 2" tubular steel and powder coated in forest green (Pantone color 357.U) (Figure 2.10.c).

In situations where the trail is on the elevated side of a retaining wall that does not exceed 30" in height a railing is not required, but a 5'-0" minimum distance must be maintained between the edge of the trail and the front edge of the retaining wall (Figure 2.10.d).

Situations Requiring a Railing

Figure 2.10.c

Required Spacing Between Trail and Retaining Wall Without a Railing

Figure 2.10.d
3.0 Trail Crossings

3.1 At Grade Street Crossings

Careful attention must be given when the trail system intersects vehicular traffic corridors. Appropriate identifications and provisions to both the trail user and the motorist can prevent tragic accidents.

These general provisions include (Figure 3.1.a):
- Intersections between the trail and streets will intersect at an angle from 70° to 90°.
- Semi-level areas, sloped no greater than 2% in any direction, shall be provided at a minimum distance of 10'-0" perpendicular to the street curb and at the same width of the path.
- Minimum sight distances within the trail and at street intersections must be maintained.
- Handicap ramps must be provided at every intersection where the street is curbed (Refer to Section 3.2).

In addition, a sight triangle must be provided at all intersections. The term sight triangle signifies the area void of any obstacles that would obstruct the vision of either the trail user or the motorist. The perimeter of the triangle begins at the intersection of the outside edge of the path and the back of curb and extends a minimum distance of 30'-0" perpendicular and 30'-0" parallel to the street. The height of this triangle begins 2'-0" above finish grade and extends to 8'-0" above finish grade. A sight triangle is required on both sides of the path. (Figure 3.1.a).
3.2 Handicap Ramps

The Manhattan Linear Park Trail System requires handicap ramps at any point where the path intersects a street curb. Details regarding the ramp are shown below (Figure 3.2.a).

![Handicap Ramp Detail](image)

Figure 3.2. a

3.3 Culvert Crossings

Certain instances may occur where it is ideal to cross below the street by means of an existing or proposed box culvert. These crossings require a minimum lighting level of 0.5 foot candles for safety concerns. The path within the culvert crossing shall be as shown in Figure 3.3.a & b.

![Existing Culvert Crossings](image)

Existing Culvert Crossings
Figure 3.3.a

![Proposed Culvert Crossings](image)

Proposed Culvert Crossings
Figure 3.3.b
4.0 Signage

4.1 General

Signs are a vital element in any trail system. By regulating the use of the trail and warning users of potential dangers, the trail is safer and more enjoyable for all users.

The signs proposed on this trail can be divided into three purposes: rules, informational, and regulatory/warning signs. As each purpose differs, so does the manner in which the sign is presented. The next three subsections describe suggested signs and their presentation for each of the purposes.

4.2 Rules Signs

The role of rules signs is to inform users of the trail expectations creating a more suitable recreational environment (Figure 4.2.a). These signs shall be located where the trail intersects an arterial street and/or at specific locations deemed necessary by City of Manhattan.

Below is a list of recommended rules for the trail system.

- PARK HOURS: ONE HALF HOUR BEFORE SUNRISE TO SUNSET
- Motorized vehicles and horses are prohibited on the Linear Park.
- Alcoholic beverages are prohibited.
- All dogs must be leashed.
- Have pride in our parks. Please do not litter or vandalize and report those who do to the police.
- For more information, call the Parks & Recreation Office located in Manhattan City Park at 587-2757 (58-PARKS).
4.3 Trail Information Signs

This category of signs includes information that regulates the direction, rate, and type of traffic on the trail. Examples of information signs to include are found in Figure 4.3.a.

Pedestrian Use
8" Sq. Black Image & Outline
On a Yellow Background

Bicycle Use
8" Sq. Black Image & Outline
On a Yellow Background

Yield to Pedestrians
8" x10" Black Image & Outline
On a White Background

Trail Information Signs
*Figure 4.3.a*

Information signs will be mounted together on a 4" square tubular steel post where the trail intersects a collector street. The posts shall be installed 4'-0" to the right of the right edge of the trail (*Figure 4.3.b.*). Not only are these signs important for their informational value, their highly visible location will identify the trail system to onlookers.
4.4 Regulatory & Warning Signs

Regulatory signs play a major role in maintaining an efficient and safe environment for the trail system by assigning certain expectations to the direction, rate, and type of traffic on the trail. Warning signs also play a vital role by bringing potentially dangerous situations to the user's attention. Examples of regulatory and warning signs are displayed in Figure 4.4.a.

- **Stop Sign**
  - Size: 16” square
  - Color: white letters & outline on a red background
  - Location: intersections

- **Yield Sign**
  - Size: 16” sides
  - Color: red letters & border on a white background
  - Location: merging trail traffic

- **Steep Incline**
  - Size: 8” square
  - Color: black image & outline on a yellow background
  - Location: 100’ before a steep incline

- **Slippery Surface**
  - Size: 8” square
  - Color: black image & outline on a yellow background
  - Location: 100’ before areas subject to slick trail surface conditions

- **Stop Sign**
  - Size: 16” square
  - Color: black, red, & green image & black outline on a yellow background
  - Location: 100’ before traffic lights (if intersection does not meet sight distance requirement)

- **Sharp Turn**
  - Size: 12” x16”
  - Color: black image on a yellow background
  - Location: turns where the required radius of 50’ is not met (one sign per turn each direction)

- **Bikeway Narrows**
  - Size: 16” square
  - Color: black letters & outline on a yellow background
  - Location: 50’ before the trail narrows

- **Bump**
  - Size: 16” square
  - Color: black letters & outline on a yellow background
  - Location: 10’ before an irregularity in the trail that would disrupt bicycling

- **Railroad Sign**
  - Size: 16” diameter
  - Color: black image & outline on a yellow background
  - Location: 100’ & 30’ before an intersection with railroad tracks

**Figure 4.4.a**
Due to the nature of the information displayed on the regulatory and warning signs, only one sign shall be affixed to each 2” square tubular steel pole. Regulatory and warning signs are also exceptions to the requirements for the minimum distance obstacles must be from the trail. These signs should be 4’-0” right of the outside edge of the trail for sufficient visibility (Figure 4.4.b).

The signs will be adequately located to warn a bicyclist traveling at a typical speed. Below is a table for minimum visible sight distances for each type of traffic sign (Table 4.4.a.)

<table>
<thead>
<tr>
<th>Type of Sign</th>
<th>Min. Sight Dist.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stop Signs &amp; Railroad Signs</td>
<td>200’</td>
</tr>
<tr>
<td>Other Regulatory &amp; Warning Signs</td>
<td>125’</td>
</tr>
</tbody>
</table>

Table 4.4.a

In addition, roadside signs warning motorists of pedestrian and bicycle crossings should be placed adequately to insure the safety of the trail users. Below are examples of these roadside signs (Figure 4.4.c.)

Roadside Signs

Figure 4.4.c

Pedestrian Crossing

- Size: 16” square
- Color: black image & outline on a yellow background
- Location: 150’ before at grade crossings

Bicycle Crossing

- Size: 16” square
- Color: black image & outline on a yellow background
- Location: 150’ before at grade crossings
4.5 Stop Sign Warnings

Stop sign locations that are unable to comply to the required sight distance (Table 4.4.a) require an indicator to caution the trail user. Where asphalt and concrete is used as the trail surface material, the phrase “Stop Ahead” shall be painted on the trail surface as shown in (Figure 4.5.a.), 200'-0" before the stop sign. All letter strokes shall be painted at a 3" width using standard paint for asphalt or concrete roads. Where limestone screening is used as the surface material, the “Stop Ahead” sign shall be posted as an alternative means of cautioning the user of the upcoming stop sign (Figure 4.5.b.).

Stop Ahead
Size: 16" square
Color: black and red image with a black outline on a yellow background. Location: 200' before a stop sign.

Figure 4.5.b

Pavement Marking Detail

Figure 4.5.a
5.1 Benches
Seating along the trail encourages a variety of users by offering points of rest. When locating benches, it is important to consider the amount of shade, the quality of views from the bench, and seasonal breezes.

The minimum quantity of benches provided shall be based on one bench for every ¼ linear mile of trail. To avoid being a hazardous obstacle, the bench shall be located 5'-0" to 10'-0" from the path. Typically, areas around benches are subject to standing water, so it is necessary to provide a concrete pad that extends at least 2'-0" beyond the perimeter of the bench. The concrete slab must also be sloped at 1% to 2% to insure proper surface drainage. A 4" layer of concrete or asphalt with a 6" subbase compacted to 95% shall be laid from the concrete slab to the trail providing a suitable surface for users to access the benches (Figure 5.1.a).

When selecting a bench for the trail, considerations should be made to the comfort, life-cycle costs, durability, and simplicity of form and detail. Figure 5.1.b portrays the style envisioned for this trail.

![Bench Layout Plan](image1)

Figure 5.1.a

![Bench Detail](image2)

Figure 5.1.b
5.2 Irrigation

Irrigation is not required in the trail system’s corridor. If a developer desires to install an irrigation system within the corridor adjacent to their development, the following standards must be kept to protect the trail system.

- Spray heads shall be positioned in a manner that minimizes the possibility of over-spray coming into contact with the trail avoiding hazardous conditions for the bicyclist.
- Any irrigation equipment, excluding “pop-up” spray heads, that would be regarded as a hazardous obstruction in the defined area described in Section 2.6 is prohibited.

5.3 Bollards

In areas that are repeatedly vandalized by motorized vehicles, the city may deem it necessary to locate bollards at each end of the trail segment where it intersects the street. All three elements shall be placed 10'-0" perpendicular from the back of curb when no sidewalk is present, or 1'-0" beside the sidewalk when it is present (Figure 5.3.a). CCA treated posts shall be placed on each edge of the trail as per City standard detail. A steel bollard provided by the City shall be located directly in the center of the trail (Figure 5.3.b).
6.1 Plant Palette

A selected list of trees and shrubs produces a cohesive image to the trail system’s landscape. Listed below is the plant palette for the Manhattan Linear Park Trail System with required planting size and spacing.

<table>
<thead>
<tr>
<th>Shade Trees</th>
<th>Scientific Name</th>
<th>Caliper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Name</td>
<td>Scientific Name</td>
<td></td>
</tr>
<tr>
<td>River Birch</td>
<td>Betula nigra</td>
<td>1.5”</td>
</tr>
<tr>
<td>Lindens</td>
<td>Tilia americana or cordata</td>
<td>1.5”</td>
</tr>
<tr>
<td>Marshall’s Seedless Green Ash</td>
<td>Fraxinus pennsylvanica</td>
<td>1.5”</td>
</tr>
<tr>
<td>Autumn Purple White Ash</td>
<td>Fraxinus americana</td>
<td>1.5”</td>
</tr>
<tr>
<td>Lacebark Elm</td>
<td>Ulmus parvifolia</td>
<td>1.5”</td>
</tr>
<tr>
<td>Red Oak</td>
<td>Quercus rubra</td>
<td>1.5”</td>
</tr>
<tr>
<td>Thornless Honey Locust</td>
<td>Gleditsia triacanthos var. inermis</td>
<td>1.5”</td>
</tr>
<tr>
<td>Sugar Maple</td>
<td>Acer saccharum</td>
<td>1.5”</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Evergreen Trees</th>
<th>Hgt. ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Name</td>
<td>Scientific Name</td>
</tr>
<tr>
<td>Scotch Pine</td>
<td>Pinus sylvestris</td>
</tr>
<tr>
<td>Eastern Red Cedar</td>
<td>Juniperus virginiana</td>
</tr>
<tr>
<td>Colorado Spruce (Green)</td>
<td>Picea pungens (Green)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ornamental Trees</th>
<th>Caliper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Name</td>
<td>Scientific Name</td>
</tr>
<tr>
<td>Eastern Red Bud</td>
<td>Cercis canadensis</td>
</tr>
<tr>
<td>White Bud</td>
<td>Cercis canadensis var. alba</td>
</tr>
<tr>
<td>Spring Snow Crabapple</td>
<td>Malus x. ‘Spring Snow’</td>
</tr>
<tr>
<td>Thornless Cockspur</td>
<td>Crataegus crus-galli var. mermis</td>
</tr>
<tr>
<td>Hawthorn</td>
<td></td>
</tr>
</tbody>
</table>

* Alternate species may be allowed upon review by the City.

Table 6.1.a

6.2 Plant Quantities

A consistent density of the various types of plant material is also important in producing a cohesive image for the trail landscape. To uphold this density, a minimum quantity of each type is required for every 100 linear feet of the trail.

<table>
<thead>
<tr>
<th>Plant Type</th>
<th>Min. Quantity per 100 ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shade</td>
<td>2</td>
</tr>
<tr>
<td>Evergreen or Ornamental</td>
<td>2</td>
</tr>
</tbody>
</table>

Table 6.2.a

6.3 Planting Pattern

In order for the Manhattan Linear Park Trail System to convey a natural appearance, it is important that the plantings are located in a natural pattern. Trees naturally form plant groupings in irregular patterns that greatly differ from traditional formal street planting patterns. On the following page there are three examples of irregular planting patterns using the required plant quantities (Figure 6.3.a,b,c). Adjacent Linear Park segments shall have varying planting arrangements, similar to the concepts shown.
Planting Plan A - Approx. 200 Linear Feet
*Figure 6.3.a*

Planting Plan B - Approx. 200 Linear Feet
*Figure 6.3.b*

Planting Plan C - Approx. 200 Linear Feet
*Figure 6.3.c*
6.4 Seeding and Sodding

For aesthetic reasons and to prevent excessive erosion, it is necessary to either sod or seed all areas within the trail corridor to establish a dense, healthy turf groundcover. For areas to be seeded, a tall fescue turf type shall be applied at 8 pounds per 1000 square feet. A tall fescue composed of a maximum of 20% bluegrass shall be used for sodded areas. Other forms of groundcovers are acceptable but should be planted or seeded in sufficient quantities to establish complete cover at the end of one year of growth.

6.5 Inspection and Installation

The quality of plant material shall meet the standards set out by the American Standard for Nursery Stock (ANSI Z60.1). In addition, a one year guarantee is required on all vegetation planted in the trail system R.O.W. Installation of the plant material shall follow industry standards that are illustrated in these figures (Figure 6.5.a, b).

Deciduous Tree Detail

Evergreen Tree Detail

Figure 6.5.a

Figure 6.5. b
7.0 Maintenance Requirements

Periodic maintenance of the Linear Park shall ensure a safe trail surface condition. Repairs shall include but not be limited to restoring eroded areas within the Linear Park R.O.W. and maintaining a clearance of 5'-0" beyond the outside of the trail and 8'-0" above the trail surface from limbs and other obstacles.
8.0 Metric Conversion Factors

To assist with the future implementation of the Linear Trail implementation, and in the anticipation of the adoption of a metric standard of measurement, the following conversion factors are provided:

<table>
<thead>
<tr>
<th>English to Metric Conversion</th>
<th>Metric to English Conversion</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>English Units</strong></td>
<td><strong>Metric Units</strong></td>
</tr>
<tr>
<td>1 inch</td>
<td>2.54 cm</td>
</tr>
<tr>
<td>1 foot</td>
<td>30.48 cm</td>
</tr>
<tr>
<td>1 mile</td>
<td>1609.344 m</td>
</tr>
</tbody>
</table>
FINAL DESIGN REPORT

MANHATTAN LINEAR PARK PHASE II
MASTER PLAN

prepared for the City of Manhattan, Kansas

by
Thesis Doolittle Associates
January 1998
ACKNOWLEDGEMENTS

A Special Thanks to the Citizens of Manhattan for their contributions to this Master Plan

MANHATTAN CITY COMMISSION
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Steve Hall, Mayor Pro-Tem
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Karen McCullough
Ed Klimken

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Ray Weisenburger
Carol Peak
Brad Fenwick

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Terry DeWeese, Director of Parks and Recreation
Richard Allen, Park Planner
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Ron Fehr, Assistant City Manager
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# MANHATTAN LINEAR PARK PHASE II
MASTER PLAN FINAL REPORT

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EXECUTIVE SUMMARY

LINEAR PARK PHASE II
MASTER PLAN FINAL REPORT

The primary goal of the master planning process for Phase II of the Manhattan Linear Park was to determine an alignment that would allow completion of the City’s Linear Park system begun in 1986 by the City of Manhattan. The southerly first phase of the Linear Park is complete and extends from Anneberg Park on the west side of Manhattan to Casement Road on the east side of Manhattan. This first phase of the Linear Park system is 9.0 miles in length. The second phase of the system was foreseen as having an alignment through the northern areas of the City connecting the two ends of the Phase I segment. The second phase would complete a continuous loop around Manhattan, providing recreational opportunities to all parts of the City while serving as a connection between parks, natural resource areas, schools, residential areas, and the City-wide bicycle route system.

Theis Doolittle Associates was selected by the City of Manhattan to assist the City with the master planning process. This process included on-site visits with design team members and the parks and recreation staff, public meetings to determine desired facilities and qualities, and review meetings with the Parks and Recreation Advisory Board, the Manhattan Urban Area Planning Board, and the City Commission. Some of the issues discussed in the various input and review meetings included developing “neighborhood loops” to facilitate short-trip uses of the Linear Park system, as well as the importance of connecting to school sites, commercial areas, and places of special interest within and around the City. Providing access to a variety of natural environments such as riparian or river’s edge habitat, woodland areas, and native prairie environments, and experiencing significant viewsheds of the City and surrounding Flint Hills were noted as being particularly important to the success of the Phase II alignment.

One Primary Linear Park Route and several Secondary Linear Park Routes were recommended for the Final Master Plan.

The recommended alignment for the Primary Route of the second phase of the Linear Park system begins at a point on the existing Phase I levee trail immediately south of the future Northeast Community Park. From this point the Phase II alignment proceeds in a northerly direction through the park site where the amenities within the park can benefit the trail users. From the park, the route crosses Knox Road on its way to the southern edge of the Blue River channel. The alignment then turns in a northwesterly direction along the edge of the Blue River until intersecting with a drainage channel entering from the west. This area of the Linear Park along the Blue River provides an outstanding opportunity to experience riparian habitat and the simple majesty of the towering cottonwood trees along its banks. Development of a river access point will enhance this opportunity.

The trail follows this drainage channel to the west until connecting with a gas line easement which it follows northwesterly until coming to Casement Road. The alignment goes under Casement Road at an existing drainage channel box culvert and then follows the southern edge of this drainage channel to Eisenhower Middle School and on to Tuttle Creek Boulevard. This section of the Linear Park provides connections to existing and future residential areas, as well as future commercial areas indicated on the Land Use Plan.
The Linear Park crosses under Tuttle Creek Boulevard utilizing an existing box culvert and then proceeds west along the northern edge of Marlatt Avenue, bounded on both sides by Kansas State University agricultural fields. This segment of the park is characterized by strong connections to the qualities and visual interests of agricultural lands as well as the open space feel of the Kansas and Blue River valleys. Views of the Flint Hills to the north and east add a strong visual background to these university fields.

The Alignment turns to the north for a short distance along College Avenue and then turns again to a northwesterly direction, following a large draw through the Flint Hills which frame the north edge of Manhattan. The alignment follows this draw until it intersects with Seth Child Road. After crossing Seth Child Road utilizing a new underpass culvert, the Linear Park alignment enters Marlatt Park and the Top of the World area. Some of the most dramatic views of the Flint Hills and the City of Manhattan will be experienced in this portion of the trail. Also, stands of cedars and hardwoods in the draws with hilltops of prairie grasses create a unique feel for this segment of the Linear Park.

The route turns to the southwest and exits Marlatt Park at its southwest corner, then proceeds south until connecting with the existing Hudson Trail. The alignment turns toward the west near the central portion of the Hudson Trail and follows along the edge of the proposed Colbert Hills development until intersecting with Little Kitten Creek. The park alignment then turns south along Little Kitten Creek to Kimball Avenue, which it follows west to an intersection with the future North Scenic Drive. This Linear Park segment provides many connections to the residential neighborhoods of Manhattan.

From this point the trail turns to the south along the west edge of Scenic Drive to Anderson Avenue, goes through a new culvert under Anderson Avenue, and continues south across Wildcat Creek Road to Wildcat Creek. At Wildcat Creek the trail goes under the Scenic Drive bridge, then heads east to Anneberg Park along the north edge of Wildcat Creek. The Linear Park loop is completed at the west edge of Anneberg Park where the Phase II trail connects to the western end of the Phase I segment. This last segment of the Phase II alignment provides an opportunity to experience a riparian habitat on a different order than was seen along the Blue River segment. Hardwood trees are prominent in this area.

The Secondary Routes include segments along the Blue River and through the Northview area in the northeast portion of the city. The Blue River segment is shown with a future extension to Tuttle Creek Reservoir. In the northwest and west portions of the City, segments are recommended through the Seth Child Road and Anthony Middle School area, from the Top of the World north to Tuttle Creek Reservoir, through the Colbert Hills development, and within the residential area east of Scenic Drive.

Phase II of the Linear Park provides valuable connections to a variety of natural areas, recreation facilities, residential areas and cultural assets within the Manhattan community. It provides ease of access and recreational opportunities to all areas of Manhattan and becomes the “wheel” of Manhattan’s bicycle and pedestrian transportation system, tied to the interior routes or “spokes” defined in the University/City Bicycle Master Plan.

The Primary Linear Park route Probable Project Costs are estimated to be in the range of $4.5 to 5.5 million. The Secondary Linear Park routes Probable Project Costs (which cover all secondary routes indicated on the Master Plan) are estimated to be in the range of $3.6 to 4.5 million. These Probable Cost figures contain all elements related to the implementation of the Linear Park including demolition, earthwork, drainage and erosion control, trail surfacing, trailhead improvements, seeding, landscape plantings, culvert and bridge crossings, site furnishings, signage, land acquisition, and final design and construction document preparation fees.
CHAPTER 1

INTRODUCTION

LINEAR PARK PHASE II
MASTER PLAN FINAL REPORT

Background

In 1986, the citizens of Manhattan passed a Quality of Life Bond Issue to initiate implementation of the first phase of the Manhattan Linear Park Trail System. The Manhattan Parks and Recreation Department (MPRD) completed construction on this 9-mile first phase of the Linear Park System in 1996. The Linear Park was designed to serve the recreational needs of the citizens of Manhattan. As a dedicated trail system, the park offers the safe and properly surfaced facilities to accommodate a variety of active and passive recreational uses. Its routing through neighborhoods, other parks, and undeveloped areas provides users with a means to experience nature, enjoy picturesque views, and to tour the City of Manhattan. Because of its linear arrangement, the park further serves to provide a linkage to major features and neighborhoods within the city. The trail has been a resounding success for walking, jogging, and bicycling from its inception.

In May of 1997, a motion was approved by the City of Manhattan, Kansas Park and Recreation Department (MPRD) to enlist the services of a professional planning and design firm to prepare the Master Plan for the second phase of the Manhattan Linear Park. The goal of the Master Plan is to guide development for the second half of the Linear Park system which will connect the east and west ends of Phase I via a generally northern route, forming a complete Linear Park loop.

Thesis Doolittle Associates was commissioned to prepare Phase II of the Master Plan in May of 1997. The Phase II Master Plan Final Report documents the findings and final recommendations for the routing, trail design, estimated costs, and feasibility of land acquisition needed for the Park extension. Phase II of the Master Plan serves to identify the goals and priorities to be further developed in the Final Design and Implementation Phases. A related document entitled “Manhattan Linear Park Implementation Guidelines” was prepared during the course of the master planning process to define the design criteria and level of expectation for specific elements of the Linear Park.

The MPRD assigned Richard Allen, Park Planner, to be available to meet regularly with the consultants and to monitor the planning effort. In addition, a larger committee composed of various City of Manhattan representatives met at specific milestones of the project to review and approve recommendations.

Project Scope

The second phase of the Manhattan Linear Park Trail System will commence in the vicinity of the east terminus of Phase I at Casement Road on the northeast side of Manhattan, and form a north loop that ultimately connects to Anneberg Park.
The goals of the Phase II Master Plan include the following:

- Develop an alignment which has the acceptance and support of the City Commission as well as the public.
- Identify the optimum route which links the community to natural resources, picturesque viewsheds, residential areas, and cultural assets such as schools and parks.
- Provide a recreation resource which serves all parts of the Manhattan area.
- Enhance City-wide transportation goals for bicyclists and pedestrians.
- Provide an estimation of the capital expenditure necessary to complete the project that is inclusive of land acquisition costs.
- Recommend a phasing strategy which will provide the City with a logical progression of Linear Park segments leading toward complete implementation of the Master Plan.
- Incorporate the existing Hudson Trail and Seth Child Road Underpass trail segments.

In order to adequately plan for the trail extension, and to meet the goals established above, the consultants proposed a project scope that included three work phases: 1) Needs Assessment and Site Analysis, 2) Recommendations for future trail design, routing, and implementation phasing and 3) Recommendations for Right-of-Way acquisition. The following chapters of this report document the findings and recommendations with respect to the Phase II development for the Manhattan Linear Park System.
CHAPTER 2

NEEDS ASSESSMENT AND SITE ANALYSIS

LINEAR PARK PHASE II
MASTER PLAN FINAL REPORT

Introduction

The Needs Assessment and Site Analysis of the Manhattan Linear Park Phase II Master Plan consisted of four research methods: Survey of Existing Conditions, Site Analysis of the Phase II Project Area, Public Input Meetings, and Additional Research and Interviews.

Survey of Existing Conditions

In order to better understand the project goals, Richard Allen led the consultants on a bicycle tour of the existing Linear Park segments and the north half of the City of Manhattan, Kansas. The purpose of the trip was to acquaint the planning team with the routing and overall design of the existing trail and to survey the project area to be incorporated within the second phase of the Linear Park.

The existing Manhattan Linear Park Trail System consists of a nine mile stretch beginning at Anneberg Park and terminating at Casement Road. The existing trail links major facilities and points of interest such as: Anneberg Sports Complex, Wildcat Creek, Westloop shopping area, the Zoo Trail, the riparian corridors of the Kansas and Blue Rivers, the Central Business District and Manhattan Town Center, and the future Northeast Community Park.

The trail is composed of a variety of materials depending on the terrain, including concrete on a stretch of the trail within the Wildcat Creek floodplain and limestone screenings on the levee and abandoned railroad right-of-way segments. The terrain for Phase I is relatively flat, particularly the segments which utilize the levee system and the abandoned railroad right-of-way. Two low water bridges serve the Phase I trail segment. Several access points and trailhead facilities with signage and benches are located along the Phase I alignment.

Site Analysis of the Phase II Project Area

During the bicycle tour at the start-up of the project, Richard Allen led the group through a tour of the northern portions of Manhattan. At this time, he also identified possible facilities or features to be incorporated along the new trail, as well as some of the opportunities and constraints of potential routings.

The northern portion of Manhattan includes a variety of natural resource areas and community facilities including the Blue River with stands of massive cottonwoods along its banks, the Flint Hills with dramatic views from its highpoints and clusters of red cedars and hardwoods in the draws. One of these Flint Hills high points in Marlatt Park, known as Top of the World, offers panoramic views of the surrounding Flint Hills and Manhattan which sets in the Kansas River valley. Little Kitten Creek and Wildcat Creek flow through the western portion of the city. From the Blue River west to the Browning Avenue area the city is relatively flat, while the area west of Browning Avenue becomes increasingly hilly as it rises into the Flint Hills.
The cultural elements of the northern regions of Manhattan include Eisenhower and Susan B. Anthony Middle School, Northview and Bergman Elementary Schools, Northview Park, the new ballfields at Eisenhower Middle School, Hudson Trail, and the Kansas State University agricultural research lands.

**Public Input Meetings**

After conducting the existing facilities surveys, the consulting team held two public meetings at the Manhattan Fire Department Meeting Room. The meetings were open to all members of the community, and its time, place, and agenda were advertised in the local newspaper. The meetings provided a public forum for members of the community to discuss the needs and issues surrounding the Manhattan Linear Park and express their comments regarding its expansion.

The information obtained at both public meetings provided the consulting team with valuable input regarding the project's ultimate direction.

The following information describes the format of the meetings, and the information obtained from the participants. Meeting Minutes and Attendance sheets are included in the Appendix of this report.

**Meeting Format and Objectives**

The Public Meetings were designed to allow residents of the City of Manhattan the means to voice their input on issues relevant to the existing and future expansion of the Manhattan Linear Park Trail System. Those who attended the meetings were offered a general overview of the project including a summary of the existing trail in order to provide a sound basis of knowledge regarding development opportunities and constraints. The participants were then given the opportunity to offer their comments regarding several trail issues. Responses and comments were recorded, word for word, on large tablets.

**Summary of Comments**

The consultants provided a listing of major trail elements and the responses offered by the participants are summarized below:

**Surfacing**

The public responded that pavement (as opposed to limestone screenings) is desired, and further that concrete (as opposed to asphalt) is desired, however the final selection should be done in consideration of the project budget. Though limestone screenings are considered a good trail surface, the maintenance required is far greater than that of other hard paved surfaces. The public concern that asphalt, while considered a hard pavement, absorbs heat on summer days and is not comfortable for users accompanied by their pets.

Concerns relating to water drainage and creek crossings were also discussed here. These issues include the request that the surface of the trails (and the grading of the trails) be done in such a way as to eliminate ponding, and that low water crossings are too often impassable. In lieu of low water crossings, participants offered the idea of incorporating wooden bridges where necessary.
Amenities

Those in attendance mentioned access to drinking water at regular increments along the trail as a desirable element of the Phase II Trail System. The inclusion of trash receptacles along the alignment was also desired. In addition trail signage was noted as an important element to be considered. Regulatory signage regarding trail rules and regulations (bikes pass on left, bikes yield to walkers, sound horn when approaching, no motorized vehicles on trail) should be included in the plan. In addition, interpretive signage noting historical and cultural features along the trail alignment should also be included.

Safety

The provision for emergency vehicle access was noted as in important consideration in the design of the Phase II Trail system. It was recommended by some of the individuals in attendance that emergency phones be provided at regular intervals along the trail for use if required; perhaps the phones could be included at locations where benches and trash receptacles are located.

Trail Alignment

Overall there where numerous comments given for the location of the Phase II Trail. The trail should be located to take advantage of existing physical features throughout the area including views, interesting topographic features, cultural and historical elements. Whenever possible, the trail should take advantage of existing easements to lessen the overall costs of construction. The alignment should remove itself from major highways as much as possible to allow the user a buffer from the noise and visual intrusion of the roadways. Consideration should also be given to connections to other facilities such as the Zoo, new park sites and existing and planned school facilities. Also the alignment should consider the recommendations put forth in the City/University Bicycle Plan in order to provide as cohesive a system as possible.

Acknowledgments

According to the sign-in sheets, the following people attended the Public Workshops in addition to MPRD staff and consultants: N. Parker, Jim Coleman, Peggy Coleman, Eugene Laughlin, Verlyn Richards, Elaine Mohr, Dann Fisher, Linda Glasgow, Sadie Browning, Mike Penrod, Charlie Potorff, L. Pearson, Dave Manning, Steve Pfister, Marg Pfister, Nancy Boisen, David Colburn, and Doug Demonbrun.

Additional Research and Interviews

Because of the broad range of needs and facilities discussed during both Committee Meetings and Public Meetings, the consulting team conducted interviews with other City representatives, and community members.

Ron Fehr - Assistant City Manager
Mark Taussig - KSU Facilities Planning Department
Jerry Petty - Director of Public Works, City of Manhattan
Jim McCullough - General Contractor and Developer and Land Owner
Dan Kershaw - Land Owner
CHAPTER 3

LINEAR PARK ROUTING RECOMMENDATIONS

LINEAR PARK PHASE II
MASTER PLAN FINAL REPORT

Introduction

The primary goal of the master planning process for Phase II of the Manhattan Linear Park was to determine an alignment that would allow completion of the City's Linear Park system begun in 1986 by the City of Manhattan. As well, the goal of providing a true recreation facility in addition to the functional aspects of a pedestrian and bicycle route was deemed important from the beginning of the planning process.

The first phase of the Linear Park is complete and extends from Anneberg Park on the west side of Manhattan to Casement Road on the east side of Manhattan. This first phase of the Linear Park system is 9.0 miles in length. The second phase of the system was foreseen as having an alignment through the northern areas of the City connecting the two ends of the Phase I segment. The second phase, while approximately doubling the length of the Linear Park, would complete a continuous loop around Manhattan, providing recreational opportunities to all parts of the City while also serving as a connection between parks, natural resource areas, schools, and residential areas, as well as to the City-wide bicycle route system.

Theis Doolittle Associates was selected by the City of Manhattan to assist the City with the master planning process. This process included on-site visits with the design team members and the parks and recreation staff, public meetings to determine desired facilities and qualities, and review meetings with the Parks and Recreation Advisory Board, the Manhattan Urban Area Planning Board and the City Commission. Some of the issues discussed in the various input and review meetings included developing "neighborhood loops" to facilitate short-trip uses of the Linear Park system, as well as the importance of connecting to school sites, commercial areas, and places of special interest within and around the City. Providing access to a variety of natural environments such as riparian or river's edge habitat, woodland areas, and open prairie environments, and experiencing significant viewsheds of the City and surrounding Flint Hills were noted as being particularly important in the success of the Phase II alignment.

One Primary Linear Park Route and several Secondary Linear Park Routes were recommended for the Final Master Plan. The Primary Route provides the recommended alignment for completion of the Linear Park loop, while the Secondary Routes provide critical neighborhood loops and connections to important community areas and assets. These alignments are described on the following pages and support the Master Plan map which follows on page 13 of this report.
**Primary Linear Park Alignment**

The recommended final alignment for the 8.5 mile Primary Route of the second phase of the Linear Park system begins at a point on the existing Phase I levee trail immediately south of the future Northeast Community Park. From this point the Phase II alignment proceeds in a northerly direction through the future park site where the amenities within the park can benefit the trail users. From the park, the route crosses Knox Road on its way to the southern edge of the Blue River channel. The alignment then turns in a northwesterly direction along the edge of the Blue River until intersecting with a drainage channel entering from the west. This segment of the Linear Park along the Blue River provides an outstanding opportunity to experience riparian habitat and the simple majesty of the towering cottonwood trees along the river’s banks. Development of a formal river access point at an existing unimproved ramp located on the west bank will enhance this access opportunity.

The trail follows this drainage channel to the west until connecting with a gas line easement which it follows northwesterly until coming to Casement Road. The alignment goes under Casement Road at an existing drainage channel box culvert and then follows the southern edge of this drainage channel to Eisenhower Middle School and on to Tuttle Creek Boulevard. This section of the Linear Park from the Blue River to Tuttle Creek Boulevard provides numerous opportunities for connections to existing and future residential areas, as well as future commercial areas indicated on the City’s current Land Use Plan.

The Linear Park crosses under Tuttle Creek Boulevard utilizing an existing box culvert and then proceeds west along the northern edge of Marlatt Avenue, bounded on both sides by Kansas State University agricultural fields. This segment of the park is characterized by strong connections to the qualities and visual interests of agricultural lands as well as the open space feel of the Kansas and Blue River valleys. Views of the Flint Hills to the north and east add a strong visual background to these university fields.

The Alignment turns to the north for a short distance along College Avenue and then turns again to a northwesterly direction, following a large draw through the Flint Hills which frame the north edge of Manhattan. The alignment follows this draw until it intersects with Seth Child Road. After crossing Seth Child Road through a new underpass culvert, the Linear Park alignment enters Marlatt Park and the Top of the World area. Some of the most dramatic views of the Flint Hills and the City of Manhattan will be experienced in this portion of the trail. Also, the stands of cedars and hardwoods in the draws with hilltops of prairie grasses create a unique feel for this segment of the Linear Park.

The route turns to the southwest and exits Marlatt Park at its southwest corner, then proceeds south until connecting with the existing Hudson Trail. The alignment turns toward the west near the central portion of the Hudson Trail and follows along the edge of the proposed Colbert Hills development until intersecting with Little Kitten Creek. The park alignment then turns south along Little Kitten Creek to Kimball Avenue, which it follows west to an intersection with the future North Scenic Drive. This Linear Park segment in the northwest portion of the City, again, provides numerous opportunities for connections to the residential neighborhoods of Manhattan.

From this point the trail turns to the south along the west edge of Scenic Drive to Anderson Avenue, goes through a new culvert under Anderson Avenue, and continues south across Wildcat Creek Road to the north edge of Wildcat Creek. At Wildcat Creek the trail goes under the Scenic Drive bridge, then heads east to Anneberg Park along the north edge of Wildcat Creek. The Linear Park loop is completed at the west edge of Anneberg Park where the Phase II trail connects to the western end of the Phase I Linear Park segment.
This segment of the Park provides good views of the Flint Hills to the southwest of Manhattan and an opportunity to experience a riparian habitat on a different order than is seen along the Blue River segment. The Scenic Drive segment from Kimball Avenue to Anderson Avenue is characterized by the long, relatively steep slopes of a Flint Hills draw, while hardwood trees are prominent in the flat lowlands along the Wildcat Creek segment.

The alignment of the Primary Route of Phase II of the Linear Park provides valuable connections to a variety of natural areas, recreation facilities, residential areas and cultural assets within the Manhattan community. It provides ease of access and recreational opportunities to all areas of Manhattan and becomes the “wheel” of Manhattan’s bicycle and pedestrian transportation system, tied to the “spokes”, or interior routes, previously defined in the University/City Bicycle Master Plan.

**Secondary or Neighborhood Linear Park Alignments**

The planning process identified the following alignments for additional trail segments to enhance the Linear Park System’s connections to community resources, natural areas, and the residential neighborhoods of Manhattan.

**Northview Area Segment**

This 2.5 mile segment begins at Casement Road at the east end of Phase I of the Linear Park. It follows Casement Road to the north until reaching Northview School and Northview Park. From the school the alignment makes use of the existing pedestrian access easement that goes to the west from the School, terminating at Butterfield Road. This pedestrian access easement currently has a sidewalk which is recommended to be upgraded to the standards of the Linear Park as set forth in the Manhattan Linear Park Implementation Guidelines. The alignment continues north along Butterfield Drive to Eisenhower Middle School, where it connects to the Primary Linear Park Route along the north edge of the school and new City ballfields site.

This segment provides safe and convenient access to the Northview school and park area, Eisenhower School and the City ballfields, and provides a close-in alternative for recreational opportunities for residents of this neighborhood.

**North Blue River Segment**

This segment, 2.5 miles in length, begins where the Primary Linear Park Route leaves the edge of the Blue River and redirects to the west. This secondary segment continues from this point to the north along the west edge of the Blue River. It continues on this alignment for slightly more than one mile until reaching a drainage channel that empties into the Blue River. The Linear Park then turns to the southwest for about one mile along the drainage channel before turning south to the Eisenhower Middle School site. This segment, like the Northview segment, reconnects to the Primary Park Route at Eisenhower Middle School.

The North Blue River segment provides an extended opportunity to experience the river’s edge with its towering cottonwoods and other hardwood trees. Because the area north of the Eisenhower school site is not yet developed, a valuable opportunity exists to carefully integrate the Linear Park into the structure and functioning of the future neighborhoods.

An opportunity exists to add to this secondary segment by extending it north along the Blue River until it reaches the Tuttle Creek Reservoir area. This extension would add a very valuable link between the City and the numerous recreational opportunities afforded by Tuttle Creek Reservoir.
Seth Child-Browning Segment

This 2.25 mile segment begins at the intersection of Marlatt Avenue and College Avenue where the primary park route turns to the north. From this point, this secondary segment proceeds to the west along the south edge of Marlatt Avenue. At Browning Avenue, the route turns south along the west side of the street to Susan B. Anthony Middle School. At the southern edge of the school site, the trail turns west, going through the school property and into the residential development west of the school. The segment passes under Seth Child Road by means of a concrete box culvert constructed for the Linear Park during recent improvements to the road. After reaching the west edge of the Seth Child Road right-of-way, the alignment turns south to the commercial area at Gary Avenue and Seth Child Road. At the north edge of this commercial area, the alignment redirects to the west to Candlewood Drive, proceeds north along Candlewood Drive to Churchill Street, then west past Bergman Elementary School to the north end of the existing Hudson Trail. At this point, the secondary segment reconnects to the Primary Linear Park Route.

The Seth Child-Browning segment provides an important pedestrian and bicycle connection between Susan B. Anthony Middle School, Bergman Elementary School, a commercial area, and the surrounding residential areas. Also, as is the case with all of the secondary segments on the Master plan, this segment creates an opportunity for variety in the cycling, jogging, and walking routes of the Linear Park users.

Colbert Hills Segment

This 3.25 mile secondary segment begins at Marlatt Park where it branches from the Primary Route and runs west and then south through the future Colbert Hills residential and golf course development area. This Linear Park alignment crosses over North Scenic Drive at the golf cart crossing between the proposed eighth and ninth holes, continues south along the west side of Scenic Drive, enters the proposed green space at the southern end of the Colbert Hills development area, and then rejoins the Primary Route just south of the future intersection of Kimball Avenue and Scenic Drive. In addition to the main alignment of this segment, a 0.75 mile connector segment, which connects to the Primary Route at Little Kitten Creek, is located along the street which serves the proposed golf course club house, commercial area, and hotel.

This segment provides a vital connection to the proposed residential and recreational opportunities anticipated within the Colbert Hills development area. Also, this segment will provide good views of the Flint Hills surrounding Manhattan.

Marlatt Park to Tuttle Creek Reservoir Segment

This segment commences from the Primary Linear Park Route at Marlatt Park. It extends north to the Top of the World and on to the Tuttle Creek Reservoir area. The alignment of this segment north of Marlatt Park is not determined as a part of this Master Plan, but several options exist, including following Seth Child Road to its intersection with Tuttle Creek Boulevard or crossing to the east side of Seth Child Road and winding through the Flint Hills in a northeasterly direction.

This segment, as with the segment to Tuttle Creek Reservoir along the Blue River, would create a valuable link between the western portion of the City and the numerous recreational opportunities afforded by Tuttle Creek Reservoir.
Wyndham Heights segment

This secondary segment, 1.0 mile in length, begins near the proposed intersection of Kimball and Scenic Drive, crosses under Kimball Avenue via a culvert and proceeds south through a possible new park location and the Wyndham Heights subdivision area, eventually connecting to the Primary Route at the north side of Anneberg Park.

This segment creates a strong connection to the Primary Linear Park Route for the residential area on the east side of Scenic Drive. It also connects Anneberg Park in a stronger fashion to the nearby neighborhoods.

Trailheads

Ten locations along the Primary and Secondary Linear Park Routes have been designated as Trailheads for the Phase II segments. The trailheads serve as formal entries to the Linear Park system and provide information and accommodations to further the accessibility and user friendliness of the Linear Park. The basic elements of all trailhead locations are recommended to include the following:

- Parking Areas
- Benches
- Trash Receptacles
- Drinking Fountain
- Trail Map and Rules Sign

The following locations are recommended for development of trailheads. Some of these locations are noted as containing existing facilities which could be incorporated as a part of the trailheads.

1. South of Casement Road at the east end of the existing levee portion of the Linear Park. (Incorporate proposed facilities)
2. Within the future Northeast Community Park. (Incorporate proposed facilities)
3. Within Northview Park. (Incorporate existing facilities)
4. Intersection of Casement Road and the North Blue River secondary park segment.
5. Within the Eisenhower school and ballfield site. (Incorporate existing facilities)
6. Within Marlatt Park. (Incorporate existing facilities)
7. Within the Susan B. Anthony school site. (Incorporate existing facilities)
8. On the Hudson Trail section where the Primary Park Route turns west toward Little Kitten Creek.
9. Near the intersection of Scenic Drive and Kimball Avenue.
10. Within Anneberg Sports Complex. (Incorporate existing facilities)

Several of these locations already contain parking facilities or will contain them due to other scheduled improvements. These locations include the Casement Road/Levee Trail location, Northeast Community Park, Northview Park and School, Eisenhower Middle School, Marlatt Park, Anthony Middle School, and Anneberg Sports Complex.

New parking facilities, then, would be needed at the Casement Road/Blue River segment intersection, the Hudson Trail location, and the Scenic Drive/Kimball Avenue location.
Phasing Recommendations

The following phasing recommendations outline a general strategy for implementation of Phase II of the Linear Park. The recommendations are based on a desire to, first, complete the continuous loop system and, second, proceed with implementation in a manner which coincides with the expected development pattern for northeast and northwest Manhattan.

Phase One

The Seth Child-Browning segment and the Northview Area segment can utilize existing right-of-ways and structural elements such as the culvert under Seth Child Road and the pedestrian access easement by Northview School and Park. Due to these advantages it is recommended that the City proceed with these two segments in the first phase of Linear Park Phase II implementation. These segments will directly serve existing residential areas and create safe, convenient access routes to four school sites.

The Northview area segment will be a natural extension of the Levee trail terminus at Casement Road, and the Seth Child-Browning segment will connect to the existing Hudson Trail, creating a significant trail segment in the northwest portion of the City.

Phase Two

The focus of Phase Two is recommended to be the Primary Route of the Linear Park plan. The segment from Eisenhower Middle School to the intersection of Marlatt Avenue and College Avenue is an appropriate first priority for this second phase because it will connect the two secondary segments completed in the Phase One implementation.

Following Marlatt segment of the Primary Route, a general strategy of working from east to west is recommended to take advantage of the Northeast Community Park development and the Blue River corridor. These segments should not be hindered by residential development plans. As residential developments fill in areas adjacent to the Linear Park routes, appropriate connections can be made between the residential areas and the Park. An overriding rule regarding implementation of the Primary Route should be to concentrate on completing segments that are within or adjacent to new residential development, regardless of their location along the Linear Park. It will likely be easiest to obtain Linear Park right-of-way if it is defined during the development platting process.

Phase Three

The final Phase of implementation should work towards completion of the remaining secondary segments, including the North Blue River segment. The completion of the secondary segments will most likely be tied to the residential development patterns of the City.

The segments to Tuttle Creek Reservoir from the North Blue River segment and from Marlatt Park are recommended to be the last segments completed. This is due primarily to the more immediate benefits which are attributable to the Linear Park segments nearer the existing neighborhoods, schools, and parks. However, because a primary goal of this Master Plan has been to enhance the recreational value of the Linear Park and not develop it only as a transportation route, it is recommended that these connections to Tuttle Creek Reservoir be aggressively pursued during the implementation process. These segments are among the most valuable in terms of pure recreational value and access to natural open space areas.
TUTTLE CREEK BOULEVARD CROSSING
WARNING SIGNS REGARDING
HEAD CLEARANCES AND FLOOD
EVENTS SHOULD BE POSTED
BEFORE THE CULVERT
CROSSINGS

MIN. 20' STRAIGHT
TRAIL SEGMENT
BEFORE CULVERT (TYP.)

CONCRETE SURFACE
REQUIRED IN AREAS
SUBJECT TO FLOODING

ANDERSON AVENUE CROSSING
CHAPTER 5

Summary of the Relationship between the Linear Park Phase II alignment and the Kansas State University/City of Manhattan Bicycle Master Plan

LINEAR PARK PHASE II
MASTER PLAN FINAL REPORT

Introduction

One of the primary goals of the master planning process for the second phase of the Linear Park Master Plan was to create a recreational facility which could provide bicyclists, joggers, and walkers with a means to access natural resources areas, parks, schools, and other assets throughout the community. In more functional terms, another important benefit of the Linear Park is its ability to tie together the perimeter sections of the Bicycle Master Plan prepared for Kansas State University and the City of Manhattan. The Bicycle Master Plan aimed to identify the primary routes throughout the City for bicycle commuting and recommend implementation strategies to develop the proposed routes.

Throughout the development of the Linear Park Phase II alignment, careful consideration was given to identifying opportunities to mesh the Bicycle routes with the Linear Park routes. This effort has created a complete network of bicycle and pedestrian routes across the entirety of the Manhattan area.

Primary Intersections of the Linear Park Phase II alignment and the Bicycle Master Plan Routes

1. Hayes Drive at the Casement Road/Levee Trailhead location.
2. Griffith Drive at the Northview School and Park Trailhead location.
3. Casement Road at the primary Linear Park route crossing.
4. Denison Avenue at Marlatt Avenue on the primary route.
5. College Avenue at Marlatt Avenue on the primary route.
6. Browning Avenue at the Susan B. Anthony Middle School Trailhead location.
7. Kimball Avenue at the Hudson Trail segment.
8. Kimball Avenue at Little Kitten Creek on the primary Linear Park route.
9. Kimball Avenue at the Scenic Drive/Kimball Avenue Trailhead location.
10. Anderson Avenue at the primary Linear Park Route crossing, west of Scenic Drive.
11. Anderson Avenue at the Anneberg Sports Complex Trailhead.
CHAPTER 6

OPINION OF PROBABLE CONSTRUCTION COSTS

LINEAR PARK PHASE II
MASTER PLAN FINAL REPORT

Introduction

This section is divided into two separate probable costs summaries - one for the Primary Linear Park Route and one for the Secondary Linear Park Routes.

These construction costs area based on 1998 dollars. Due to the multi-year phasing of this project these costs should be adjusted annually to reflect inflation over time.

Property or right-of-way acquisition costs for the secondary route segments are based on averages taken from the Right-of-Way Acquisition Plan information provided in Chapter 4 for the primary route.

The costs for continuous lighting along the Linear Park are not included in the following summaries. Lighting for specific areas such as culvert crossings and trailhead areas has been included. It is recommended that the need for lighting along any segment of the Linear Park be addressed at the time of implementation. Certain areas such as school sites may warrant the provision of path lighting to ensure safety.

Summary of Construction Costs

Primary Linear Park Route

The Primary Linear Park route Probable Project costs are estimated to be in the range of $ 4.9 to 6.1 million, which allows a 10% contingency above and below the calculated construction cost as shown on the following pages.

Secondary (or Neighborhood) Linear Park Routes

The Secondary Linear Park routes Probable Project costs (which covers all secondary routes indicated on the Master Plan) are estimated to be in the range of $ 3.9 to 4.8 million, which allows a 10% contingency above and below the calculated construction cost as shown on the following pages. The cost for the secondary routes does not include the two Linear park segments which connect to the Tuttle Creek Reservoir area.
### Manhattan Linear Park Phase II

**City of Manhattan, Kansas**

**Opinion of Probable Project Costs for Primary Route Based on Final Master Plan**

**Theis Doolittle Associates**

1/22/98

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## MANHATTAN LINEAR PARK PHASE II
### CITY OF MANHATTAN, KANSAS

**OPINION OF PROBABLE PROJECT COSTS for SECONDARY ROUTES**
**BASED ON FINAL MASTER PLAN**

**THEIS DOOLITTLE ASSOCIATES**
1/22/98

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A kick-off meeting was held for the Linear Park Trail System Phase II on May 22nd, 1997. The project began with a tour by bike of both the existing trail as well as the general corridor of the Phase II project. Those individuals attending the tour were:

- Richard Allen, Park Planner, City of Manhattan
- Doug Pickert, Theis Doolittle Associates
- Paul Novick, Theis Doolittle Associates

During the tour, Richard made note of possible trail connections to existing facilities as well as proposed facilities. Richard also made note of possible crossings at culverts as well as other site specific items. Doug and Paul took photographs of the entire project area as well as existing facilities (entries, surface materials benches, etc.). The photos have since been placed on a base map of the project area to serve as a photo-log of the project corridor.

After the bike tour, Richard, Doug and Paul returned to the Manhattan Parks & Recreation office where Terry DeWeese, Director of Parks & Recreation and Jerry Dishman, Parks Superintendent, joined the meeting.

Richard turned over the materials requested by TDA for the project. Richard made the following notes concerning the materials provided and the study in general:

- Concentrate on our teams' suggestions/recommendations, not on past studies
- Topography is not available for the entire project area. USGS Maps are available should this information be required.
- There will be concerns over bridge crossings within the project.
- Make use of existing culverts as much as possible (Tuttle Creek Blvd., Kimball Ave., Seth Childs Road).

Richard noted a few of the details he would expect to be included in the recommendations:

- Trail Heads
- Mile Markers
- Major Crossings
- Typical Sections
- Connection to N.E. Community Park (Nixon Property)
- Trail width

Other details will be included as required.

Terry DeWeese noted that the following individuals should be contacted concerning their thoughts on the project:

- Ron Fehr - Assistant City Manager
- Mark Taussig - KSU Planning Department
- Jerry Petty - Director of Public Works, City of Manhattan
5) The group then scheduled the first public workshop for Thursday, May 29th @ 7:00 p.m., location to be determined.

The preceding minutes are my recollections of the events and discussions during the meeting. Please contact me immediately if there are any additions or corrections to these minutes.

Sincerely,

[Signature]

Paul J. Novick, ASLA

cc: Attendees
MANHATTAN LINEAR PARK TRAIL SYSTEM - PHASE II
Meeting notes for public meeting
May 29th, 1997, 7:00 p.m.,
Manhattan Fire Station Headquarters, 2000 Denison Ave., Manhattan, KS

Attending:
- Terry DeWeese, Director, City of Manhattan Parks & Recreation
- Richard Allen, Park Planner, City of Manhattan Parks & Recreation
- Lorie Doolittle Bowman, Theis Doolittle Associates
- Doug Pickert, Theis Doolittle Associates
- Paul Novick, Theis Doolittle Associates
- Brent Bowman, Brent Bowman & Associates
- Members of the public, see attached listing

The meeting was held to inform the public of the process the city will work through to develop the Phase II alignment, introduce the consultant team and seek the citizens input regarding the alignment.

The following items were discussed:

1) Terry DeWeese opened the meeting by welcoming those in attendance and introduced the City staff and design team members in attendance.

2) The meeting was then turned over to Richard Allen, Park Planner, City of Manhattan Parks & Recreation. Richard reviewed the history of the Linear Park System from 1983 to present day. Richard then reviewed the existing alignment (Phase I) with those in attendance making note of the existing crossings and other issues.

3) The meeting was then turned over to Doug Pickert, Project Manager for Theis Doolittle Associates. Doug reviewed the general project area for Phase II on a base map developed for the project. The general project area begins at Casement Road on the east side of Manhattan and proceeds north to the Marlatt Road area. The corridor then heads west to Browning Ave. and heads south to Susan B. Anthony Elementary School. From this point, the corridor then proceeds once again to the west to the existing Hudson Trail. From this point, the corridor heads south down the Hudson Trail to Kimball Ave. (Scenic Drive) on the west side of Manhattan to it's intersection with Anderson Ave. The final corridor area heads east along Anderson Ave. to Anneberg Park.

Doug then reviewed a number of critical areas along the corridor such as bridge crossings, drainage and pedestrian culverts. Doug noted that there are some obvious areas where the trail will cross such as the culverts, the areas in-between these "fixed" points will be refined by the study.

4) Doug then opened the floor for general questions from those in attendance. The questions were as follows:
- What is the box (culvert) at Seth Childs Road? 
  (Pedestrian access under the road.)
• Will the Hudson Trail be connected north?
  (Unsure at this point in the study.)
• Will the alignment be along Scenic Drive?
  (Unsure at this point in the study.)

5) Doug Pickert, Lorie Doolittle Bowman, and Paul Novick then began a discussion of particular elements of the trail. Those elements included:
• Surfacing
• Amenities
• Safety
• Trail Alignment.

The comments/responses given by those in attendance were as follows:

Surfacing
• Preferably concrete, but be considerate of budget
• Drainage important consideration (get water off trail)
• Alternate maintenance techniques for weed control
  - Saline solution
• Concern regarding asphalt temperature on hot days (Animals)
• Crushed limestone is good surface
• Low water crossing impassable too often (wooden bridges alternate consideration)
• Why concrete low water crossing? Budget
• Pave entire trail to accommodate roller blades.

Amenities
• Access to drinking water
• Signage: Overall Trail Etiquette
  - Bikes yield to walkers
  - Bikes one side - pedestrians other side
  - Sound horn when approaching
  - No motorized vehicles on trail.
• Trail width to accommodate large maintenance vehicles
• Do bridges really need to accommodate these vehicles?
• Trash receptacles at main entrances.
• Signage to feature historical elements (interpretive signs)

Safety
• Emergency vehicle access
  phone/bench/trash receptacle

Trail Alignment
• Take advantage of existing feasible crossing facilities (culverts, sidewalks, etc.)
• Sidewalks along Casement Road.
• Access (future) Nixon Park site
  -toilets, drinking fountains etc.
• Alignment from Nixon through Blue River
• Potential trail feature at 177 overpass (north bank)
• Plan ahead for ample parking
• Could parking be provided at middle school lots?
• Eisenhower School Nature Trail
• Stay away from major highways.
• Any consideration to spokes off the loop?
  (Zoo etc.) nice way to facilitate tours of city.
• Look at University bike trail plan.
• Buried natural gas lines easements for potential use (KPL is supportive of concept)
• Hudson Trail - possible west side trail segment
  - expand south
  - join at future station
• Agronomy fields - some land available?
• Implementation ideas? Possibly phased.
• Scenic Drive - possible west side trail segments.
• Schools can be connecting points.

PR - Get the Word Out
• Natural environment is a good feature

6) At this point Doug ended the meeting by thanking those in attendance for their participation. the group was also reminded that there would be a second public input session at 7:00 p.m. June 5, 1997 at the Fire Station large group meeting room.

The preceding minutes are my recollections of the events and discussions during the meeting. Please contact me immediately if there are any additions or corrections to these minutes.

Sincerely,

[Signature]

Paul J. Novick, ASLA

cc: Terry DeWeese
    Richard Allen
    Lorie Doolittle Bowman
    Doug Pickert
    Paul J. Novick
    Brent Bowman
    Fletcher Simmons
    Jerry Dishman
<table>
<thead>
<tr>
<th>NAME</th>
<th>ADDRESS</th>
<th>PHONE #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Al Parker</td>
<td>Manhattan KS</td>
<td>537-2946</td>
</tr>
<tr>
<td>Jim &amp; Peggy Coleman</td>
<td>801 Brockman Cir</td>
<td>539-5603</td>
</tr>
<tr>
<td>Eugene Lumpkin</td>
<td>1528 Williamsburg</td>
<td>539-6416</td>
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<tr>
<td>Valyn Richardo</td>
<td>1528 Williamsburg</td>
<td>776-0300</td>
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<tr>
<td>Elaine Mohr</td>
<td>800 S. Juliette</td>
<td>539-5568</td>
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<tr>
<td>Dann Fisher</td>
<td>1416 Nichols St.</td>
<td>776-9617</td>
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<tr>
<td>Linda Glasgow</td>
<td>2236 Snowbird Dr.</td>
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<td>Dade Bedwung</td>
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<td>Mike Penrod</td>
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<td>Christopher</td>
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<td>Kim McInneson</td>
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<tr>
<td>Dave Manning</td>
<td>401 Thurston</td>
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<tr>
<td>Steve Pfister</td>
<td>1908 Tulip Terr</td>
<td>532-6434</td>
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<tr>
<td>Mary Pfister</td>
<td>&quot;</td>
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</tr>
<tr>
<td>Nancy Baker</td>
<td>1415 Sunny Slope Lane</td>
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MANHATTAN LINEAR PARK - PHASE II
Meeting notes for public meeting
June 5, 1997, 7:00 p.m.
Manhattan Fire Station Headquarters, 2000 Denison Ave., Manhattan, KS

Attending:
• Richard Allen, Park Planner, City of Manhattan Parks & Recreation
• Scott Bingham, Theis Doolittle Associates
• Doug Pickert, Theis Doolittle Associates
• Members of the public:
  • David Colburn 1917 Blue Hills Rd. 537*0485
  • Doug Demonbrun 1430 Poyntz 537*9056
  • Eugene J. Laughlin 1528 Williamsberg Dr. 539*5603

The meeting was held to inform the public of the process the city will work through to develop the Phase II alignment, introduce the consultant team and seek the citizens input regarding the alignment.

The following items were discussed:

1) Richard Allen opened the meeting by welcoming those in attendance and introduced the design team members who were in attendance. He then briefly described the history of the Linear Park System's first phase.

2) The meeting was then turned over to Doug Pickert, Project Manager for Theis Doolittle Associates. Doug reviewed the general project area for Phase II on a base map developed for the project. The project areas spans from Casement Road on the east side of Manhattan and proceeds north to the Marlatt Road area. The corridor then heads west to Browning Ave. and heads south to Susan B. Anthony Elementary School. From this point, the corridor then proceeds once again to the west to the existing Hudson Trail to Kimball Ave. (Scenic Drive) on the west side of Manhattan to it's intersection with Anderson Ave. The corridor then heads east along Anderson Avenue to Anneberg Park.

Doug then reviewed a number of critical areas along the corridor such as bridge crossings, drainage and pedestrian culverts. Doug noted that there are some obvious areas where the trail will cross such as the culverts, the areas in-between these "fixed" points will be refined by the study.

3) Doug then began the discussion of particular elements of the trail. Those elements included:
• Surfacing
• Amenities
• Safety
• Trail Alignment
The comments/responses given by those in attendance were as follows:

**Trail Surfacing**
- Limestone collects "burrs" that wear on tires
- Could use more access points (alignment)
- All surfaces generally acceptable
- Improvements bring people
- Need spoke to north end of Manhattan Ave. - College (alignment)
- Work with College/City Bicycle Master Plan (alignment)

**Amenities**
- More opportunities for bathroom, drinking fountains - tie into existing park/convenience stores
- Emergency phone - especially remote areas - located on map - sense of security/deter crime
- Liability issues through developments - "safety"
- Incorporate with neighborhood, promote "ownership" (alignment)

**Trail Alignment**
- Connect with Hudson
- Scenic Drive very steep - could discourage riders
- Indirect and irregular is more interesting (alignment)
- Use area north of Kimball on Kitten Creek
- Use trail spurs to tie into Hudson Trail
- Loops are more attractive
- Beautiful views along Scenic Drive from Anderson Avenue to Fort Riley Boulevard (possible link)
- Hierarchy of loops - pedestrian to bike
- Anderson Ave. is "weak link"
- Use of sewer/drain easements through KSU agronomy land
- Pedestrian tie between Elementary and Middle School at north east corner of Manhattan (Butterfield Road - Casement Road or near Knox Blvd.)
- Pedestrian loop on Northview Road near water treatment plant
- Every school to tie into trail - uses schools recreation space/parking (save money).  Also helps supplement bussing of school children

**Miscellaneous**
- "Adopt A Bridge" for maintenance of existing low water bridges, need more promotion
SIGN-IN SHEET 6/5/97

Name  Address  Phone #

Eugene X. Kawanishi  1528 Williamson Rd  539-5603
David Colburn  1917 Blue Hills Rd  537-0485
Doug Deming  1830 Pointer  557-9686
Manhattan Linear Park - Phase II
Meeting Notes for Joint Meeting of Parks & Recreation Advisory Board
and Manhattan Urban Area Planning Board, City of Manhattan, KS
Manhattan Fire Station Headquarters, 2000 Denison Avenue

September 15, 1997; 7:00 P.M.

This meeting was held to review the Linear Park Phase II routing and
implementation recommendations with the Parks and Recreation Advisory Board
and the Manhattan Urban Area Planning Board, and to seek the comments and
input of these two groups towards finalizing the master plan process.

Doug Pickert reviewed the trail routing for the attendees and fielded the following
questions and comments:

Tuttle Creek Blvd. - what is the height of the existing box culverts? Answer
height 7’

Easements along Casement - too heavily trafficked areas? Answer - This is not an
ideal situation in the sense of traffic. However, it provides an important
connection to the Northview School and serves as a neighborhood loop of
the Linear Park system.

Bike Plan - have we received it? Is it compatible? - Answer, yes we have and we
will indicate connections on our next plan presentation.

Easements along Marlatt - need additional land or is existing row satisfactory?
Answer - Our recommendation is to seek additional right-of-way along the
north side of Marlatt to get the trail farther off of the road and allow
plantings to improve the road side environment.

KCPL easement and old railroad easement as a way to avoid Casement Road?
Answer - Our recommendation is that there are too many existing
obstructions and the power lines do not provide a better aesthetic
environment than Casement. As well, the KCPL alignment would not serve
the residences to the east of Casement as well as a connection to the school.

Another loop through Colbert Hills? (Smaller than other neighborhood loops.) At
least try now to accomplish an easement. Easier now than later. Also
conflict of activities to consider (rowdy cyclists vs. concentrating golfers).
Answer - We will look at creating this connection on our next plan.

Overlay Bike Path with proposed Linear Park. - Answer - We will do this.

Butterfield - existing right-of-way enough room? Answer - No, we are
recommendation is to upgrade the existing pedestrian access easement
behind the houses to the south of Butterfield.

Seth Child Road crossing at Marlatt is an at-grade crossing with this plan.
Bridge required to get the primary trail route into the future Northeast Community
park from the existing levee trail.

Routing along Wildcat Creek requires easements? Answer -yes.
How much of proposed route will require purchase? Answer - Our cost estimate
assumes that all of the route will be purchased. However, we hope that
negotiations with developers will decrease the amount of land purchased.
Comment that the plan presents an uninspiring route. There is no argument on the functional aspect, but where will we see vistas and other interesting elements? Need to show graphically on map. Answer - we will prepare a drawing to indicate the views, natural areas, and cultural and recreational assets along the route.

Spur to “Top of the World” - We will show this on the next plan.

Squeeze trail into existing easement along Marlatt? Advise against this - add more row and trees, let's create something. Answer - Our recommendation is to obtain additional right-of-way and create room for additional improvements.

Brent Bowman asked the attendees to list what kinds of landmarks or facilities they would like to see along the trail. Discussion focused on historic and cultural possibilities. Some interpretive opportunities included:
- Underground Railroad to transport slaves
- Casement Park
- Military trail from Fort Leavenworth to Fort Riley
- Santa Fe Trail cut-off
- Historical significance of city.

Emergency facilities. What are the limitations of emergency access. Suggests that there is too long of a secondary loop at north-east away from emergency assistance. Answer - emergency vehicles should have access to nearly all parts of the trail system.

What dictates gravel vs. pavement? Answer - primarily costs.

Retaining walls may be required at Marlatt to elevate trail above drainage easement.

Suggestion was made to create a trail spur to commercial areas such as Marlatt at Casement Drive.

Comment was made in appreciation of the recommendation to take advantage of existing facilities for trail heads.

Parking nodes considered? - Answer - Yes, they are a major element of trail heads.

Average width of easement - how is it determined? Answer - measurements at 50' o.c. through a particular development section.

Doug Pickert then reviewed recommendations for Zoning/Implementation guidelines.

He then fielded the following questions and comments:

Exclude culverts from clearance from utility structures. Answer - We will do this.

Insert regulations regarding parking and trail-head locations. Answer - We will do this.

Suggestion to make the trail wider wherever possible.

Where we are attracting pedestrians by virtue of the routing, make sure you can avoid conflict with bicycles.

Access points within residential neighborhoods - suggestion to leave room for modifications.

Emergency access to trail. How far apart? Answer - This will be dependent on specific aspects of surrounding developments. All access point should provide for emergency access if possible.

Question about trail lighting, do we need it? Answer - We are not recommending lighting on the trail because we do not want to encouraging use after dark.
May be points where we need to consider safety issues or desired family usage. Therefore, lighting may be a necessity in particular locations (e.g. schools). Heavily traveled roads may need greater distance between road and trail.

Colbert Hills
Re-route southern crossing through Colbert Hills.
Get a secondary trail through middle of Colbert Hills. - Answer - We will indicate this on the next plan.

The preceding minutes are my recollection of the events and discussions during the meeting.

Sincerely,

[Signature]

Douglas E. Pickert, ASLA
Manhattan Linear Park - Phase II

Meeting Notes for Joint Meeting of Parks and Recreation Advisory Board and Manhattan Urban Area Planning Board, City of Manhattan, KS
Manhattan Fire Station Headquarters, 2000 Denison Avenue

November 3, 1997; 4:30 p.m.

This meeting was held to review the Linear Park Phase II routing and implementation recommendations with the Parks and Recreation Advisory Board and the Manhattan Urban Area Planning Board and to seek the comments and input of these two groups towards finalizing the master plan process.

The following items were discussed:

1. Doug Pickert, Project Manager for Theis Doolittle Associates, reviewed the recommended Linear Park routing, including the primary and secondary routes. The review covered recommended trailhead locations for parking, shelters, restrooms, and other amenities which would support the Linear Park trail users. Doug also reviewed an accompanying document which highlighted the natural resource areas and significant viewsheds which were accessed by the recommended alignment.

2. Paul Novick, Principal of Theis Doolittle, then reviewed the Probable Project Construction Costs, including right-of-way acquisition costs.

3. The following comments and questions from the Advisory Board and the Planning Board were addressed by Doug Pickert and Paul Novick:

   • Where did we get the prices for the land acquisition costs? - Paul explained that the costs were derived by Fletcher Simmons of The Simmons Company based on average sales prices of land in the vicinity of the Linear Park alignment and were considered to be rough estimates. No interviews of land owners were undertaken. These costs, therefore, were not to be considered appraisals of the land value.

   • Comment that the costs of land acquisition would be affected by whether or not the land was purchased or right-of-way was obtained during the platting process.

   • Comment that the costs were very high, shocking.

   • Question regarding the two trails seemingly alongside each other in the vicinity of Scenic Drive. Doug explained that although the segments were close together on the plan that in reality they would be effectively separated because of the traffic volume of Scenic Drive. The two segments served different purposes and areas on the west side of the City.

   • Comment that the path should be a minimum of eight feet wide, but allowed to be wider if desired.

   • Question about the need for implementation standards. Doug explained that Theis Doolittle had prepared a document for this purpose and was included in the information sent to the City.
Comment about the undesirability of culverts for crossing a road. Paul explained that while some negatives do exist in this situation that it is the most economical method of separating the Linear Park users from the traffic on the roads. This arrangement is used frequently in other cities and trail systems.

- Comment that the only flaw in the Plan was the Seth Child Road crossing for the Primary Route. Do not like the location or at-grade crossing.
- Question regarding why lighting was not addressed in the plan. Lighting of certain areas would be important, particularly around the schools.
- Doug explained that it was decide in previous meetings with the parks department staff that lighting in general was not desirable due to the fact that the City did not want to encourage use of the Linear Park after dark. However, we will add comments to the report supporting consideration of lighting needs on a per location basis during implementation.

- Comment that the City should encourage land donation.
- Another comment expressing concern over the costs of the Linear Park. The City needs to be careful about proceeding with this Plan.

The preceding minutes are my recollection of the events and discussions during the meeting.

Sincerely,

[Signature]

Douglas E. Pickert, ASLA
Theis Doolittle Associates
Manhattan Linear Park - Phase II
Meeting Notes for Manhattan City Commission Policy Session, City of Manhattan, KS
Manhattan Fire Station Headquarters, 2000 Denison Avenue

November 25, 1997; 5:00 p.m.

This meeting was held to review the Linear Park Phase II routing and implementation recommendations with the Manhattan City Commission and to seek the comments and input of the Commission towards finalizing the master plan process. Doug Pickert and Lorie Doolittle Bowman from Theis Doolittle Associates, Brent Bowman of Brent Bowman and Associates, and Fletcher Simmons of The Simmons Company were present for the meeting.

The following items were discussed:

1. Doug Pickert, Project Manager for Theis Doolittle Associates, introduced the consultants attending, listed above.
2. Doug Pickert reviewed the recommended Linear Park routing including the primary and secondary routes. The review covered recommended trailhead locations for parking, shelters, restrooms, and other amenities which would support the Linear Park trail users. Doug also reviewed an accompanying document which highlighted the natural resource areas and significant viewsheds which were accessed by the recommended alignment.
3. Doug reviewed the recommended phasing strategies for Phase II of the Linear Park.
4. Doug then reviewed the Probable Project Construction Costs, including right-of-way acquisition costs.
5. The following comments and questions from City Commission were addressed by Doug Pickert:

- Question regarding the length of the secondary trails. Do we know what the overall length is? - Doug explained that he had not brought that information with him to this meeting, but the lengths had been determined during the cost estimating process. We will provide that information in our final report
- What are the maintenance costs per length of trail segments? - Doug stated that a specific determination of maintenance costs was not undertaken as a part of the master plan process.
- Were utility costs figured into the costs of trail development? - Doug said that, yes, they were added in.
- Comment recommending that we add recycling receptacles to the desired amenities for the Linear Park.
- Comment recommending that we consider a bridge at Seth Child Road instead of an at-grade crossing.
The preceding minutes are my recollection of the events and discussions during the meeting.

Sincerely,

[Signature]

Douglas E. Pickert, ASLA
Theis Doolittle Associates