

**ROCK CREEK HIKER-BIKER
TRAIL BRIDGE**

**FACILITY PLAN
TECHNICAL REPORT**

Prepared by

**URS CORPORATION
HUNT VALLEY, MARYLAND**

September 4, 2003

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FACILITY PLAN TECHNICAL REPORT

ROCK CREEK HIKER-BIKER TRAIL BRIDGE

INTRODUCTION

The Maryland-National Capital Park and Planning Commission's (M-NCPPC) 18-mile **Rock Creek Hiker-Biker Trail** is one of the most popular trails in the Washington metropolitan area. A section of the trail near the Aspen Hill Road/Veirs Mill Road intersection is discontinuous, relying on local streets within the Aspen Hill community to access the present trail termini. Further, this route requires trail users to cross Aspen Hill Road at an unsignalized crosswalk and cross Veirs Mill Road at a signalized crosswalk. Trail users encounter high levels of vehicle traffic when using both crosswalks, which are also used by transit users accessing and transferring between adjacent WMATA and County Ride-On bus stops.

The M-NCPPC proposes an improved connection for the Rock Creek Hiker-Biker Trail across the Veirs Mill Road (MD 586)/Aspen Hill Road intersection, including sidewalk connections to the adjacent community and bus stops (see **Figure 1**). This 1,670 linear foot section will provide, when built, a safer, high quality continuous connection between separated segments of the popular Rock Creek Hiker-Biker Trail to better serve bicyclists, pedestrians and transit users in the Aspen Hill region of Montgomery County.

M-NCPPC retained the services of the Montgomery County Department of Public Works and Transportation (DPWT) to conduct a Facility Planning Study. The Facility Planning Study by DPWT was conducted in accordance with the following:

- M-NCPPC's April 1994 Approved and Adopted Aspen Hill Master Plan

- M-NCPPC's December 1993 Approved and Adopted General Plan Refinement of the Goals and Objectives for Montgomery County (General Plan)
- M-NCPPC's June 1978 Approved and Adopted Master Plan of Bikeways

The Aspen Hill Master Plan calls for a bikeway network of commuter and recreational routes interrelated with a system of neighborhood routes that connect communities to many public facilities, shopping centers and employment sites. The Rock Creek Hiker-Biker Trail is an important element of the network of high quality trails in the County. An improved connection of Rock Creek Hiker-Biker Trail in this location will in part serve to complete the bikeway network. Improving the Rock Creek Hiker-Biker Trail with other existing and proposed bikeways in the Aspen Hill Planning Area would provide a comprehensive network of bikeways for bicyclists, encourage more individuals to choose multi-modal transportation options, reduce the congestion in the area during the peak commuting hours, and would promote the health and welfare of residents within the Aspen Hill communities (**Figure 2** shows the existing and proposed trails in the vicinity of the Study Area).

The trail is very popular, as evidenced by the trail usage data shown in **Table 1**, which provides a summary of Trail User Counts performed during the year 2000. While the data was collected at the intersection of the Rock Creek Hiker-Biker Trail and Dewey Road, which is located just outside of this project's limits, it does provide an example of the types and volumes of trail users. The average number of users per hour is 35. This average was calculated from data representing the 707 total trail users recorded for the duration of 20 separate hour-long observations.

**TABLE 1: ROCK CREEK HIKER-BIKER
TRAIL USAGE DEMOGRAPHICS AND VOLUMES***

		AGE GROUP					
ACTIVITY (# of users)		0-14	15-24	25-44	45-59	60+	Total
	Bicyclists (312)	11%	10%	16%	7%	1%	45%
	Walkers (312)	10%	10%	14%	7%	3%	44%
	Joggers (50)	0%	1%	5%	0%	0%	6%
	Inline Skaters (1)	<1%	0%	0%	0%	0%	<1%
	Other (10)	1%	0%	0%	0%	0%	1%
	Infants/Strollers (22)	3%	0%	0%	0%	0%	3%
	Total (707)	26%	21%	35%	14%	4%	100%

*Data Represents Totals of 20 Separate Hour-Long Observations

The Rock Creek Hiker-Biker Trail is discontinuous near the Aspen Hill Road/Veirs Mill Road intersection. Presently, the north side of the trail terminates at the circular parking area at the Aspen Hill Local Park (see **Figure 3**). Users of the trail wishing to continue south across Veirs Mill Road must follow the parking lot driveway to Baltic Avenue, and then take Baltic Avenue to Adrian Street to Aspen Hill Road. Pedestrians and bikers then must cross to the south side of Aspen Hill Road to reach the crosswalk at the Veirs Mill Road/Aspen Hill Road intersection (see **Figure 4**). The hiker-biker trail then re-emerges, and continues within Rock Creek Regional Park south of the signalized Aspen Hill Road/Veirs Mill Road intersection. Northbound trail users at this point must reverse the route described above to rejoin the trail at the parking lot in the Aspen Hill Local Park. The dashed orange line shown on **Figure 1** represents the existing path trail users must take through the neighborhood.

The existing hiker-biker trail is a multi-use facility serving mostly recreational bicyclists and pedestrians daily throughout the year, with larger numbers of users during the warmer months. Pedestrians use the trail throughout the day for recreational walking and as a means of travel to community destinations. Although the Rock Creek Hiker-Biker Trail is used primarily by recreational bicyclists and pedestrians, there is the potential for commuter bicyclists

to travel from Upper Rock Creek and the Aspen Hill neighborhoods to Bethesda, North Bethesda and Kensington, and perhaps beyond to Washington, D.C.

NEED

A continuous connection of the Rock Creek Hiker-Biker Trail, between the Veirs Mill/Aspen Hill Road intersection and the parking area of the Aspen Hill Local Park, is needed to add continuity to the trail and provide a safer crossing of Veirs Mill Road. Users currently face an at-grade crossing at the intersection of Veirs Mill Road and Aspen Hill Road.

To address intersection capacity, the intersection of Aspen Hill Road and Veirs Mill Road (MD 586) is the subject of a Congestion Relief Study improvement being implemented by the SHA. Travel demand forecasts for SHA's study indicate that the intersection is currently experiencing a failing level of service (LOS F) in the a.m. peak and LOS E in the p.m. peak period and is forecasted to deteriorate further. In addition, the intersection of Adrian Street and Aspen Hill Road also experiences high traffic volumes during the morning and evening peak periods. SHA's programmed improvements at Veirs Mill Road and Aspen Hill Road will improve the traffic operations, but pedestrians and bicyclists using the Rock Creek Hiker-Biker Trail will still need to mix with high volumes of motor vehicle traffic as they cross Veirs Mill Road at grade. Removing the majority of bicycle and pedestrian traffic from the Veirs Mill Road/Aspen Hill Road intersection will improve the operations and safety of the intersection for motorists, bicyclists, and pedestrians.

The existing high levels of traffic present a potential conflict between users of the hiker-biker trail and vehicles traveling across Veirs Mill Road. Pedestrian crossing signals have been implemented for the purposes of crossing Veirs Mill Road and Aspen Hill Road. However, the at-grade crossings and general inconvenience pedestrian and bikers face at these congested intersections may be a barrier to the continued use of the trail from the transition points. In addition, those same pedestrians and cyclists present an element of danger and inconvenience to

the motorists. By forcing pedestrians and bicyclists to cross at grade at an already congested intersection, additional conflicts may be generated by motorists waiting for crossing pedestrians and cyclists. The increased width resulting from the roadway expansion proposed under the CRS improvement will increase the amount of time it takes for pedestrians and bicyclists to cross the roadway.

Further, traffic accidents may result from motorists exceeding the posted speed limit of 45 mph and reduced reaction time when faced with slower bicyclist and pedestrian traffic. Data reported by the Maryland State Police for this intersection between January 1, 1998 and July 11, 2001 indicate that three pedestrians and two bicyclists have been involved in accidents at the Veirs Mill Road/Aspen Hill Road intersection. Of the 41 total accidents reported at this intersection, there was one fatal accident, a pedestrian collision involving an eastbound vehicle (four of the five pedestrian/bicycle accidents involved vehicles eastbound on MD 586). In addition, 24 accidents involved injuries. The most prevalent collision types were rear end collisions (17), left turn collisions (14) and pedestrian /bicycle (five). There were five accidents involving the use of alcohol (none of which were pedestrian/bicycle collisions). The types and severity of these accidents illustrate the need for a safe bicycle/pedestrian crossing near this intersection.

ALTERNATIVE PLANS CONSIDERED

The new trail alignments for all alternatives would be within existing M-NCPPC property. The property is heavily wooded with dozens of specimen trees. Specimen trees have a diameter 30 inches or greater when measured 4.5 feet above the ground. The portion of the property north of Veirs Mill Road is higher in elevation than Veirs Mill Road. South of Veirs Mill Road, the property is lower and lies within the 100-year floodplain. The presence of wetlands is minimal in the adjacent floodplain. The ruins of Veirs Mill lie to the southeast of the Veirs Mill Road crossing at Rock Creek. The ruins are not impacted by the project. They are

located outside the project areas of all of the alternates, except Alternate 3. The ruins are located within 100 feet of the alignment for Alternate 3.

The surrounding community would like the trail screened from their perspective, however, they requested that the portions of the trail connecting the community to the transit stops be highly visible to reduce crime and security concerns, especially during hours of darkness.

Three build alternatives were presented to the public on May 1, 2003 (see attached plans). A comparison of the alternatives is shown below.

Alternative 1 - No Build (see Figure 5)

- Pedestrians and bicyclists would continue to cross, at-grade, at the signalized intersection.
- Alternative does not address the project's purpose and need.
- SHA's widening improvements include upgrading the existing crossing to include pedestrian refuge in the median.
- No impacts are anticipated.

Alternative 2 - Slightly Meandering Trail - Original Preferred (see Figure 6)

- Provides park-like trail experience for users.
- Trail comes no closer than 60 feet of Aspen Hill Park neighborhood.
- Partially follows natural contours of park.
- Elevated crossing of MD 586 is 600 feet northwest of intersection.
- Introduces 1,925 feet of new trail.
- Moderate parkland and floodplain impacts.

Alternative 3 - Winding Park Trail (see Figure 7)

- Provides best park-like trail experience for users.
- Trail comes no closer than 70 feet of Aspen Hill Park neighborhood.
- Follows natural contours of park.
- Elevated crossing of MD 586 is 900 feet northwest of intersection.
- Introduces 2,700 feet of new trail.
- Highest parkland and floodplain impacts.

Alternative 4 - Direct Path Connection (see Figure 8)

- Most direct trail connection.
- Provides minimal park-like experience for user.
- Trail comes within 25 feet of Aspen Hill Park neighborhood.
- Elevated crossing of MD 586 is 400 feet northwest of intersection.
- Introduces 1,560 feet of new trail.
- Least parkland and floodplain impacts.

Alternative 5 - Revised Preferred Alternative (see Figure 1)

- Provides park-like trail experience for users.
- Trail provides adequate separation of trail and Aspen Hill Park neighborhood.
- Curved bridge crossing of MD 586 is 370 feet northwest of intersection.
- Adds about 1,670 linear feet of new trail.
- Moderate parkland and floodplain impacts.

- Provides access to community and transit stops.

Impacts and Issues Summary

Issues and Impacts	Alternative 1 No-Build	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Length of Bridge/ Curved Section	No Structure	750 feet of structure/75 feet of curved section	825 feet of structure/200 feet of curved section	700 feet of structure/200 feet of curved section	610 feet of structure/542 feet of curved section
Wetland Impacts	No Impacts	None Anticipated	None Anticipated	None Anticipated	None Anticipated
Park Experience	None	Moderate	Best	Least	Moderate
Impacts to 100- Year Floodplain	No Impacts	Elevated: 2,300 S.F.	Elevated: 7,300 S.F.	Elevated: 1,100 S.F.	Elevated: 7,800 S.F.
		Retained: 15,300 S.F.	Retained: 20,300 S.F.	Retained: 11,100 S.F.	Retained: 27,600 S.F.
Parkland Impacts	No Impacts	33,500 S.F.	53,500 S.F.	29,600 S.F.	81,900 S.F.
Forest Impacts	No Impacts	Elevated: 26,000 S.F.	Elevated: 46,000 S.F.	Elevated: 12,000 S.F.	Elevated: 7,900 S.F.
		Retained: 30,000 S.F.	Retained: 50,000 S.F.	Retained: 15,000 S.F.	Retained: 57,900 S.F.
Specimen Tree Impacts	No Impacts	3 Specimen Trees	3 Specimen Trees	3 Specimen Trees	4 Specimen Trees
Impacts to Veirs Mill Ruins	No Impacts	No Impacts	Minimal Impacts (Within 100 Feet of Ruins)	No Impacts	No Impacts
Impacts will increase for Alternatives 2 to 4 if stormwater management and community connections are included.					
Construction Costs (Millions)	None	\$4.2	\$4.8	\$4.1	\$4.7

PREFERRED FACILITY PLAN

Alternative 2 was the preferred alternative after the first public meeting held on May 1, 2003. Later, the Aspen Hill Civic Association requested that the project include enhanced connections to the community and transit stops along Veirs Mill Road and Aspen Hill Road. The enhancements were applied to the preferred alternative only. Also, as a result of incorporating the latest topographic survey rather than photogrammetry on Alternative 2, grading impacts increased significantly for the northernmost 300 feet of the trail. The revised Alternative 2 was

renamed Alternative 5. These two above mentioned revisions to Alternative 2 would have similar impacts if included under the remaining alternatives should they be developed further.

Enhancement funding is requested for a shared-use trail that will be 8 feet minimum in width. Environmental features have been identified during field walks with the Maryland Department of the Environment (MDE) and Montgomery County Department of Permitting Services (DPS), along with correspondence from the Maryland Historic Trust, Maryland Department of Natural Resources (DNR) Environmental Review, DNR Wildlife and Heritage, and the U.S. Fish and Wildlife Service (see agency coordination letters). Based on input received, environmental impacts have been minimized.

The project is designed to conform to the recommendations of the "Guide for the Development of Bicycle Facilities" as published by the American Association of State Highway and Transportation Officials (AASHTO). The applicable standards of the SHA, the requirements of the Americans with Disabilities Act, and Montgomery County requirements will also be utilized.

The project includes the following features:

- 1,060 linear feet of Class I asphalt bike trail of 8-foot width;
- 610 linear feet of bridge crossing of 12-foot width able to accommodate light maintenance vehicles (H-10 loading);
- 555 linear feet of concrete sidewalk of 8-foot width connecting to adjacent community and transit stops;
- stormwater management and water quality enhancement;
- signage appropriate to design;
- design aesthetics or treatments involving an artist who participates on the design team; and

- pedestrian lighting on new portions of trail bridge and sidewalk used to transfer between transit stops.

There are no historic structures, historical districts, or archaeological sites within the project area for the preferred alignment.

All of the right-of-way for the project is contained within the County-owned right-of-way/parkland or State right-of-way.

CURRENT STATUS

The M-NCPPC has identified the Rock Creek Hiker-Biker Trail Bridge as a priority project. M-NCPPC with the support of DPWT awarded a contract to URS Corporation to perform Phase I and II Facility Planning for the project in January 2003.

Data collection and base mapping, utilizing available GIS information provided by the County, SHA right-of-way plats, SHA CRS Construction Plans, etc. were completed to allow for preparation of alternative alignments for the proposed trail. After a preferred route was selected, topographic survey and geotechnical borings were obtained. Base maps show known right-of-way boundaries, existing roadway locations, proposed roadway improvements where known, stormwater management, and other features. The proposed Class I, or shared-use path, is shown on the 30 percent completion plans. This alignment was selected from three concepts and best represents implementation of the trail to minimize environmental impacts, especially floodplain, wetland, parkland, and specimen tree impacts, while avoiding utilities and disruption to adjacent residential areas.

The Rock Creek Hiker-Biker Trail Bridge presents the fundamental type of project that the Transportation Enhancement Program selects for funding. This trail will provide a safe and attractive path for residents, pedestrians, and bicyclists using the Rock Creek Trail in

addition to providing a safe, attractive, and lighted path for transit users accessing and transferring between transit stops.

This project has continued public support as indicated by attendance at public meetings and forums (meeting summaries attached), and the other individuals that have provided support letters. The community requested safe, attractive, and lighted areas to the trail, while adjacent homeowners requested a privacy buffer between their homes and the trail. After the first public meeting, the community leaders felt that the original design alternates could have better access to the community, so these requests were reinforced during subsequent meetings with the Aspen Hill Civic Association (meeting summary attached). Afterwards, the community connections were further enhanced for the preferred alternative and presented at the second public meeting. A third public meeting was held to introduce the artist and give her feedback.

Communication with SHA officials, including Messrs. Neil Pedersen (Administrator) and Charlie Watkins (District 3 Engineer), has been ongoing for the past year or more. They have been supportive of this overall project and encouraged M-NCPPC to apply for Enhancement funds to facilitate the construction. This is clearly a regional improvement considering the proximity to transit, schools, and recreational facilities in the vicinity. The project team also received recommendations from SHA representatives responsible for administering the Transportation Enhancement funds program (Mary Feller, Victor Barreira, and Mike Haley) at a project introduction meeting on June 18, 2003 (see attached meeting summary). The TEP funding application and cost estimate incorporates these recommendations.

Several review meetings took place with M-NCPPC staff. A Development Review Committee Meeting was held on July 28, 2003. During the meeting a request was made for a meeting with historical and archeological staff at M-NCPPC. This meeting with Michele Naru of M-NCPPC Historic Properties and Dr. Jim Sorenson of M-NCPPC Archeology was held on August 4, 2003. After reviewing the researched documents, the staff determined that the remains of Veirs Mill are located west of the preferred alignment, southeast of where Veirs Mill

Road crosses Rock Creek. It was also noted that the alignment for Alternate No. 3 would come within 100 feet of the remains.

A Plan Review Meeting was held on August 12, 2003 (see attached meeting summary). Staff was concerned about the minimal benefits of the stair tower on the south side of Veirs Mill Road; possible revisions that would reduce the large number of trees impacted; and security, cleaning and maintenance requirements. Addressing these concerns should not significantly increase the costs of the project and would be addressed during final design.

During final design, the Federal draft trail accessibility standards, which are more permissive than the current ADA standards for walkways, would need to be approved for use on the project in order to reduce the large number of trees impacted. The draft standards would be applied to only the portion of the trail not used for transit access. Using the draft standards would permit the designers to increase the slope of the trail along the parking areas approaching the northern limit of work, thereby significantly decreasing the grading requirements. Also, if the project was allowed to rely on less restrictive stormwater management requirements that considered the non-motorized users, the treatment requirements would be reduced, thereby decreasing the tree impacts to a lesser extent.

The Public Arts Trust of the Arts and Humanities Council of Montgomery County identified this project as an ideal project for incorporating public art. The Trust funded \$10,000 to include an artist on the design team during the facility planning process. The artist was selected through the Public Art Trust's process. The Public Arts Trust identified a short list of several artists with experience in bridge and highway design and construction. The artists were interviewed by a panel consisting of representatives from the Public Arts Trust, Montgomery County Department of Public Works and Transportation, and the Commission. Vicki Scuri, who has a national reputation and extensive experience in this type of design, was selected for the project.

The following outline is a status of Environmental Issues:

I. Wetlands

- A. Held field walk with agencies on May 9, 2003 (Meeting summary attached). MDE requested that it be verified that no wetlands are present at eastern limit of trail. Wetlands were not noted at eastern limit during informal JD held on June 21, 2002 for SHA's MD 586 at Aspen Hill Road project.
- B. URS verified no wetlands during field investigation held on June 10, 2003.
- C. URS sent follow up letter to MDE on June 17, 2003 (attached).
- D. Waiting for MDE response to follow up letter.
- E. After response, no additional effort expected before TEP application.

II. Historical

- A. MHT determined no properties were affected by SHA's MD 586 at Aspen Hill Road project. Since study area extended beyond Rock Creek Trail project limits, no properties are thought to be affected by Rock Creek Trail project.
- B. URS sent letter and plans to MHT on May 29, 2003, requesting that MHT concur that no properties affected by Rock Creek Trail project (attached).
- C. Received MHT's concurrence on June 20, 2003 (attached).
- D. Briefed Michele Naru of M-NCPPC Historic Properties and Dr. Jim Sorenson of M-NCPPC Archeology on August 4, 2003. Determined that the remains of Veirs Mill are located west of the preferred alignment, southeast of where Veirs Mill Road crosses Rock Creek. It was noted that the alignment for Alternate No. 3 would come within 100 feet of the remains.
- E. On August 14, 2003, agreed to request from Susan Sodenberg to include bronze marker for Veirs Mill (attached).
- F. No additional effort expected before TEP application.

III. Forest

- A. URS submitted NRI/FSD to M-NCPPC on June 19, 2003 (attached).
- B. Received M-NCPPC approval of NRI/FSD on July 25, 2003 (attached).
- C. Preliminary FCP submitted on September 3, 2003 (attached).
- D. Waiting on review comments on Preliminary FCP.

IV. Floodplain

- A. Held field walk with agencies on May 9, 2003 (Meeting summary attached).
- B. Submitted 100-year floodplain study to DPS on May 30, 2003 (attached).
- C. Received DPS study approval on July 3, 2003 (attached).
- D. No additional effort expected before TEP application.

V. SWM

- A. URS submitted SWM Concept application to DPS on June 24, 2003 (attached).
- B. DPS response received August 19, 2003 (attached).
- C. URS addressed DPS comments and submitted response on August 29, 2003. Infiltration trenches were added along sections of the trail at the request of DPS (attached).
- D. No additional effort expected before TEP application.

VI. Flora and Fauna

- A. DNR' Wildlife and Heritage Service: Letter dated February 18, 2002 determined that no Federal or State rare, threatened, or endangered plants or animals within SHA's MD 586 at Aspen Hill Road project site (attached). Since study area extended beyond Rock Creek Trail project limits, no species are thought to be affected by Rock Creek Trail project. DNR strongly encouraged

Board and County Council will need to act quickly so that the application can be completed and submitted on time.

PROJECT FUNDING AND COST

Cost Estimate

The preliminary cost estimate that depicts the construction and total costs for the Rock Creek Hiker-Biker Trail Bridge, and the funding allocation is \$5,844,124 (attached). Transportation Enhancement projects in Maryland are typically funded at 50 percent State/50 percent Local match. Based on discussions with representatives at SHA responsible with administering the Transportation Enhancement funding program, the cost of this project is significantly more than past selections. The maximum expected matching Transportation Enhancement funds would be \$2,000,000.00 for a bridge over a non-interstate roadway. The SHA representatives further noted that the applicant should be prepared to complete the project should a full match not be approved.

Schedule

The attached schedule depicts the anticipated timelines for this proposed Enhancement-funded project. The schedule is based on the assumption that an application for Transportation Enhancement funds will be submitted in November 2003 with funds being awarded in January 2004.

that it's guidelines on Forest Interior Dwelling Birds (FIDS) and other native forest plants and wildlife be followed.

- B. DNR's Environmental Review Unit: Letter dated January 18, 2002 determined that anadromous fish species are not present in Rock Creek drainage near the SHA's MD 586 at Aspen Hill Road project site (attached). Since study area extended beyond Rock Creek Trail project limits, no species are thought to be present within Rock Creek Trail project. DNR also stated that species in the tributaries to Rock Creek should be adequately protected by the Use I instream work prohibition period, sediment and erosion control methods, and other Best Management Practices typically used for protection of stream resources.
- C. The US Fish and Wildlife Service: Letter dated February 22, 2002 determined that no federally proposed or listed endangered or threatened species are known to exist within the SHA's MD 586 at Aspen Hill Road project site (attached). Since study area extended beyond Rock Creek Trail project limits, no species are thought to be present within Rock Creek Trail project.
- D. No additional effort expected before TEP application.

NEXT STEPS

The M-NCPPC is preparing an application for Transportation Enhancement grant funds to match local expenditures to design and construct the bridge. The grant application requires evidence that facility planning has been completed, including an approved preliminary Forest Conservation Plan, and that the County Council has approved design and construction funding for the project. The Maryland State Highway Administration (SHA) will set the due date for grant applications when the Congress approves funding for the renewed program. Since SHA expects to establish an October or November due date for these grant applications, the Planning

Board and County Council will need to act quickly so that the application can be completed and submitted on time.

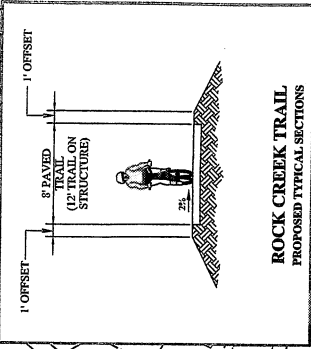
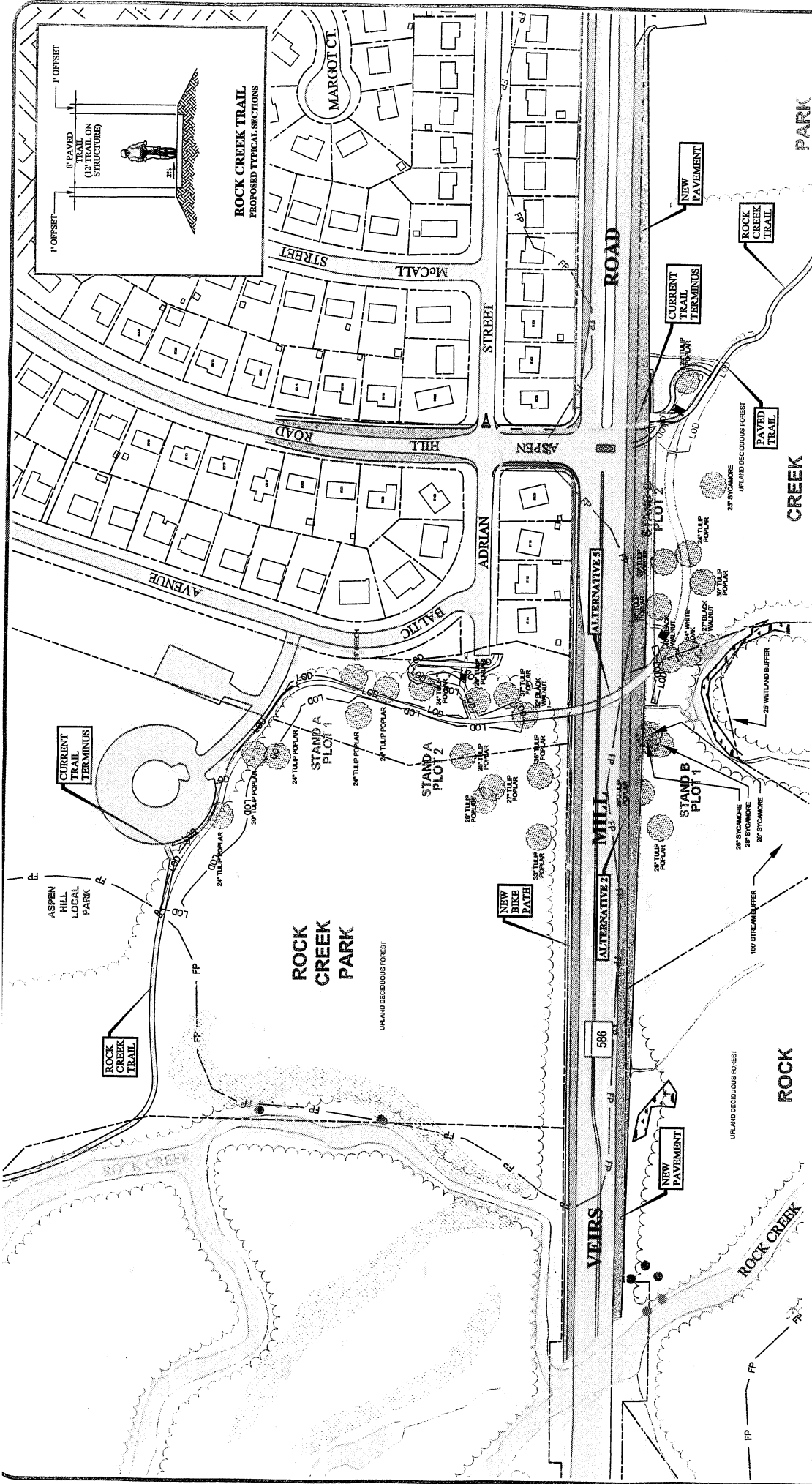
PROJECT FUNDING AND COST

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ROCK CREEK TRAIL BRIDGE
DRAFT - WORK-IN-PROGRESS

ALTERNATIVE 5

DATE: APRIL 2003
SCALE: AS NOTED

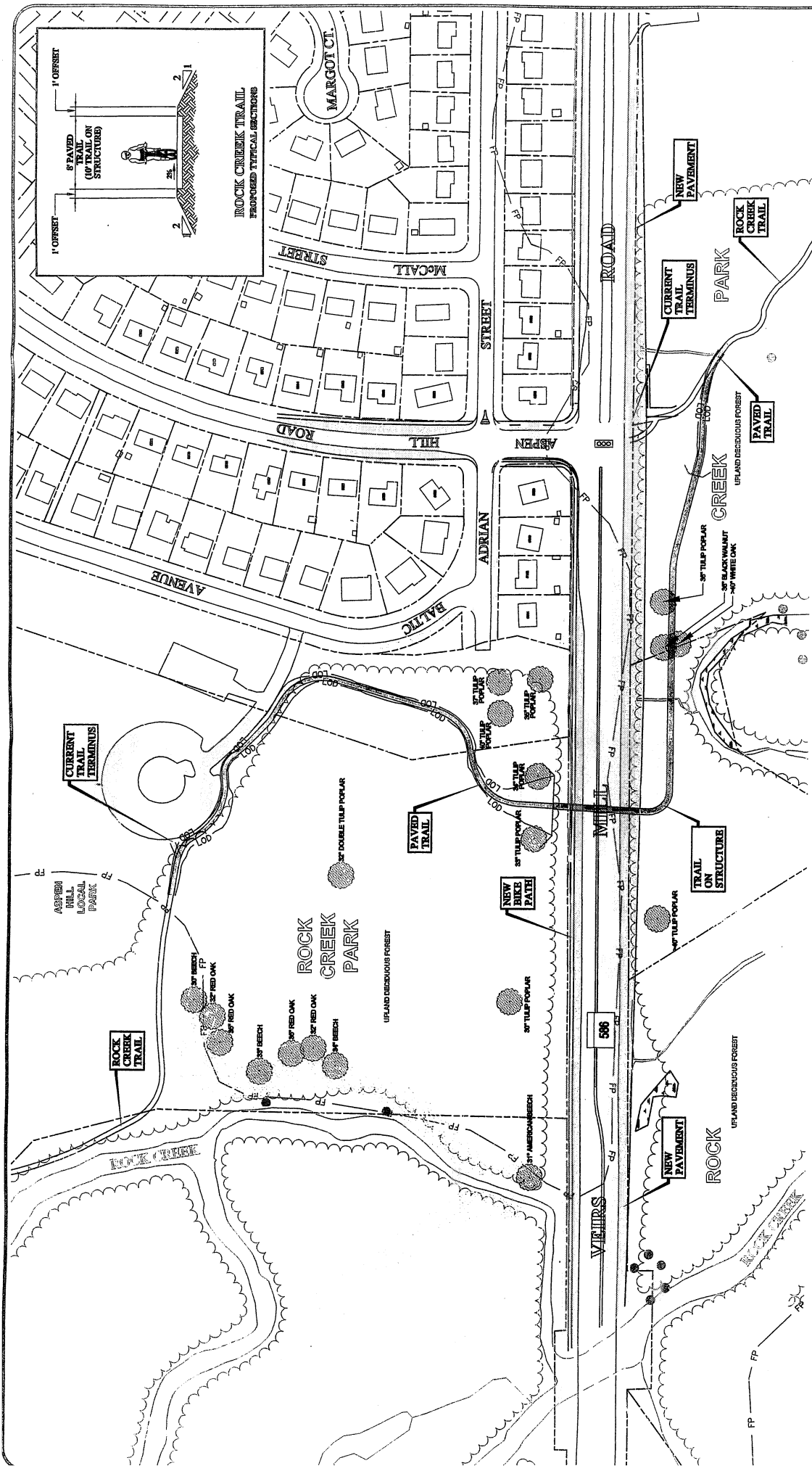
URS
Engineering & Construction
1 NORTH PARK DRIVE, SUITE 200
DENVER, COLORADO 80202
TELEPHONE: 303.752.7200

FIGURE: 1

SCALE IN FEET
0 75 150

LEGEND

- PROPERTY LINE
- PARK
- STREAM OR CREEK
- NATURAL WETLANDS
- ELECTRIC BORROWNY
- LIMIT OF DISTURBANCE
- SIGNIFICANT TREE
- TREE LINE
- MANHOLES/UTILITY LOCATION
- STEEP SLOPE AREAS
- CURRENT FOOTSTRAKE/BIKE ROUTE
- SEA PROPOSED BIKE PATH
- SEA INTERSECTION RECONSTRUCTION
- PROPOSED BIKE TRAIL



LEGEND

- PROPERTY LINE
- PARK
- STREAM OR CREEK
- POTENTIAL WETLANDS
- BLACKLAND SUBSIDARY
- LIMIT OF DISTURBANCE
- CURRENT RESERVATION/BIOTECH
- NEW PAVED BIKE PATH
- NEW INTERSECTION RECONSTRUCTION
- PROPOSED TRAIL
- PROPERTY LINE
- TRAIL LINE
- MARKER/SURVEY LOCATION
- OTHER SURVEY AREAS
- PROPERTY LINE
- STREAM OR CREEK
- POTENTIAL WETLANDS
- BLACKLAND SUBSIDARY
- LIMIT OF DISTURBANCE

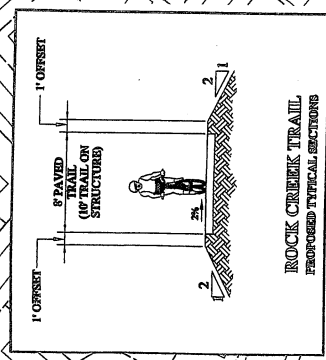
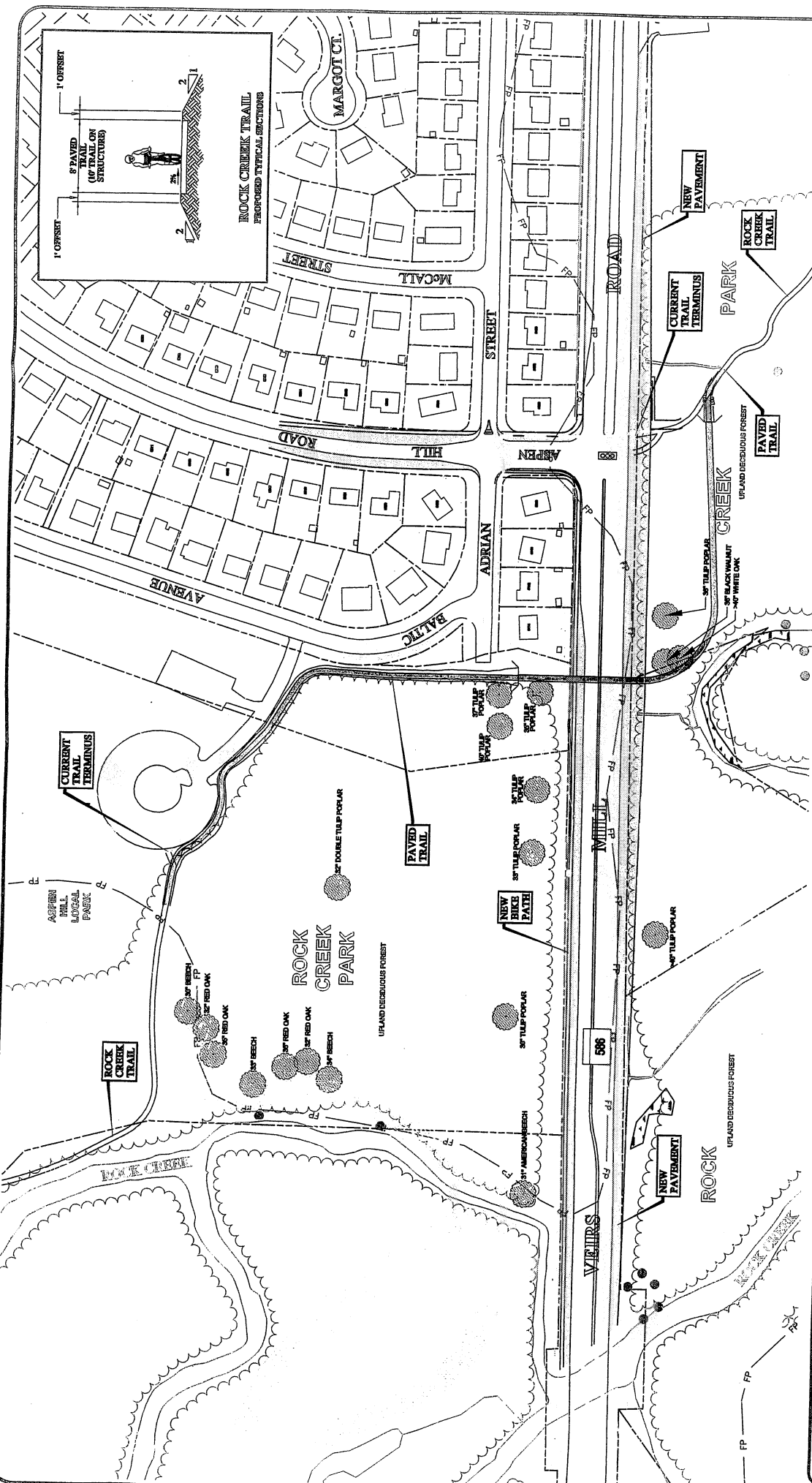


ROCK CREEK TRAIL BRIDGE
DRAFT WORK-IN-PROGRESS

ALTERNATIVE 2

URS
 ENGINEERING CONSULTANTS
 1400 17TH AVENUE, SUITE 200
 ASPEN, COLORADO 81611
 TELEPHONE 970-925-7272

DATE: APRIL 2003
 SCALE: AS NOTED
 SHEET: 6



ROCK CREEK TRAIL BRIDGE
DRIFT, WORK-IN-PROGRESS

ALTERNATIVE 4

URS
 Engineering & Construction
 10000 North Central Expressway, Suite 200
 Dallas, Texas 75243
 Telephone: 972-992-2200

DATE: APRIL 2003
 SCALE: AS NOTED
 FIGURE: 8



LEGEND

- PROPERTY LINE
- PARK
- STREAM OR CREEK
- POTENTIAL WETLAND
- FLOODPLAIN BOUNDARY
- FP - LIMIT OF DISTURBANCE
- SECTION TIES
- TRAIL LINE
- MANHOLE/UTILITY LOCATION
- STEEP SLOPE AREAS
- CURRENT PROPOSED ROUTE
- SEA PROPOSED ROAD PACE
- SEA INTERSECTION RECONSTRUCTION
- PROPOSED TRAIL