

# **Town of Brookfield Bikeway Master Plan**



**Town of Brookfield, Waukesha County, Wisconsin**

**Landscape Architects, Inc.**

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Town of Brookfield, Waukesha County, Wisconsin

WisDOT Project I.D. 2721-01-00

February, 1997

Brookfield Town Hall  
645 North Janacek Road  
Brookfield, WI 53045  
414-796-3788

## **Brookfield Town Board**

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Debbie Prunty, Supervisor  
Carol Johnson, Supervisor  
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Robert Walkoe  
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Keith Henderson  
Dean Pearson

Gary Lake, Building Inspector



## **Landscape Architects, Inc.**

205 W. Highland Ave. Suite 204  
Milwaukee, WI 53203  
414-224-1030  
414-224-8070 fax  
Internet: [lainc@execpc.com](mailto:lainc@execpc.com)

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## Location Map



Town of Brookfield

## Purpose

A Master Plan to guide the orderly development of a bikeway system in the Town of Brookfield that will safely:

- Connect residents to high use destinations in the Town of Brookfield
- Connect neighborhood to neighborhood
- Connect to existing and proposed surrounding bikeways

The Bikeway Master Plan establishes the general location and type of facilities needed to complete the bikeway system.

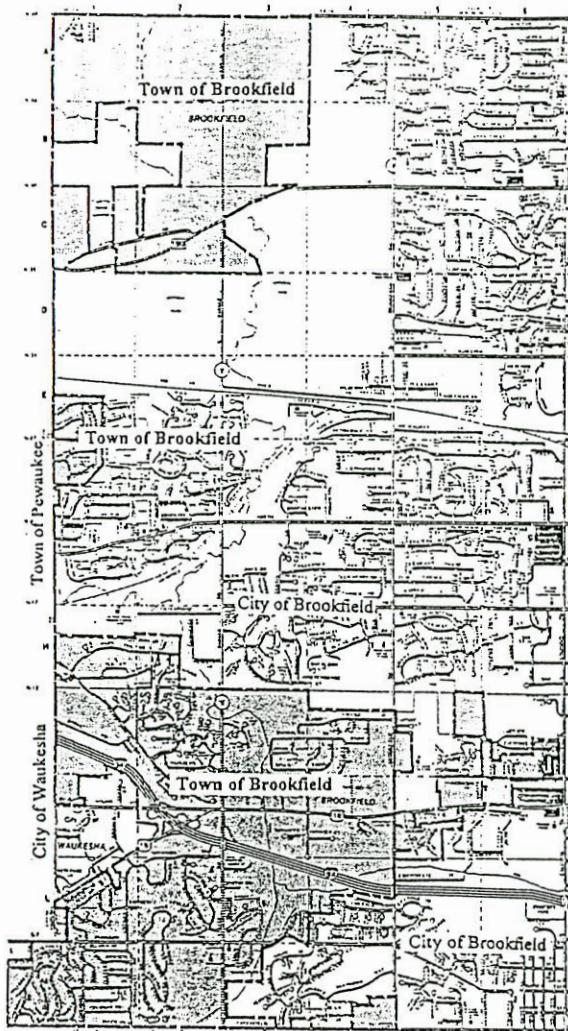
## Process

The Town of Brookfield and the Southeastern Wisconsin Regional Planning Commission initiated the planning for Bikeway Master, under a grant from the Wisconsin Department of Transportation. The process involved public participation and coordination with surrounding community's bikeway plans. Landscape Architects, Inc. carried out the planning with the Town of Brookfield.





## Town of Brookfield



### Town of Brookfield

The Town of Brookfield is located in the northeast corner of Waukesha County aside Interstate Highway 94. It is bounded by the City of Brookfield on the east, City of Waukesha and Town of Pewaukee on the west and the Town of New Berlin on the south. The Town of Brookfield bikeway will connect to local and state bikeways in each of these municipalities.

The Town of Brookfield is in three parts:

- North end is mostly wetlands
- Central area is Gaywood Estates.
- South end is where the majority of the people are located.

Bike access to the north end and Mitchell Park will be by local and regional bikeways through the City of Brookfield. The Gaywood Estates on the central eastern edge of the Town will be accessed along Springdale Road on a path built partially by the City and the Town.

The majority of the citizens live, work, and shop in the southern end of the Town. Interstate Highway 94 and Poplar Creek divide this area into four parts. The Poplar Creek Bike Path will unify the four parts of the Town. Access through and between the neighborhoods will be done with a combination of bike paths, and lanes.





## Bikeway Plan

### Bikeway Connections Within Road Right-of-Way

Major bikeway connections will be made within the right-of-way of arterial roads, which have no on-street parking and will be used, for commuter bicycle access. All bikeways within road right-of-ways will be built concurrent with the rebuilding of the road.

**Barker Road** is a planned bike route by Waukesha County and Town of Brookfield. When it is completed it will connect to local and regional bikeway systems. There are currently segments of the bikeway completed along Barker Rd. in the City of Brookfield. The 1997 expansion of Barker Rd. south of Interstate Highway 94 in the Town of Brookfield will include a separate bike lane on the east side. A special lane will be built on the west side from Davidson Rd. to the school at Swenson Dr.. This north-south route will be completed within 5 years by reconstruction of Barker Road.

- All expansion or rebuilding of Barker Road, south of Watertown Road will include a transit/bike lane.
- All rebuilding of Barker Road, north of Watertown Road, will include a bike path in the right-of-way.

**Brookfield Road** is a planned bike route by the City of Brookfield, with planned connection points at the south and north boundaries of the Town of Brookfield. When it is completed it will connect to local and regional bikeway systems. Brookfield Road is an important part of the Town bikeway system because it will

allow people to access Blue Mound Road Shopping without having to use Blue Mound Road, a heavy traffic major business arterial.

- Expansion or rebuilding of Brookfield Road will include a path in the right-of-way on the east side. A Transit/Bike lane will be built at the Brookfield-Bluemound Road Intersection

**Wisconsin Avenue** will provide safe bike access to the back of shopping along Bluemound Rd. The Avenue is being expanded from Calhoun Rd. to Brookfield Rd. in the next few years. This road expansion and bike path will be a joint effort between the Town and City of Brookfield

- All expansion or new segments of Wisconsin Ave will include bike paths in the right-of-way on the south side of the road.

**Davidson Road** is the primary east to west access on the south side of the Town of Brookfield. It is a planned bike route in the City of Brookfield and City of Waukesha. It provides access to Hillcrest School, Marx Park, Elm Brook Church, and St. Johns Church in the Town. It is a local collector street with a minimum pavement width and no shoulders. There are 6 intersections on to Davidson from local streets and some driveways. Davidson Road is scheduled to be rebuilt prior to the year 2000.





- When Davidson Road, west of Poplar Creek, is upgraded it will include bike access on shoulder lanes.
- When Davidson is rebuilt east of Poplar Creek, it will include bike paths within the right-of-way.

**Watertown Road** is a major arterial connecting the Town of Brookfield and Town of Pewaukee. Watertown Road is a two-lane road with narrow shoulders, limited sightlines and heavy vehicle traffic. It is currently unsafe for bike use. It is planned as a regional bikeway connection. Watertown Road is planned to be upgraded to handle the growing vehicle use, but not currently scheduled for construction.

- When Watertown Road is upgraded it will include shoulder lanes.

**Springdale Road**<sup>1</sup> north of Watertown Road is a major arterial that forms the west boundary of the Town. The road is two-lanes with bike paths within the right-of-way on some portions in the City of Brookfield.

Gaywood Estates is isolated from the rest of the Town and Springdale Rd. will be the link to the rest of the Town. Springdale Rd. will also be a vital link for the western edge of the Town and for residents of the Town of Pewaukee travelling to the Fox River Regional Bike Path and the Bluemound Road shopping area. Springdale Road is currently scheduled to be rebuilt between 1997-2000.

<sup>1</sup> See Signed Routes for Springdale Road in the southern part of the Town.

- During rebuilding of Springdale Road, build a bike path on the east side in the right-of-way.

**Bluemound Road** is a major commercial arterial road that bisects the Town east to west. Bluemound Road is the main commercial area for the five surrounding communities. It is the primary destination for most users. It is a heavily traveled 4-6 lane road. The high traffic load makes bike travel on the road hazardous. Driveways on to Bluemound Road are limited with driveways 100-500 feet apart. The right-of-way shoulder is clear of signs, but does have lights and utility boxes. There are no sidewalks along the street.

- Build sidewalks on both sides of Bluemound Road. 6-foot wide concrete sidewalks set a minimum of 5 foot back of curb. Provide pedestrian crosswalks at all major intersections. Connect the sidewalks to the existing sidewalks in the City of Brookfield.

#### Signed Routes - Bikeway Access within Neighborhoods

Bike access within residential neighborhoods can be accommodated on existing streets without roadway modifications. Where the street leads to a park, school, local bikeway systems, or a regional bikeway, the street will be signed as a bike route.

These streets include:

- Brook Park Dr. for access to Brook Park and through to the Fox River Bikeway.



- Mary Lane Dr. for access to Wray Park.
- Springdale Rd. (residential street) for access to Hillcrest School and the New Berlin Regional Bikeway.
- Black Forest Dr., Timberline Dr. and Briar Ridge Dr. for access to Brookfield Dr. and Janacek Rd.

### Off Road Bikeways

**Poplar Creek** and surrounding floodplain bisects the Town south to north. The floodplain is a broad open space with wetlands. The area is in the Town's Conservancy zoning district. The creek passes under Interstate 94 and Bluemound Rd. through double box culverts.

The Poplar Creek bike path is the link that connects the north and south parts of the Town. It is an alternative to bike travel on the heavily vehicle dominated Barker Road. It will connect to all the major east-west routes in the Town of Brookfield. The bike path would travel along the west side of the Poplar Creek and through the existing box culverts under I-94 and Bluemound Road. Building the bike path would involve cooperation with private landowners and Wisconsin Department of Natural Resources.

- Build the Poplar Creek bike path from Marx Park to Briar Rd.

**Watertown Road to Janacek Road Connector** is needed to connect the east and west sides of the Town. The northern neighborhoods of the Town of Brookfield are divided east from west by Poplar Creek. The addition of a bridge over Poplar Creek will connect the

neighborhoods and be a key link in an east-west bike route through the Town. It involves crossing Poplar Creek and undeveloped private land. Building the path would involve cooperation with land owners and Wisconsin Department of Natural Resources.

- Build a connector bike path and bridge to connect Janacek Road to Watertown Road.

### **Wray Park Connector**

This bike path would connect Wray Park to the proposed Regional Fox River Bike Path. It starts at Mary Lane Drive, goes through Wray Park and then on to Enterprise Drive. From Enterprise Drive, access to the proposed Fox River bike path would be on the existing Barker Road bike path. The Wray Park to Enterprise Drive segment is currently an undeveloped path on private property and in the City of Brookfield.

- Build connector bike path in coordination with the City of Brookfield.

**Water Tower Blvd. to Poplar Creek Connector** is needed to connect the southeast corner the Town to the Poplar Creek Bikeway and by extension, access to most of the Town on bike paths.

- Build a bike path in the right-of-way on the north side of Water Tower Blvd. and then a bike path to the Poplar Creek Bike Path.





## Bikeway Development Schedule

Bikeway Segment	Schedule
Barker Road	Phase 1: South of Blue Mound Road to be rebuilt: 1997-1998 Phase 2 North of Blue Mound Road to be rebuilt: 2001 -2002
Davidson Road	Build concurrent with road rebuilding: 1998 - 1999
Wisconsin Avenue	Build concurrent with road rebuilding: 1997-1998
Springdale Road	Build concurrent with road rebuilding. Road to be rebuilt in phases between 1997 and 2002
Poplar Creek	Phase 1: Water Tower Road to Blue Mound: 1998 Phase 2: Marx Park to Water Tower Road: 2000
Wray Park Connector	To be built when Fox River Bike Path is built by Waukesha County
Watertown Road- Janacek Road Connector	<i>Unscheduled at this time</i>
Neighborhood Route Signing	1997-2000
Brookfield Road	Build concurrent with Town and City of Brookfield rebuilding of road: 1998
Bluemound Road	2000-2005
Water Tower Blvd	Concurrent with Phase 1 Poplar Creek: 1998
Watertown Road	Build concurrent with rebuilding of Watertown Road: unscheduled



## **Bikeway Design Guidelines<sup>2</sup>**

### **Transit /Bike Lanes**

A travel lane on a major arterial street or highway should be a minimum usable width of 12 feet with a strip between traffic and lane.

- Barker Road

### **Shoulder Bicycle Lanes**

A 6 foot wide bike lane on each side of a two lane street or road or an 8' wide lane on four-lane or more street. The lane should be divided from the street with a strip. Design to accommodate 20-30 mile per hour traffic.

- Watertown Road
- Davidson Road
- Wisconsin avenue
- Brookfield Road
- Janacek Road

### **Bicycle Paths in the Right-of-Way**

A bicycle path in the right-of-way is a 6' to 12' wide path separated from the street. The path is generally built to accommodate bicycles and pedestrians. Design to accommodate 10-20 mile per hour traffic. One-way bike paths, where there exists a path on each side of the street should be 6' wide. Two-way bike paths should be 8'-12' wide. A 2-foot wide gravel shoulder on each side is required to stabilize the path structure and allow vehicle maintenance. A minimum 5' separation is required between street and path.

- Springdale Road
- Water Tower Road

### **Concrete Sidewalk**

Concrete sidewalks will be used along major curb and gutter streets. They are for joint pedestrian and bicycle use. They should be minimum of 6-foot wide and located a minimum of 5-foot from the curb. Design for 5-10 mile per hour traffic.

- Blue Mound Road

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<sup>2</sup>Bikeway should be designed in conformance with the Manual on Uniform Traffic Control Devices, and ASSHTO Bicycle Guide.



### **Bike Path Off-Road**

A bicycle path is a bicycle way that is physically separated from motor-vehicle traffic by a distance or a barrier. A bicycle path is located within a highway right-of-way or in a separate corridor. Bicycle paths are two-way facilities and often accommodate pedestrians and bicyclists. They should be designed to accommodate 20-25 mile per hour traffic.

The off-road paths should have these design standards:

- Minimum 8' wide pavement with 2 foot wide gravel shoulders
- 12' wide pavement where volume is 25 users per peak hour with 2 foot wide shoulders
- Side and center line paint stripping.
- Traffic signs at intersections
- Vehicle barriers where paths intersects streets. Barriers are to stop unauthorized vehicle use of path, but to be removable for emergency and maintenance access.

Off-road paths include:

- Poplar Creek
- Janacek-Watertown Road Connector
- Wray Park

### **Bridges**

A bicycle bridge should be 2 foot wider each side than the approaching bike path and a minimum of 12' wide. Railings should be 4.5 feet high with a smooth handle bar rub rail at 3.5 feet high. Side stripping 1 foot from edge.

- Two bridges over Poplar Creek

### **Underpass**

There are presently 2 box culverts under I-94 and Bluemound Road. The bike path will pass through the western culvert. It will be designed with:

- 12' wide pavement with center and side stripes
- 10' clearance for emergency vehicle access
- Handrail on open side
- Lighting
- See-through sightline
- Low flood flow resistance

### **Lighting**

Bikeways will be lighted by the lighting used on the adjacent street. Bike paths not associated with a street will not be lighted.





### **Clearance**

Horizontal clearance to obstructions will be 2' from edge of pavement.  
Vertical clearance should be 8 feet to allow for maintenance and emergency vehicle access.

### **Curb Ramps**

Curb ramps should be built at all intersection of bike path and streets in conformance with Section 66.616 of the Wisconsin Statutes.

### **Bikeway Identification**

Signs should be placed to identify the bikeways. They should be at a minimum placed at beginning, ends and intersections. The bikeway should conform to the Manual on Uniform Control Devices.

### **Pedestrian Accessibility**

The bikeway will be used by bicyclist and pedestrians and must meet all the requirement of The Americans with Disabilities Act and State of Wisconsin regulations.

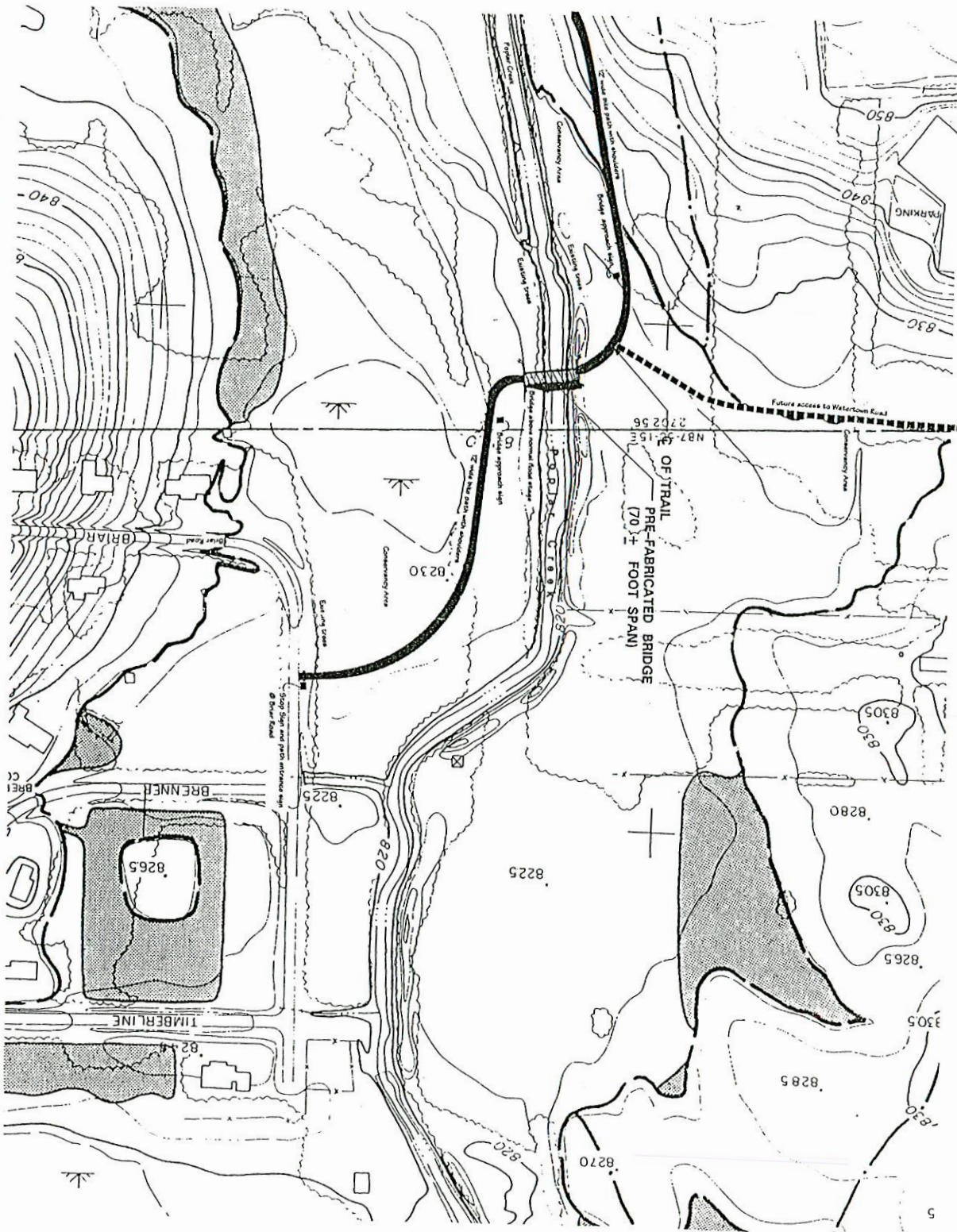
### **Bike Lane Surfaces**

All on-road lanes will be surfaced with the same pavement as the adjacent road.

### **Bike Path Surfaces**

Bike path surfaces should provide a smooth riding surface. Use a bituminous concrete surface to a depth necessary to support maintenance and emergency vehicles.

Schematic Plan for Bike Path from Water Tower Road to Briar Road  
**TOWN OF BROOKFIELD**  
*Bikeway Master Plan*



**LEGEND:**

TRAIL CENTER LINE

100-YEAR FLOOD INUNDATION LINE

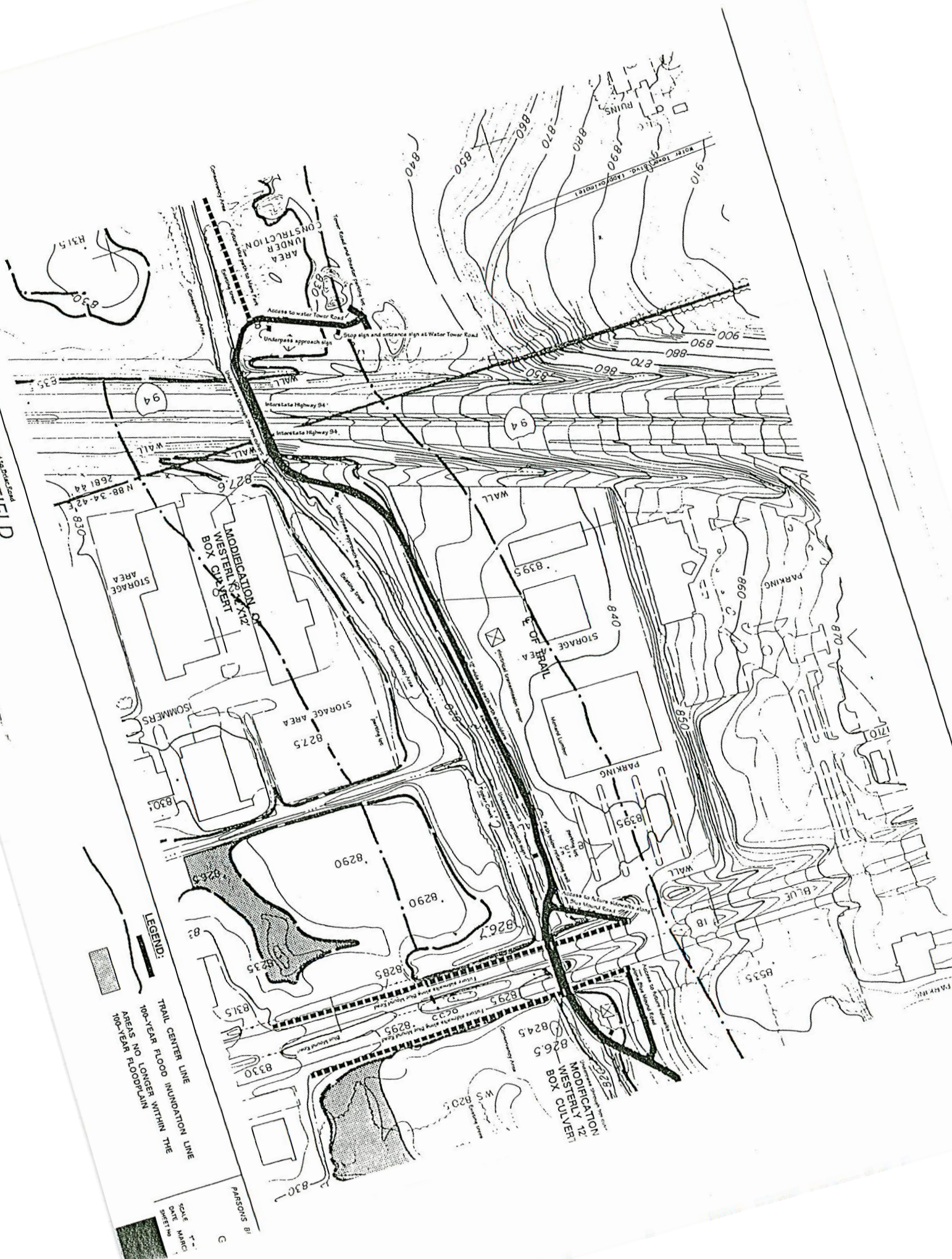
AREAS NO LONGER WITHIN THE  
 100-YEAR FLOODPLAIN

PARSONS

SCALE 1" =  
 DATE MARCH  
 SHEET NO.



OF BROOKFIELD  
Water Plan



LEGEND:

- 100-YEAR FLOOD INUNDATION LINE
- 100-YEAR FLOOD NO LONGER IN INUNDATION LINE
- 100-YEAR FLOOD AREA

DATE: MARCH  
SHEET NO. 1

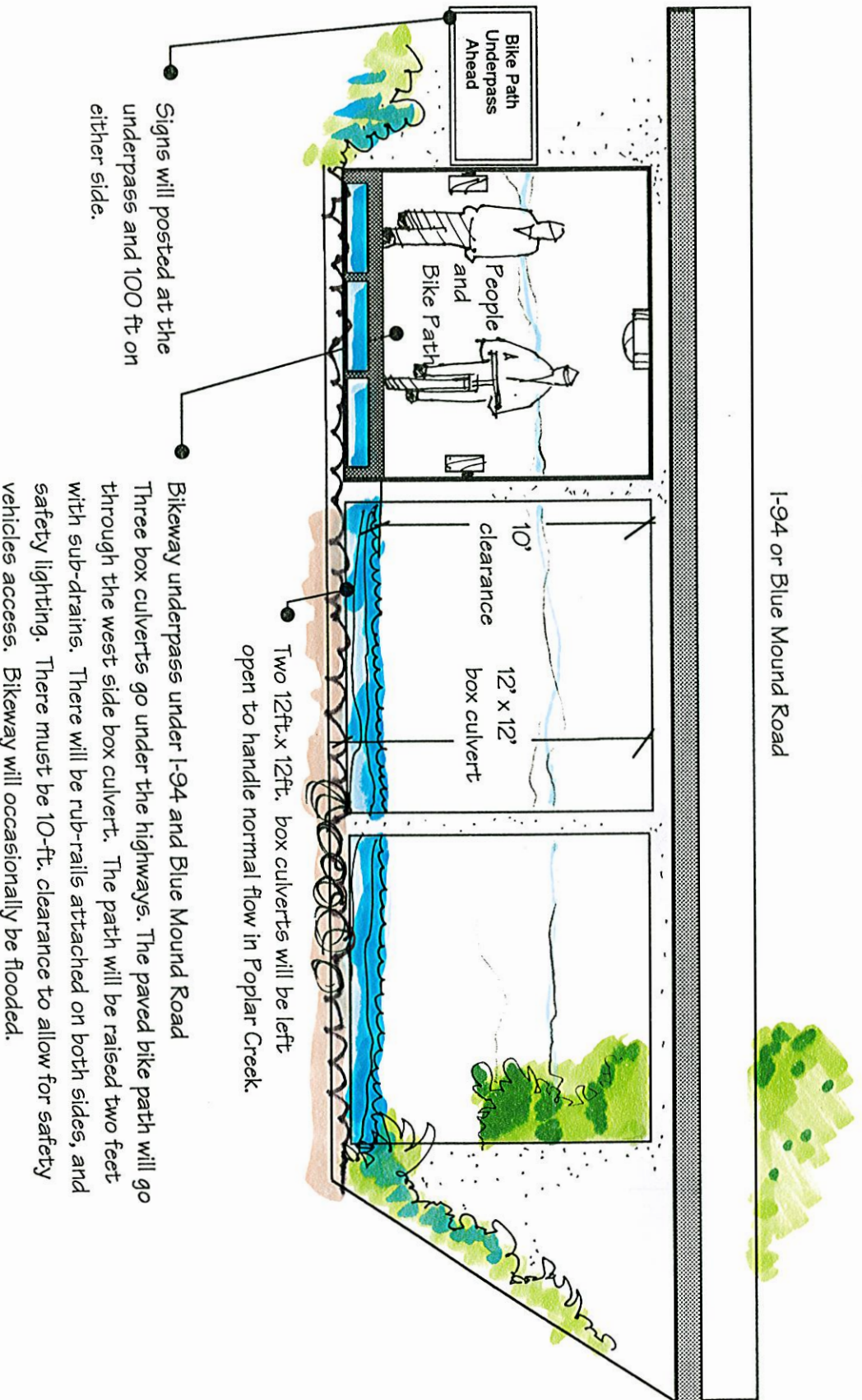


Town of Brookfield Bikeway Master Plan

**Typical Under-Pass**

Box Culvert Elevation

Not to Scale



Bikeway underpass under I-94 and Blue Mound Road  
Three box culverts go under the highways. The paved bike path will go through the west side box culvert. The path will be raised two feet with sub-drains. There will be rub-rails attached on both sides, and safety lighting. There must be 10-ft. clearance to allow for safety vehicles access. Bikeway will occasionally be flooded.





# Bikeway Master Plan

## Plan Key

## Bikeway



### Transit/Bike Lane

A 10-12 foot wide travel lane on a major arterial street or highway, separated from traffic by a strip.



### Shoulder Lanes

A 6-foot wide lanes on each side of a street or highway, separated from traffic by a strip.



### Bike Path in Right-of-Way

6 to 12 foot wide bicycle lane separated from the street, but within the right-of-way.



### Bike Path Off-Road

A 8 foot to 12-foot wide path separated from street.



### Signed Neighborhood Routes

Bike access designated with signs on existing residential streets, without modification of existing roadway.



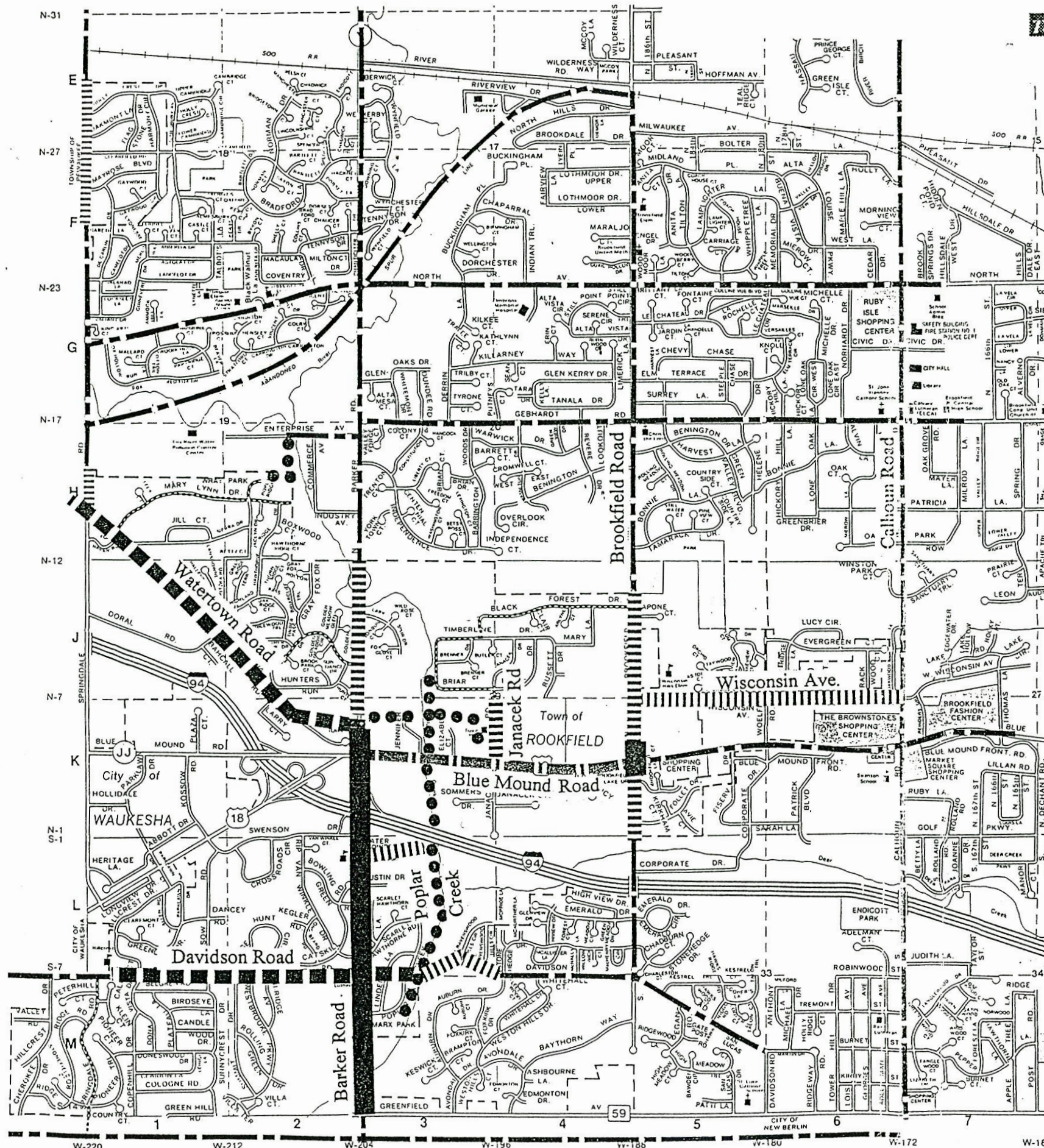
### Concrete Sidewalks

6' wide concrete sidewalks along curb and gutter streets.



### Connecting Bikeways

Existing or planned bikeways that the Town of Brookfield will connect to with its bikeway.





**Town of Brookfield Master Bikeway Plan**  
**North-South Bikeway Segment**  
**From Brenner Drive south to Water Tower Blvd.**  
**Construction Cost Estimate**

**Unit Costs:**

10-foot-wide asphalt bicycle path:	\$	12	per foot of path
Prefabricated Pedestrian Bridge:	\$	85,250	each
Modify Box Culverts to pass trail beneath roadway:	\$	153	per foot of culvert

Approximate Trail Length:	5550 feet	\$ 66,600
Bridge over Poplar Creek	1 each	\$ 85,250
Modify Culverts under Blue Mound Road:	200 feet	\$ 30,600
Modify Culverts under I-94:	240 feet	\$ 36,720
Miscellaneous Appurtanences:		\$ 4,400
		<b>\$ 223,570</b>

Note: The estimated construction costs do not include any engineering fees, cost of land or right-of-way acquisition, easements needed for construction, or Town of Brookfield's engineering, administration, or legal costs.

*no easement or property*

All unit costs are based on an average, actual costs may vary up or down based on the actual terrain. A 15% contingency has been built into the unit costs.



## Brookfield Bikeway Plan

### Construction Cost Estimate

#### Unit Costs:

10-foot-wide asphalt bicycle path:	\$	12	per foot of path
Prefabricated Pedestrian Bridge:	\$	85,250	each
Modify Box Culverts to pass trail beneath roadway:	\$	153	per foot of culvert

#### 1.0 North-South Bikeway Segment (from Brenner Drive south to Water Tower Blvd.)

Approximate Trail Length:	4700 feet	\$ 56,400
Bridge over Poplar Creek	1 each	\$ 85,250
Modify Culverts under Blue Mound Road:	200 feet	\$ 30,600
Modify Culverts under I-94:	300 feet	\$ 45,900
		<u>\$ 218,150</u>

#### 2.0 East West Bikeway Segment (from Barker Road east to Janacek Road, past Town Hall)

Approximate Trail Length:	5700 feet	\$ 68,400
Bridge over Poplar Creek	1 each	\$ 85,250
		<u>\$ 153,650</u>

Note: The estimated construction costs do not include any engineering fees, cost of land or right-of-way acquisition, easements needed for construction, or Town of Brookfield's engineering, administration, or legal costs.

All unit costs are based on an average, actual costs may vary up or down based on the actual terrain. A 15% contingency has been built into the unit costs.