

**CIRCLE C HOMEOWNERS ASSOCIATION, INC.**  
THE CASTLE • 1111 WEST 11TH STREET • AUSTIN, TEXAS 78703 • (512) 480-9821

August 7, 2000

TO: City of Austin  
Parks and Recreation Department  
Parks Board, Land and Facilities Subcommittee

FROM: Susan Hoover, Board Member, Circle C Homeowners Association

This is a request for the renaming of Slaughter Creek Metropolitan Park to Circle C Metropolitan Park.

History: In the early 1980s, approximately 400 acres of land was donated to the City of Austin for parkland per agreements between the City of Austin and the developers with the formation of the four Circle C municipal utility districts. The park was named Circle C Metropolitan Park. The developers provided permanent black granite signage with this name on it. This signage remains in place today.

In 1991, the name was changed to Slaughter Creek Metropolitan Park. PARD subsequently installed one sign at the park entrance road with "Slaughter Creek Metropolitan Park" signage on it.

In 1993, the developers donated another 62 acres of land for the Veloway project. The signage provided by PARD says only "The Veloway."

There are a number of city maps that designate this park as the Circle C Park. Also, most of the population, including a sizeable soccer population (over 1600 children and their parents) refer to the park as Circle C Park. The feeling from many of the users of the park is that the park is commonly known as Circle C Park, that people seeking directions benefit from this name (rather than a more ambiguous Slaughter Creek Park).

It is the request of the Circle C Homeowners Association that the Slaughter Creek Park be renamed Circle C Metropolitan Park for convenience and geographical accuracy.

Further, in the April 23, 2000 settlement between the Circle C Homeowners Association and the City of Austin, (Item Number 15) states that the City will allow this proposal to come forward through the appropriate channels.

The Circle C Homeowners Association would be happy to pay for replacing the entrance sign to the park. We request that you approve our request.



CIRCLE C RANCH

# Barton Springs

## History of the Springs

*Barton Springs, to a child, appears as a jade and emerald ocean of fun.*



*In the springtime of our lives, we build memories that last a lifetime — memories of laughter, the cold water on delicate skin, and screams of enthusiastic joy as we go off the diving board "just one more time."*

Children have the opportunity to learn about the environment when they visit the springs. *The Splash! Into the Edwards Aquifer* exhibit takes visitors deep into a simulated aquifer through multi-media dis-

plays and interactive learning. On average, 32 million gallons of artesian aquifer water a day flow through Barton Springs, the fourth largest in Texas.

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## A Spring for All Seasons

*This is a rough concept — not to scale*

GRAPHIC DESIGN / PHOTOGRAPHY

509 SHADE ROAD WIMBERLEY, TX 78676 512/842-9979

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## Informational Banners

These informational banners could be used for Eliza Springs, Old Mill Springs, near the diving board at Barton Springs, and at the entrance to Barton Springs.

These waterproof banners could be attached to easy to install poles, fences or buildings. Approximately 3. ft. X 4ft.

These banners will require new writing based on previously done work. Some new graphics and photos may also be necessary. See budget for estimates. There will be a recommended word limit per banner

# Barton Springs

## Environmental Concerns

*Barton Springs, to a child, appears as a jade and emerald ocean of fun. In the springtime of our lives, we build memories that last a lifetime — memories of laughter, the cold*



*water on delicate skin, and screams of enthusiastic joy as we go off the diving board "just one more time."*

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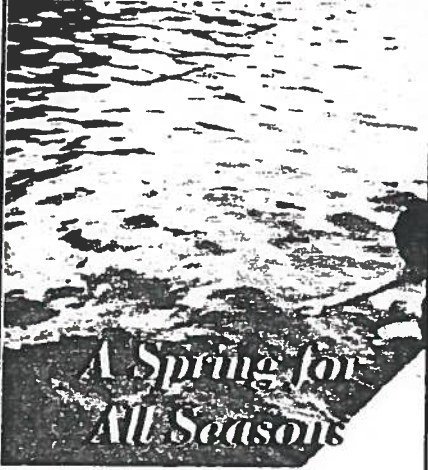
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## A Spring for All Seasons

## Barton Springs

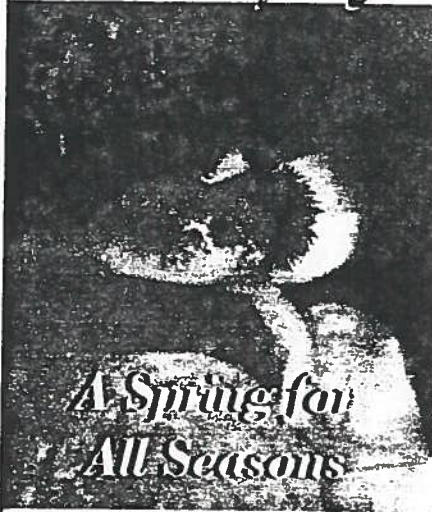


The *SPLASH!* into the Edwards Aquifer multi-media displays and interactive learning center take visitors deep into a simulated aquifer.

## Factual Banners

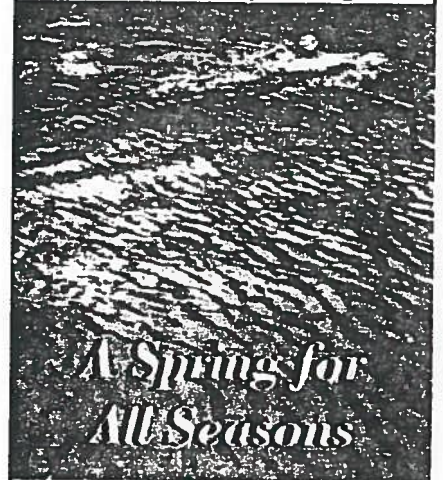
Each of the eight significant facts about the springs is also mentioned in the postcard booklets.

## Barton Springs



The Barton Springs salamander (*Eurycea sosorum*) was listed as a federally-protected endangered species in 1997.

## Barton Springs



Barton Springs is among the most vulnerable springs in Texas to pollution and the effects of urbanization.

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GRAPHIC DESIGN / PHOTOGRAPHY  
509 SHADE ROAD WIMBERLEY, TX 78676 512/842-9979  
AZADIAN@MINDSPRING.COM  
AUGUST 15, 2000

## **CREATIVE STRATEGY BRIEF**

**Client:** Robert Hansen—City of Austin

**Job:** **BARTON SPRINGS PROMOTION**

**SIGNS/DISPLAY METHOD & PUBLIC RELATIONS**

**COMMUNICATIONS OBJECTIVE:** An educational tool to highlight the natural beauty of Barton Springs and call attention to the endangered species (salamander) and other unique species, the importance of protecting the water quality of the springs, and to tie into the mission of the SPLASH Exhibit (public education on the source of the springs). To tell the story of Barton Springs, and call attention to the delicate ecological balance of the area.

**TARGET AUDIENCE:** Local users of pool and the hundreds of thousands of Texas, national and international visitors. Hundreds of classroom children that visit Barton Springs every day. Politicians, decision makers, and citizens who can help public awareness of the need to preserve its natural beauty.

**DESIRED CHANGE OF BEHAVIOR:** Increase knowledge of environmental concerns to protect the springs and Barton Springs Salamander. Increased appreciation and awareness for the unique qualities of Barton Springs.

**PRIMARY BENEFIT:** Give City of Austin recognition for protecting its natural resources at a critical time at the start the new millennium. Save Barton Springs for future generations.

**tone of signs:** Educational and fun with a scientific background.

**PERSONALITY OF SIGNS:** Beautiful, colorful, very visual with lots of current color photographs showing the Barton Springs in winter/spring 2000. Brief, clear, factual, yet clever, text that meets communication objective for visitors of all ages. Keep short and readable at a glance.

**WHAT YOU WANT THE AUDIENCE TO SAY WHEN THEY SEE YOUR SIGNS:**

Wow, What a wonderful natural wonder. It really needs to be protected for future generations. How can we help?

**OTHER IMPORTANT INFO:** Must be completed to meet Fish and Wildlife requirements.

**Schedule and Budget:** Exact schedule—To be determined—Target date: Oct. 2000. The Sign/Banner budget could be from 5K to 20K depending on the text requirements, number of banners, location of banners, and installation costs. The PR campaign budget could be from 1K to 2K or could be handled by the City PR department.

# *A Spring for All Seasons* Banner



This banner will hang temporarily on the main Barton Springs Pool Building.  
It is approximately 2.5 ft. x 7.5 ft. This design could also be used on a Capital Metro Bus.

*This is a rough concept — not to scale*

©AZADIAN



# Banners for Barton Springs

FACTUAL AND INFORMATIONAL



2.5 ft. X 5 ft. Banners— a set of eight different banners designed to coordinate the theme: *A Spring for all Seasons*. Each banner will have a significant fact about Barton Springs. The banners are waterproof 15 oz. vinyl, 600 DPI, and have a three-year warranty.

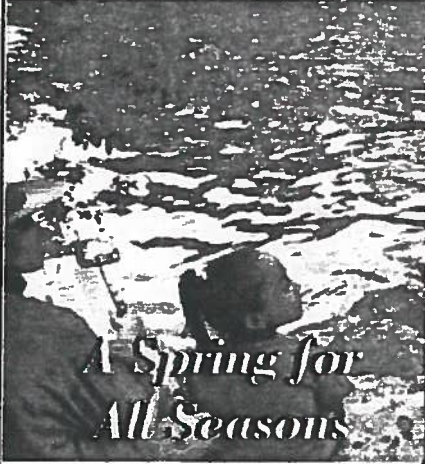
These banners will be installed on the existing light poles. Banners will be installed high enough to discourage vandalism yet be easily read by all visitors. Landscaping under the light pole is also suggested to enhance the banners. Kiosks will be removed.

New horizontal posts will be installed to hold the banners. These posts can easily be removed once the promotion is over or can be reused for new promotions.

*This is a rough concept—photo and signs not to scale*

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## Barton Springs



The *SPLASH!* into the Edwards Aquifer multi-media displays and interactive learning center take visitors deep into a simulated aquifer.

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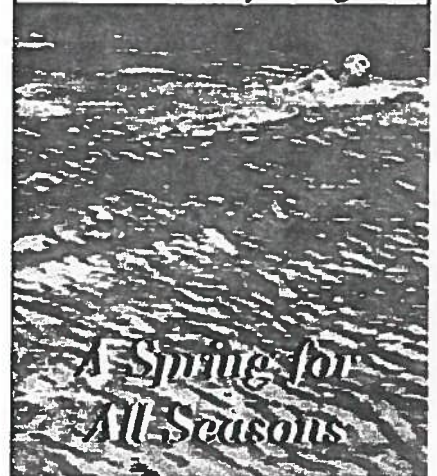
## 8 Factual Banners

Each of the eight significant facts about the springs are also in the postcard booklets. A targeted message that is easy to understand will meet the City's, the Park's and the Fish and Wildlife's objectives.

These banners could be completed by Oct. 1, 2000 ( if client budget and concept approvals are completed promptly) and be designed and produced in the allocated sign budget for Phase 2 Improvements.

These banners will be installed on the existing light pole at the entrance to the Springs and would require minimum installation costs (installation of aluminum horizontal poles only).

## Barton Springs



Barton Springs is among the most vulnerable springs in Texas to pollution and the effects of urbanization.

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Approximately 3.5 ft. X 4ft.

These banners will require new writing based on previously done work. Some new graphics and photos may also be necessary. See budget for estimates.

There will be a recommended word limit per banner.


Development of these banners would require a change order to Phase 2 Improvements to increase allocated budget for signs. Design, writing, and production may exceed the Oct.. 1 deadline.

Some of these banners may also require vertical and horizontal pole installation and engineering.

## *Barton Springs*


### *History of the Springs*

*Barton Springs, to a child, appears as a jade and emerald ocean of fun. In the springtime of our lives, we build memories that last a lifetime — memories of laughter, the cold water on delicate skin, and screams of enthusiastic joy as we go off the diving board "just one more time."*



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### *A Spring for All Seasons*

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## *Barton Springs*

### *Environmental Concerns*

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### *A Spring for All Seasons*

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## MEMORANDUM

To: Parks and Recreation Board

From: Jesus M. Olivares, Director  
Parks and Recreation Department

Date: August 22, 2000


Subject: Construction of Park Place Homes Boat dock at 5307 Tortuga Trail.  
File No. SP-00-2243DS.

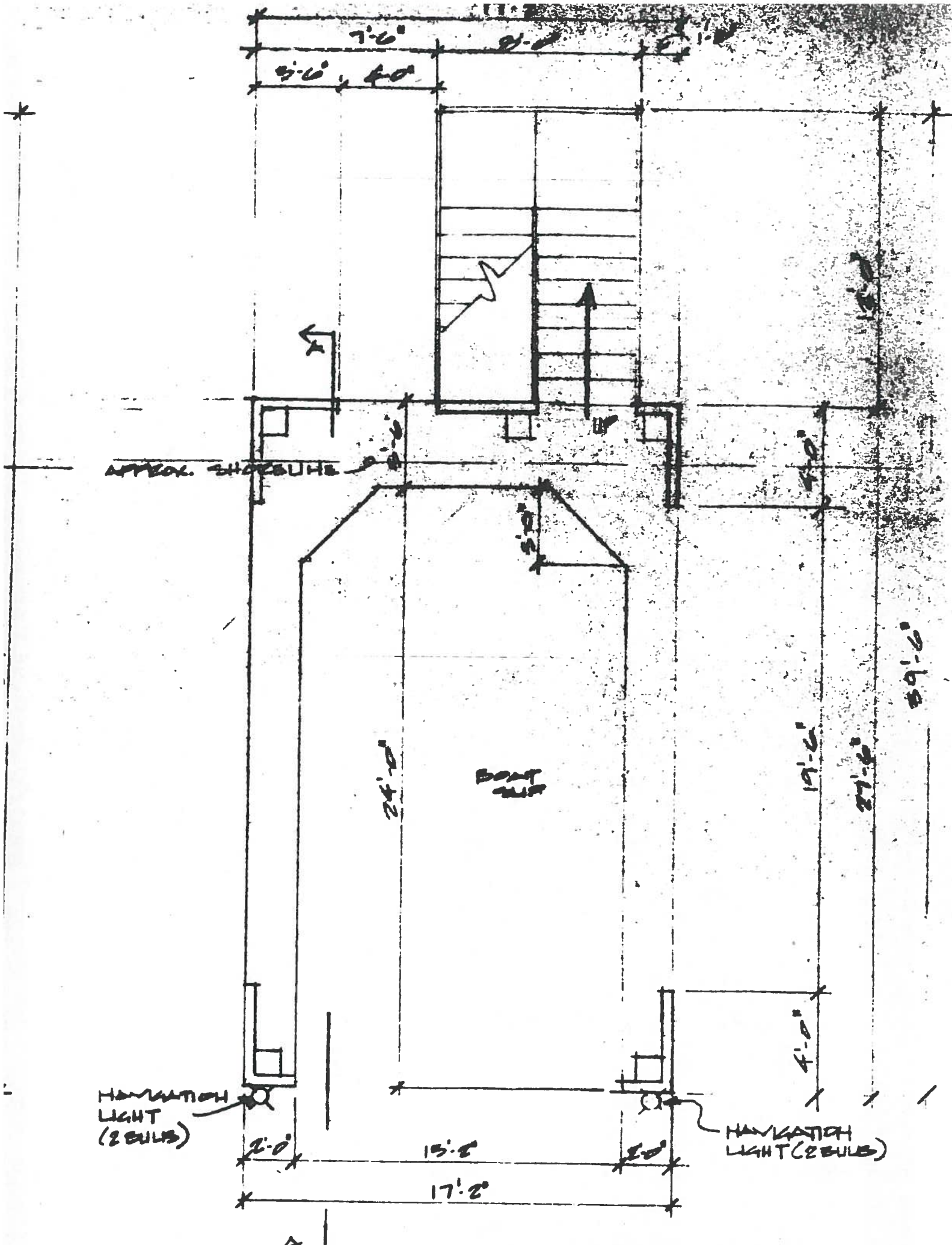
A request has been received from Richard Yoder of Park Place Homes to construct a boat dock at 5307 Tortuga Trail.

The Parks and Recreation Department (PARD) staff has reviewed plans for the proposed project and finds they meet the requirements of Article XIII, Section 25-2-1176, (Regulations for the Construction of Boat Docks) of the Land Development Code.

### RECOMMENDATION:

I recommend approval of the above request as detailed in the attached site plan.

  
Jesus M. Olivares, Director  
Parks and Recreation Department





# **INFORMATION PACKET**

## **HIGHLAND LAKES DAMS MODERNIZATION PROGRAM TOM MILLER DAM, MAINTENANCE DRIVEWAY**

### **LOWER COLORADO RIVER AUTHORITY**

**August 18, 2000**

## **Introduction**

The Lower Colorado River Authority is fully engaged in the Highland Lakes Dam Modernization Program to assure that the dams meet regulatory and public safety standards. In order to meet state regulatory safety requirements, Tom Miller Dam (Lake Austin), owned by the City of Austin and leased for operation to the Lower Colorado River Authority, is scheduled for structural improvements and maintenance during 2001. As part of the modernization process, the Lower Colorado River Authority is proposing to construct a maintenance driveway from Red Bud Trail (Figure 1). The proposed driveway would provide authorized maintenance access to the downstream apron of the dam. General specifications for the driveway include the following:

- The improvements will consist of a 16-foot wide concrete private driveway on undesignated parklands (Figure 2).
- The driveway will be constructed by LCRA and will become a City of Austin owned improvement.
- LCRA will provide ongoing maintenance of the driveway.
- A Parkland Use Agreement will be necessary for a temporary construction easement during driveway construction and dam repairs.

The driveway is necessary to complete regulatory required improvements and structural restoration, conduct preventative maintenance, and improve emergency response.

## **Project Need And Justification**

Improvements to the dam are needed to meet current regulatory requirements [Texas Natural Resources Conservation Commission (TNRCC) Chapter 29 Dams and Reservoirs, Subchapter B. Design and Evaluation of Dams, Section 299.14. Hydrologic Criteria for Dams, defining flood event]. The dam has failed two times in the past 100 years causing substantial damage and loss of life. In its current condition, the dam does not meet the public safety standards of the TNRCC that require large high hazard dams, such as Tom Miller Dam, to be able to safely pass the maximum flood event.

The dam modernization project will include a field investigation of the site and analysis of the existing structure. Improvements will bring the dam into compliance with modern design standards and regulatory requirements. The driveway will provide a means of moving equipment into the area for the field investigation and very limited construction activity.

The driveway is also needed to perform preventative maintenance on the dam including removing vegetation, repairing damaged concrete, performing periodic inspections, and cleaning foundation drains. The foundation drain system was integral to the design of the 1938 dam reconstruction. The ability to effectively maintain the drain system is imperative to structural integrity of the dam during extreme flood conditions. Blocked drains could increase uplift under the dam potentially resulting in structural failure.

The proposed road will also provide emergency access to the downstream side of the dam. The present configuration of the dam precludes vehicular access to persons who may be injured while performing maintenance on the dam. In addition, there are very limited means of rapidly responding to an emergency event such as an accidental



hazardous material release from the power generation turbines. Such a release could potentially impact Town Lake and associated critical environmental features adjacent to Barton Springs.

In addition to public safety concerns downstream, the dam is crucial to the operation of the City of Austin water supply. A significant portion of the City's water supply is drawn directly from Lake Austin. Failure of the dam would likely result in a disruption of the City's water supply services for an extended period of time.

### **Project Description and Schedule**

The proposed driveway, approximately 800' in length, would be constructed of reinforced concrete pavement, anchored to withstand the hydraulic forces of a significant flood event. Concrete was selected to minimize non-point source pollution concerns. Concrete driveway thickness will vary up to 12" above existing ground surface. The driveway would be 12 feet wide to accommodate one-way authorized access and would be crowned for drainage. Including shoulders, the footprint of the driveway would be approximately 16 feet wide. See Figure 3 for driveway cross-section.

The channel crossing directly off of Red Bud Trail will require a pre-cast concrete span structure (Figure 4). This type of structure includes wing walls to minimize the footprint of the fill area at the crossing, and would still allow small water craft to pass beneath. The driveway off of the channel to the dam apron will traverse a granite and limestone boulder island formed by arranged structural remains of a previous dam failure. Large boulders in the way of the driveway will be relocated or diminished on site. Low areas will be filled with material to be taken from within construction site, as allowed by state and city permits.

Three routes for this driveway were evaluated (two of which are mapped on Figure 2). A western route, hugging the steep limestone cliffs, traversing wetlands and springs, potentially affecting many mature trees and golden-cheeked warbler habitat, was immediately rejected. A secondary route, shown as "Alternative Route (rejected)" on the attached figure, was then evaluated; however, this route still had many wetlands, tree preservation, and potential golden-cheeked warbler impacts. The preferred route, identified as "Proposed Driveway" on the attached figure, represents the best alternative to avoid wetlands, tree damage, and golden-cheeked warbler nesting habitat. Driveway will terminate at the existing dam apron allowing sufficient authorized access for limited equipment and personnel. Photos of the proposed route are included in the Appendix.

Access to the undesignated parkland for recreation (bank and wade fishing, small watercraft) will not be changed from the current conditions. A chain-link fence, padlocked gate, and guardrails will be installed at the driveway juncture with Red Bud Trail to prevent unauthorized access to the dam.

LCRA would propose that construction of the driveway begin in December 2000 in order to conclude driveway construction activities within regulatory timeframes imposed by TNRCC and USFWS (prior to bird season, March 1, 2001). In addition to the City of Austin processes, the following consultations and permits are in progress and are expected to be approved prior to December 1, 2000:

U.S. Army Corps of Engineers	wetlands, Nationwide permit
Balcones Canyonlands Conservation Plan	infrastructure permit
Texas Parks and Wildlife Department	sand, gravel, and marl
General Land Office	river bed easement
Texas Historical Commission	cultural & archaeological
FEMA	floodplain
Texas Natural Resources Conservation Comm.	non-point pollution

### **Short Term Effects Of Construction**

Short-term effects during construction will be minimal. The construction of the driveway will have no impact to City of Austin Parks Department functions since the area involved is undeveloped undesignated parkland. Recreational users of the area may temporarily have no access to the Red Bud Trail parking area, however access to the site for fishing and watercraft will remain similar to existing access.

Disturbance of the areas within the Parkland Use Agreement will include construction of the driveway and associated gating. The contractor will be required to stay within the 16' driveway boundaries at all times. There will be no temporary construction laydown areas in the undesignated parkland.

Appropriate non-point source pollution control measures will be in place prior to and throughout construction. The proposed alignment and driveway width were specifically designed to minimize environmental impacts to existing natural resources:

- one qualifying preservation tree, located during the tree survey conducted according to City of Austin Tree Preservation Standards (tree is lightning damaged and dead) (Figure 5)
- 0.2 ac wetland at the dam apron, mitigated through the U. S. Army Corps of Engineers' notification process (Wetlands Mapping Report available upon request)
- Zone 1 golden-cheeked warbler habitat by Balcones Canyonlands Conservation Plan maps, coordinated through the BCCP Infrastructure permitting process
- water flow, temporarily disrupted when coffer dams are in place then restored once culverts and spans are properly installed
- siltation (instream disturbances) and flow reduction, temporarily limiting aquatic life (fishes and aquatic insects)
- springs and karst, not affected
- cultural concerns, none



## **Long Term Effects of Construction**

The only long term effects to the undesignated parkland will be minimal and limited to the permanent driveway, approximately 800' long and 16' wide:

- loss of shrubbery and herbaceous vegetation plus one "protected" tree, however canopy over the roadway will remain closed and functional for golden-cheeked warbler habitat as specified by the U.S. Fish and Wildlife Service and Balcones Canyonlands Conservation Plan guidelines (allows 16' corridor width, minimizes effects on rare birds)
- limited access and parking off Red Bud Trail (may periodically lose some of parking area for driveway access during maintenance activities), however recreational use on the undesignated parkland (fishing and watercraft) can continue in the existing manner after construction

Positive long term effects include the increased probability that the Tom Miller Dam will be structurally secure, well-maintained, and easily accessible in case of an emergency.

## **Restoration Plan**

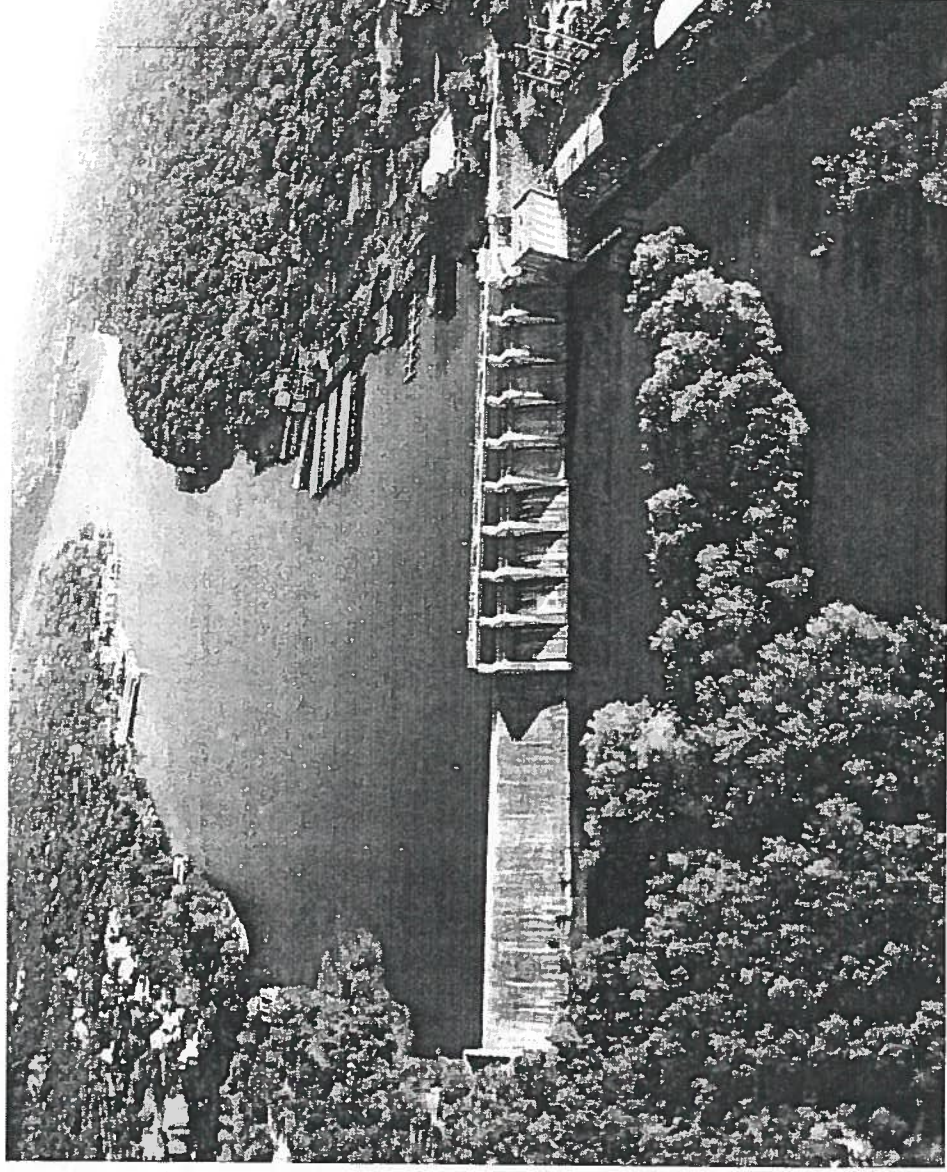
As the driveway footprint during construction will be limited to the permanent footprint area, no restoration is planned. Non-point source pollution controls will remain in place until construction is complete and controls are determined by non-point source professionals to be no longer necessary.

## **Figures and Appendix**

- Figure 1. Tom Miller Dam Maintenance Driveway, proposed route drawing
- Figure 2. Tom Miller Dam Maintenance Driveway, routes imposed on aerial
- Figure 3. Tom Miller Dam Maintenance Driveway, cross section
- Figure 4. Tom Miller Dam Maintenance Driveway, access span cross section
- Figure 5. Tom Miller Dam Maintenance Driveway, tree survey map and notes
- Appendix. Tom Miller Dam Maintenance Driveway, photos of proposed route

# TOM MILLER DAM MODERNIZATION

## Maintenance Driveway



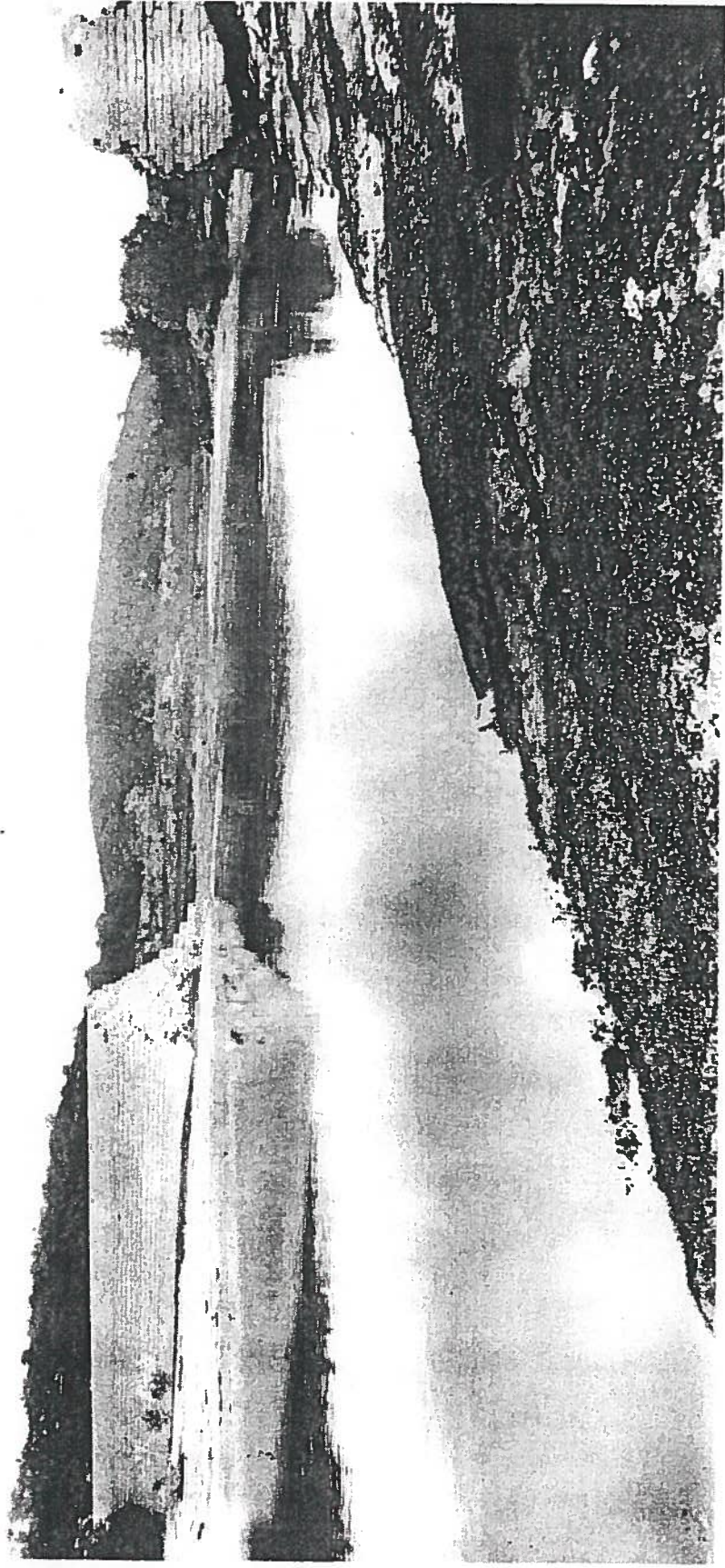


# THE DAM MODERNIZATION PROGRAM

- ❖ Upgrade the six Highland Lakes Dams
  - Buchanan: Lake Buchanan - in construction
  - Inks: Inks Lake - in construction
  - Alvin Wirtz: Lake LBJ - completed
  - Max Starcke: Lake Marble Falls - in construction
  - Mansfield: Lake Travis - developing O&M program
  - Tom Miller: Lake Austin - design phase
- ❖ Meet State Regulatory Safety Standards (pass the “PMF”)

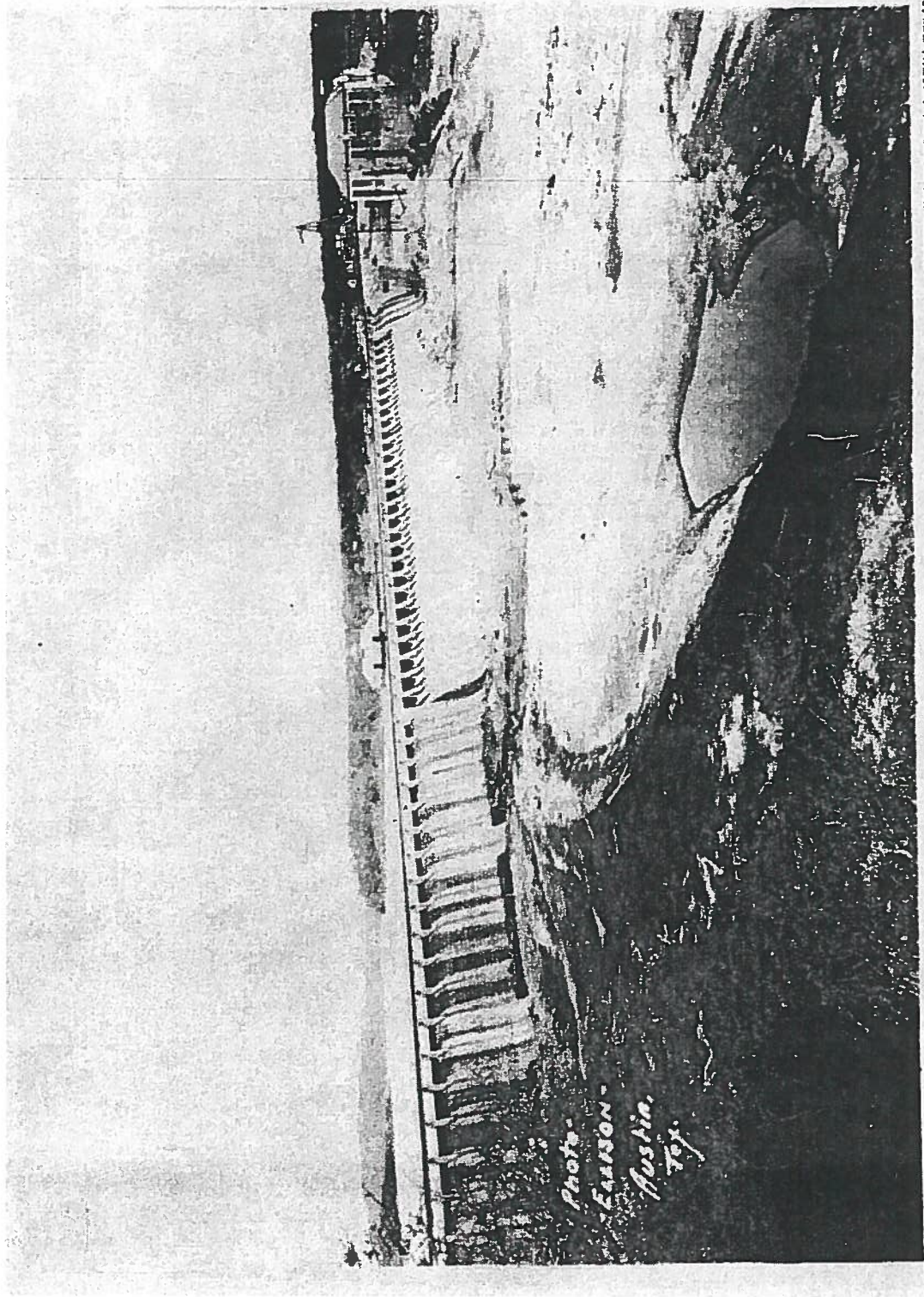
# HISTORY OF THE DAM

- “Austin Dam” constructed by the city in 1893
  - At that time it was the largest dam in the world on a flowing river
- Failure of 1900
- Reconstruction of 1912
- Failure of 1915
- Flood of 1937<sup>5</sup>
- Leased and reconstructed by LCRA (renamed “Tom Miller Dam”) in 1938
- LCRA has served as caretaker from 1938 – present
- Modernization Program of 2000



1900 Failure

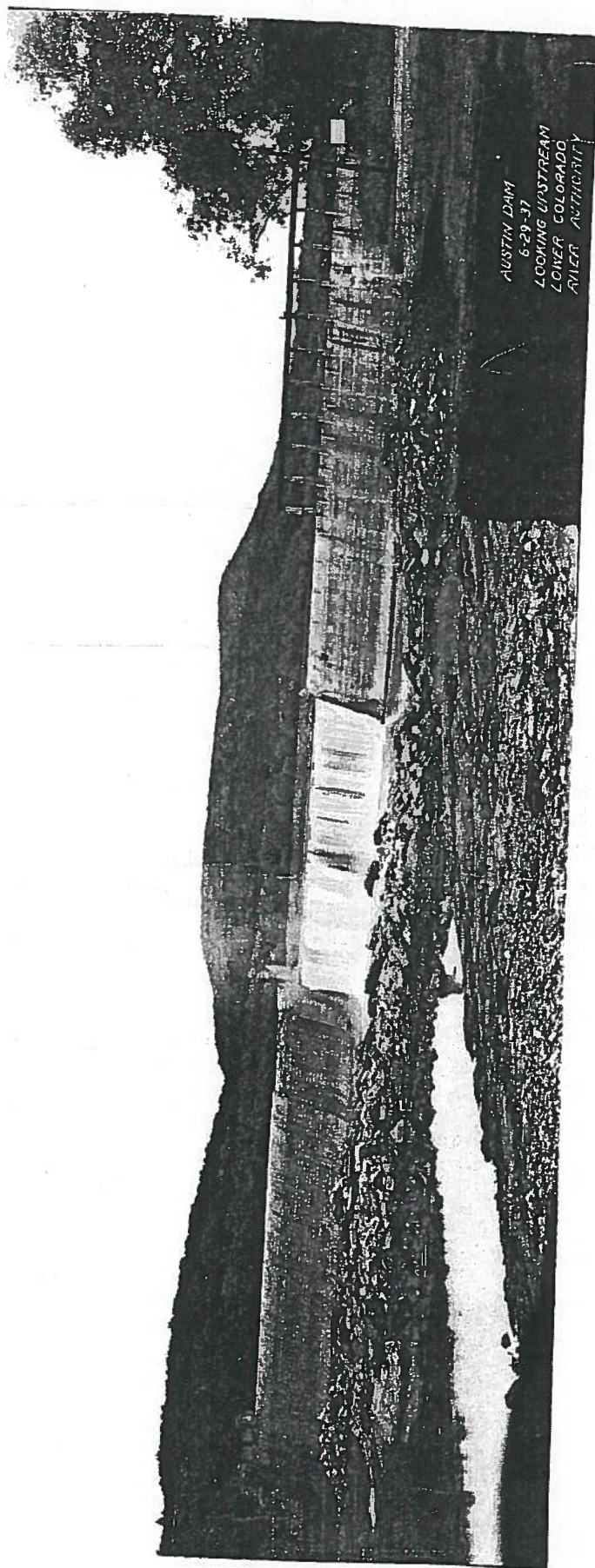




*Photo-  
"ELLISON"  
Austin,  
Tex.*

PHOTO BY ELLISON AUSTIN, TEXAS

# 1912 Reconstruction



AUSTIN DAM  
6-29-37  
LOOKING UPSTREAM  
LOWER COLORADO  
RIVER AUTHORITY

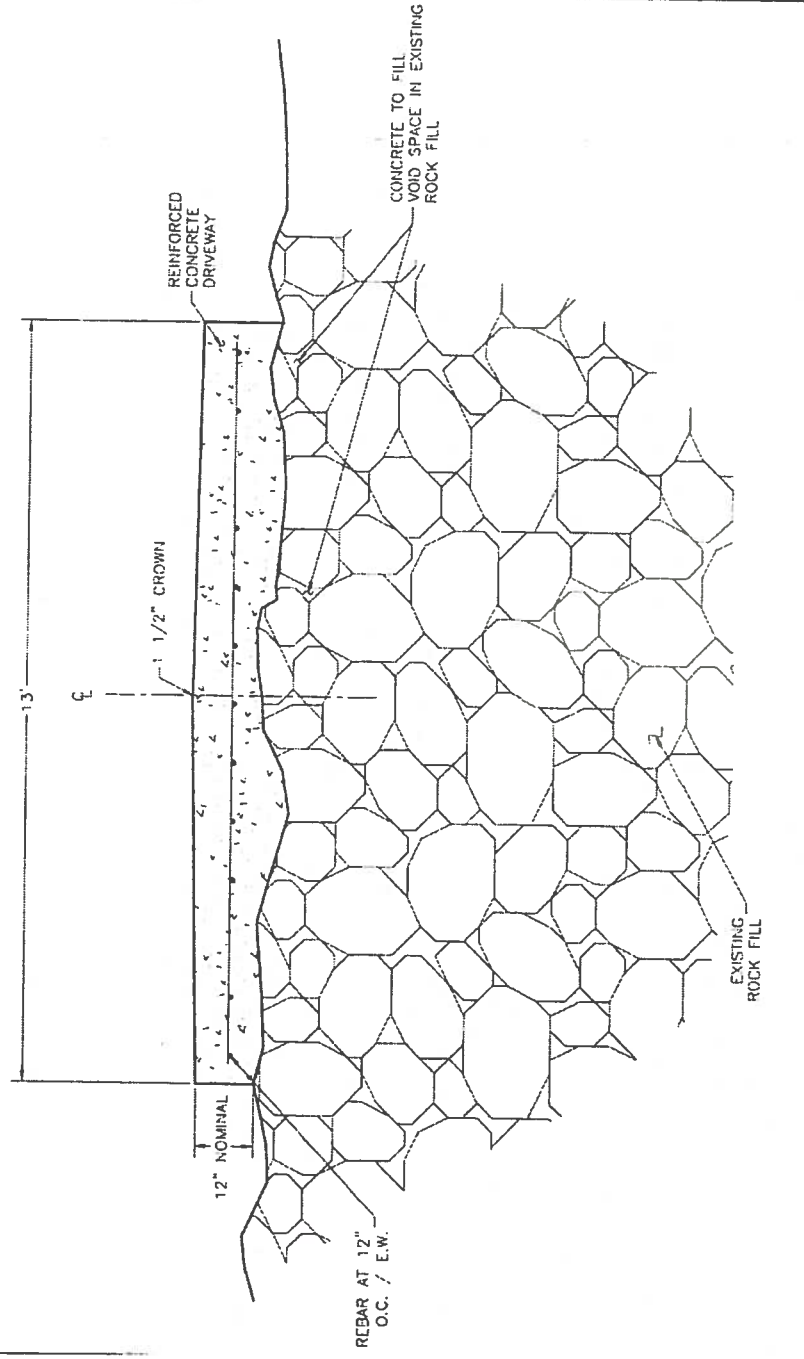
## After 1915 Failure and 1937 Flood

# WHY IS A MAINTENANCE DRIVEWAY NEEDED?

- Perform necessary inspections and preventative maintenance on dam
- Construct improvements to the dam to comply with regulatory requirements and modern design standards
- Provide emergency access and spill response
- Protect the City of Austin's water supply
  - 85% from Lake Austin
- Protect Life and Property



# PROPOSED DRIVEWAY



800 ft. long, 13 ft wide, concrete driveway in 16 ft corridor

# PROPOSED DRIVEWAY cont'd.

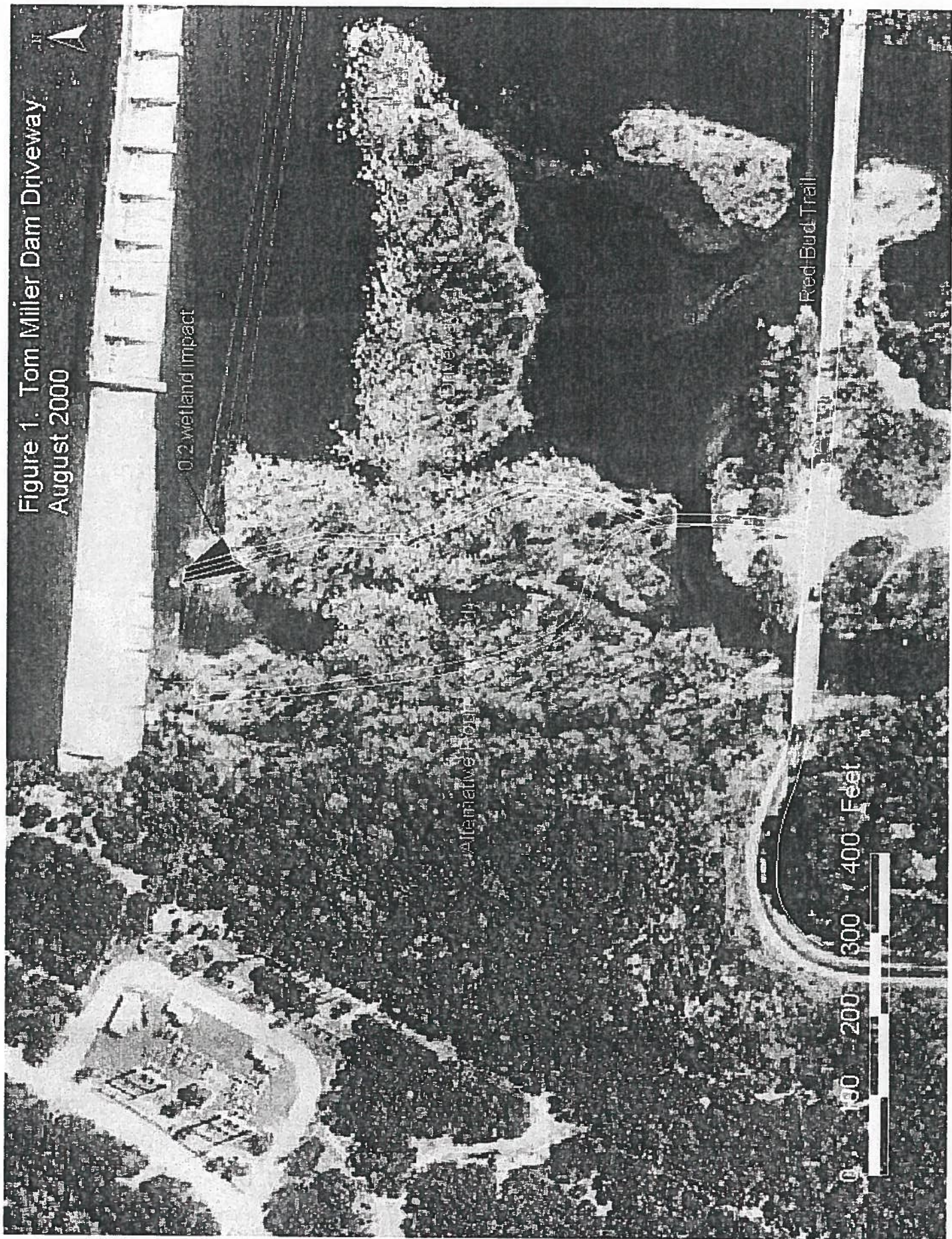
- Fenced to prevent public access
- LCRA will construct improvements for the City
- LCRA to provide continued maintenance
- Undesignated Parkland
- Parkland Use Agreement
- Complete Construction by March 2001, within TNRCC and USFWS Regulatory Timeframes

# ROUTE SELECTION

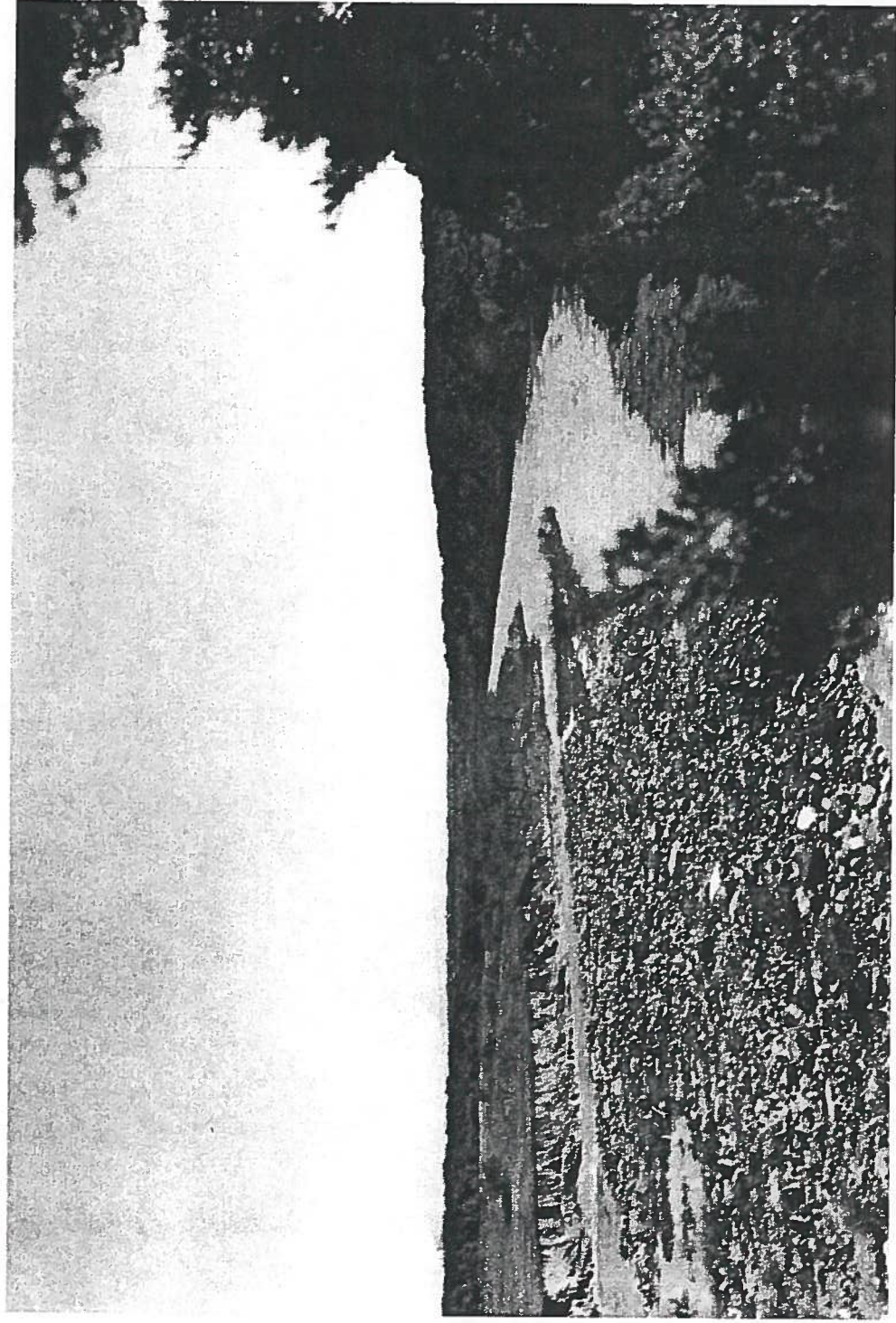
- Three routes examined (see following slide for reference)
- Proposed Route
  - Minimize wetland disruption
  - Avoid damage to protected trees
  - Protect endangered species habitat (golden-cheeked warbler)
- Does not change current access to area



Figure 1. Tom Miller Dam Driveway  
August 2000







1938 Downstream Rubble

# PERMITTING PROGRESS

<u>AGENCY</u>	<u>PERMIT</u>	<u>STATUS</u>
U.S. ACE	Nationwide	Waiting approval
BCCP	Infrastructure	Waiting approval
TPWD	Sand, Gravel, Marl	Waiting approval
Texas GLO	River Bed Easement	Preparing application
THC	Cultural and Archaeological	Complete
EPA	SWP3 (non-point pollution)	Preparing application
TNRCC	Water Pollution Abatement	Preparing application
COA	Site Plan Review	Preparing application

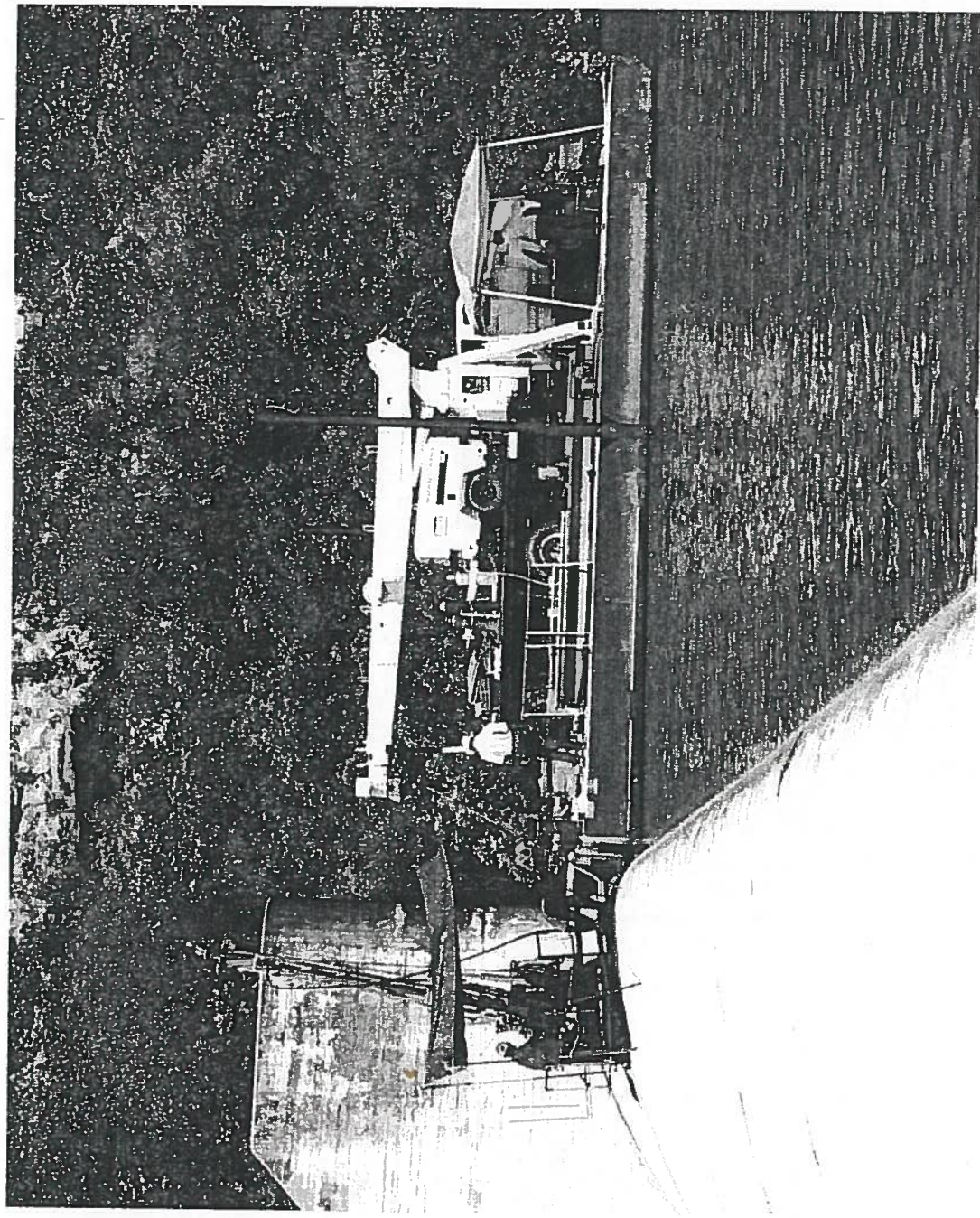


# ENVIRONMENTAL PROTECTION DURING CONSTRUCTION

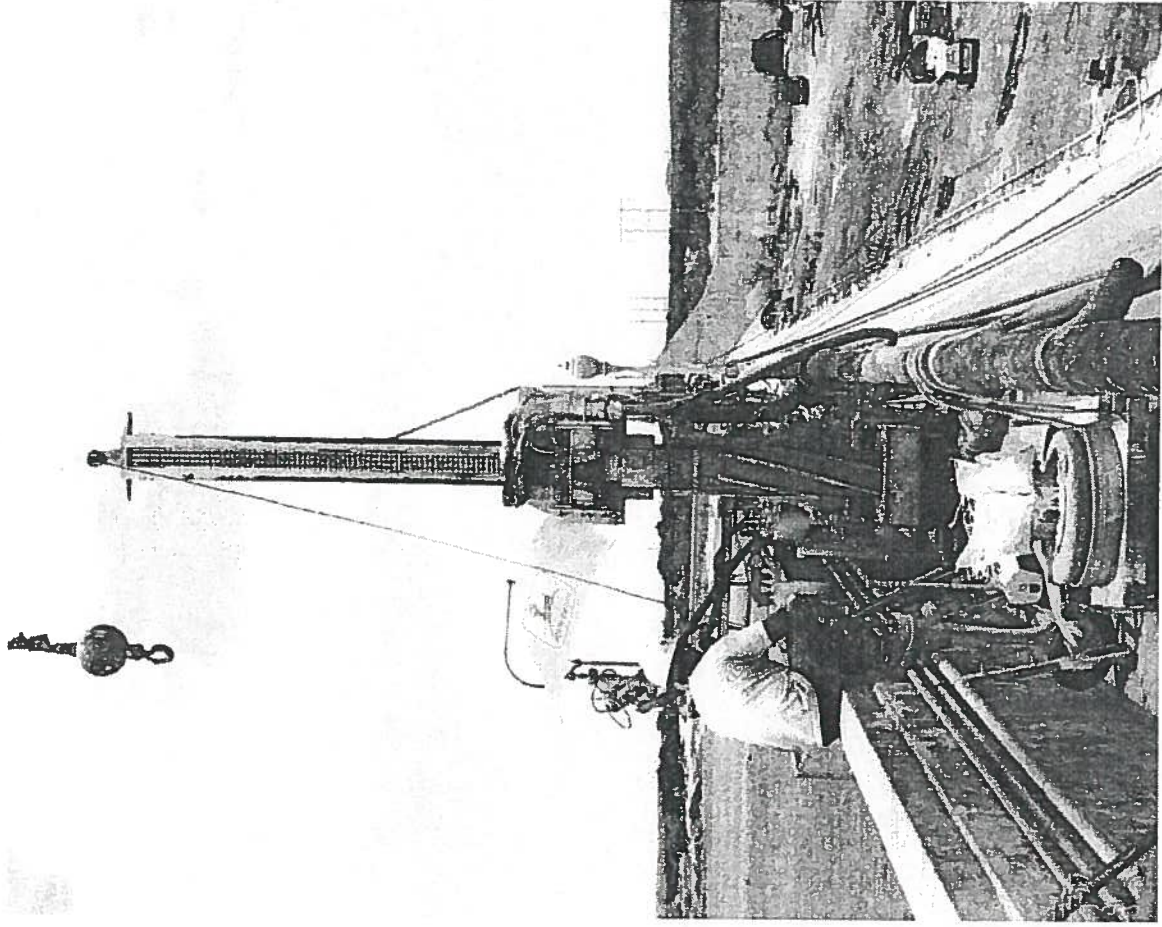
- Discharge containment
- Spill Prevention
- Storm Water Pollution Prevention
- Environmental controls for construction equipment
- Control of noise and dust
- Management and disposal of solid waste and debris
- Seeding and landscaping of disturbed areas with native species

# ENVIRONMENTAL PROTECTION DURING CONSTRUCTION cont'd.

- Equipment hydro-cleaned before moved on site
- Vegetable based oils in drill rigs
- Scheduled maintenance performed off site
- Fueling done off site (allow 5 gal. on site)
- Hydraulic hoses wrapped



# Exploratory Program



Sample Equipment



## SUMMARY:

- ❖ LCRA has cared for the City's dam for 62 years
- ❖ Maintenance driveway will allow LCRA to:
  - Upgrade dam to meet current regulatory requirements and design standards
  - Maintain the dam so it provides service to the City of Austin well into the future



May 17, 2000

TO: Toan T. Nguyen P.E., Ph.D. City Of Austin Senior Engineer  
FROM: Gregor Forbes, LCRA - Sr. Program Manager  
SUBJECT: Dam Modernization - Tom Miller Dam, Access Road

---

The attached documents indicate the proposed access road to the right abutment of Tom Miller Dam and are being provided for your review. We respectfully request that upon the completion of your review, that a meeting be convened with your self and LCRA Dam Modernization staff to discuss your comments and to determine the possibilities of organizing an additional meeting with other entities within the City of Austin. The purpose of the meeting would be to discuss the installation of an access road by the City for use by the LCRA in maintaining the Dam.

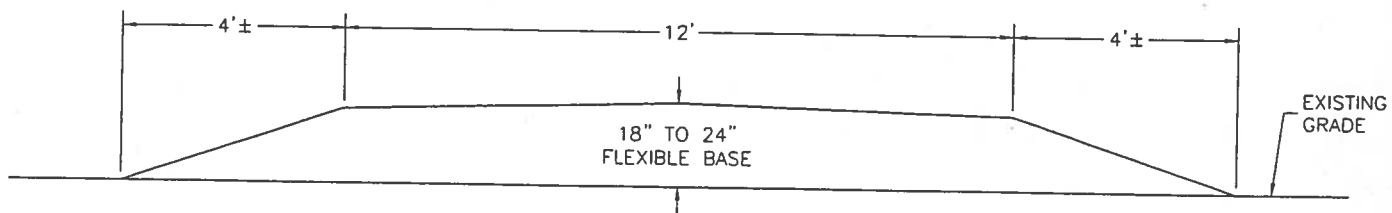
Access to the Dam from the down stream side (Redbud Trail Road) is none existent and with out the access posses a problem for LCRA crews when trying to facilitate needed maintenance. In most cases maintenance procedures require the use of equipment which weigh greater than what we could expect an employee to carry out to his work area. Vehicle access would certainly help the overall process as well as eliminating liability concerns.

Please call with any questions or comments. I can be reached at 473-3200 extension 2697.

Best Regards

Gregor Forbes, LCRA  
Sr. Program Manger

Cc: File



N.T.S.



**FREESE • NICHOLS**  
 6200 La Palma • Suite 210  
 Austin, Texas 78752 •  
 512-451-7955 FAX-512-451-7956

LOWER COLORADO RIVER AUTHORITY

**TOM MILLER DAM**

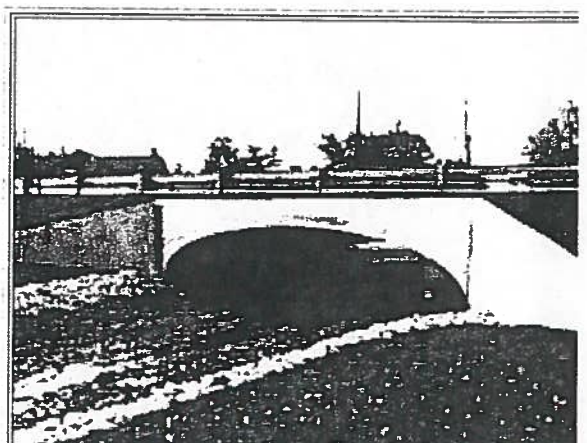
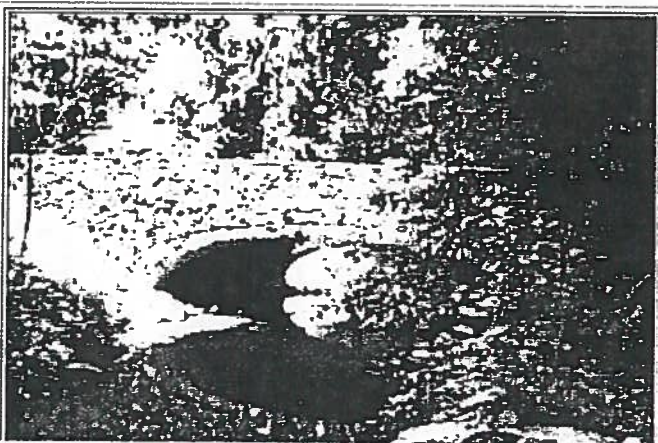
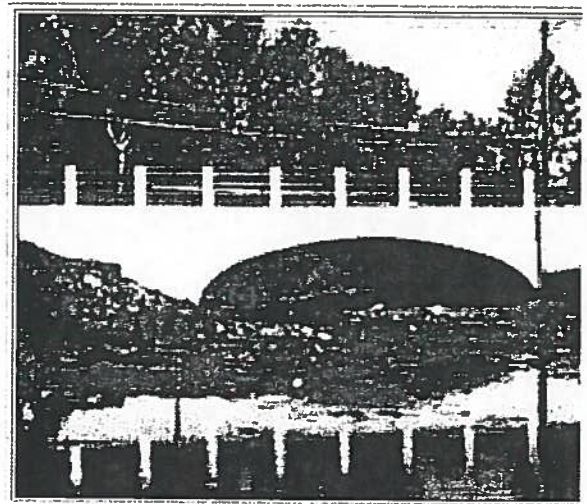
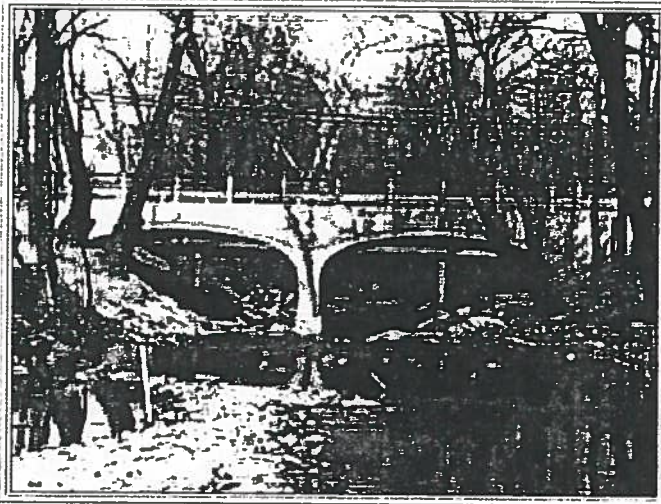
PROPOSED ACCESS ROAD

**TYPICAL SECTION**

F&N JOB NO.	LCR 00133
FILE	RD_X-SEC
DATE	MARCH 2000
DESIGNED	CJL
DRAWN	NO
CHECKED	CJL

# **CONSPAN** BRIDGE SYSTEMS

ROADWAY   SPECIAL   CHANNEL





Engineer's Estimate - \$ 33,250.00

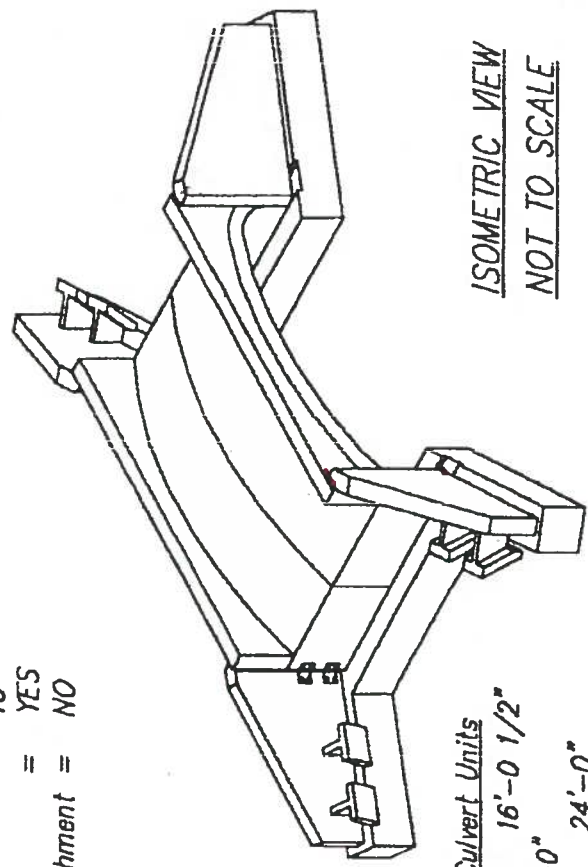
Includes: Units, Wingwalls, Headwalls, Joint Sealant  
Freight on Board - Delivered to Job Site

Precast Concrete Headwall (Typical)

Height = 10"  
(above unit at Crown)  
Thickness = 10"  
Attached = YES  
Guardrail Attachment = NO

Precast Concrete Wingwall (Typical)

Length = 13'-0"  
Thickness = 10"  
Flat Length = 1'-0"  
Height = 9'-2"  
Short Height = 4'-7"  
No. of Anchors = 2  
Anchor Type = B  
Wingwall Angle = 45  
Footing Height = Y  
Footing Width = X



Precast Concrete Culvert Units

Length = 16'-0 1/2"  
2 Units @ 8'-0"  
Span = 24'-0"  
Rise = 8'-0"  
Width of Joint = 1/2"  
No. of Cells = 1  
Footing Height = Y  
Footing Width = X

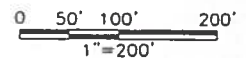
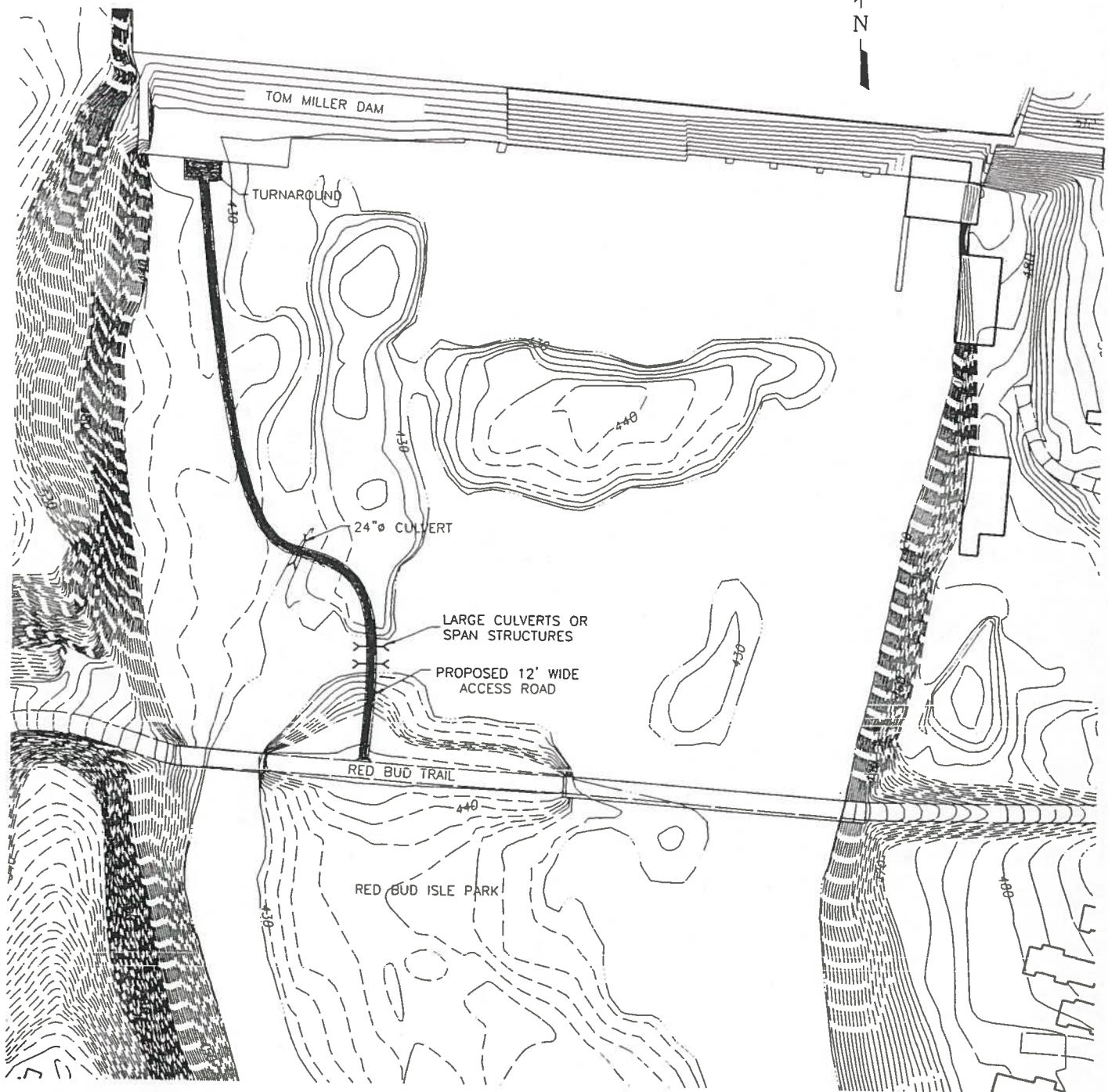
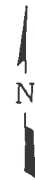
ISOMETRIC VIEW  
NOT TO SCALE

\* Foundations Cast in Place By Other

Lake Austin, TX



# LAKE AUSTIN



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LOWER COLORADO RIVER AUTHORITY

## TOM MILLER DAM

### PROPOSED ACCESS ROAD

F&N JOB NO.	LCP 00133
FILE	ACCESS_RD
DATE	MARCH 2000
DESIGNED	CJL
DRAWN	NO
CHECKED	CJL

Tree Class List

common_name	class	common_name	class	common_name	class	common_name	class
Ash, Texas	1	Buckeye, Carolina	2	Anagua	3	Arborvitae	4
Baldcypress	1	Buckeye, Mexican	2	Ash, Arizona	3	Bois D'Arc	4
Blackhaw, Rusty	1	Buckeye, Red	2	Ash, Green	3	Boxelder	4
Elm, American	1	Buckeye, Texas	2	Cedar, Deodar	3	Catalpa	4
Elm, Cedar	1	Cherry, Escarpment Black	2	Cypress, Arizona	3	Chinaberry	4
Eve's Necklace	1	Cherry-Laurel, Carolina	2	Desert-Willow	3	Cottonwood, Eastern	4
Holly, Possumhaw	1	Crapemyrtle	2	Huisache	3	Elm, Siberian	4
Holly, Yaupon	1	Dogwood, Roughleaf	2	Juniper ("cedar")	3	Hackberry	4
Madrone, Texas	1	Elm, Chinese	2	Locust, Honey	3	Locust, Black	4
Maple, Bigtooth	1	Golden Rain Tree	2	Loquat	3	Maple, Silver	4
Mountain Laurel	1	Goldenball Lead Tree	2	Maple, Red	3	Mimosa	4
Oak, Blackjack	1	Gum Bumellia	2	Mesquite, Honey	3	Mulberry	4
Oak, Bur	1	Magnolia, Saucer	2	Mulberry, Paper	3	Parasol Tree, Chinese	4
Oak, Chinquapin	1	Magnolia, Southern	2	Pine, Loblolly	3	Retama	4
Oak, Durand	1	Peach, Flowering	2	Tallowtree, Chinese	3	Sweetgum	4
Oak, Lacey	1	Pear, Bradford	2	Vitex	3	Tree-of-Heaven	4
Oak, Live	1	Persimmon, Common	2			Willow	4
Oak, Plateau Live	1	Pine, Afghanistan	2				
Oak, Post	1	Pine, Japanese Black	2				
Oak, Shin	1	Pistashe, Chinese	2				
Oak, Shumard Red	1	Pistashe, Texas	2				
Oak, Texas Red	1	Redbud, Texas	2				
Pecan	1	Smoke Tree, American	2				
Persimmon, Texas	1	Soapberry, Western	2				
Walnut, Arizona	1	Sumac, Flameleaf	2				
Walnut, Eastern	1	Sycamore, American	2				
		Walnut, Little	2				



# **BARTON SPRINGS POOL ALGAE CONTROL PROGRAM**

## **IMPLEMENTATION PLAN**

This Implementation Plan identifies activities associated with the refinement and implementation of the Preliminary Plan for an Algae Control Program at Barton Springs Pool. It consists of nine activities, which are described below.

### **IMPLEMENTATION PLAN ACTIVITIES**

Following is a summary of recommended activities. The tasks comprising each activity are also described.

#### **Activity A — Refine Preliminary Plan**

It is important that the Algae Control Program meet the needs, objectives, and requirements of the following groups:

- Users of Barton Springs Pool (BSP)
- United States Fish and Wildlife Service (USFWS)
- Staff of the Aquatics Division of the City of Austin Parks and Recreation Department
- Staff of the City of Austin Watershed Protection Department

Therefore, prior to implementation of the Preliminary Plan, meetings should be held with these groups to review the appropriateness of the proposed program and, as appropriate, modify, refine, or clarify the program components. It is anticipated that approximately two meetings will be held with each group. As some of the specific activities described below are implemented, additional meetings and communications will be required with these groups. Time and budgets for these additional coordination activities are provided for in the appropriate tasks, which are described below.

## **Activity B — Implement Program to Skim Algae Manually**

This activity includes three tasks. These tasks are as follows:

### **Task 1. Test Skimmer Prototypes**

Prototypes of skimmers have been fabricated. These skimmers are designed to allow the Aquatics Staff to collect algae that have risen to the top of the pool in nets that can be manually operated.

During this activity the consultant staff, in cooperation and coordination with the Aquatics Staff, will field test these skimmers. Appropriate design modifications will be identified, and information will be compiled regarding when, and where, algae removal is most effective and beneficial. Methods for disposal of the accumulated algae will also be evaluated.

The effectiveness of the skimming activities will be documented as follows:

- Amount of material removed
- Time before pool condition becomes objectionable again
- Whether decreased biomass affects algae growth rates

### **Task 2. Prepare Operational Procedures**

The results of Task 1 will be used to prepare written operational procedures for when, where, and how manual skimming should be conducted.

### Task 3. Modify Prototypes

The results of Task 1 will be used to modify the prototype designs. Plans for one or more manual skimming devices will be prepared. A bid request package will be prepared to obtain fabricated skimmers for use at the pool.

### **Activity C — Evaluate Effectiveness and Feasibility of Providing a Mesh Covering of Beach During Algae Blooms.**

This activity consists of three tasks, which are described below:

#### Task 1. Identify Method for Anchoring Mesh Over Beach Area.

For this to be a feasible strategy, two issues have to be addressed.

- The mesh and the method of anchoring it to the bottom must not pose a hazard to the swimmers.
- It must be relatively easy to clean the mesh, since algae are expected to grow on the mesh. The consultants will work with the Aquatics Staff and determine an appropriate anchoring system. If an appropriate anchoring system cannot be devised, this will not be a component of the final program.

#### Task 2. Pilot Test Mesh Covering

A pilot test will be conducted over part of the beach area. Information to be determined by this pilot test includes the following:

- Does the mesh retain the algae on the bottom?
- Is the anchoring system effective?
- Is it practical to clean the mesh?
- Is there a potential for adverse impacts to the salamander?

The most significant potential for adverse impact to the salamander would occur if there were insufficient oxygen transferred through the mesh to maintain appropriate levels of dissolved



oxygen (DO) in waters in the habitat area, or if the die-off of the algae beneath the mesh creates an unmanageable oxygen demand. A study will be conducted that compares the DO concentration in the waters between cobbles in the beach area as it normally exists and in the waters between cobbles below the mesh. If additional types of concerns are identified by USFWS, it may be necessary to expand this study.

The results of the pilot test will be used to refine the techniques for installation of the mesh and operational procedures while the mesh is in use. If the results of the pilot test are unsatisfactory, this strategy will be deleted from the program. If the pilot test results are positive, a full-scale test will be performed. The results of the pilot test will be documented in a report.

### Task 3. Conduct Full-Scale Test

The results of this task will be used to refine the operational procedures developed in Task 2 and to determine if covering the beach area will significantly reduce floating algae in the pool. In this task, the entire beach area will be covered, as recommended based on the results of Task 2. Amounts of floating algae in the pool will be monitored to determine if there is a significant reduction following installation of the mesh. Based on the results of this test, the design of the coverings or the operational procedures will be modified, if appropriate. The modifications will be documented.

## **Activity D — Develop and Implement Program to Enhance Biological Communities in Barton Springs Pool.**

This activity consists of two tasks, which are described below.

### Task 1. Develop Detailed Biological Plan

In this task, a detailed biological plan will be developed. The plan will identify the species of plants, fish, and invertebrates to be re-introduced to the pool, as well as the source of the organisms, the measures to be taken to avoid the introduction of non-native species, planting techniques, and designs for protective barriers around planted plots. The locations to be planted, a sequencing plan, and a schedule for introduction of the plant species will be identified. It is anticipated that planting will be phased and scheduled so that (1) disruption to the users of the pool is minimized, and (2) experience and species success data gained in the initial plantings can be applied to later plantings to enhance the success of the revegetation effort. Measures for

protecting the new plants until they are established will also be specified. The possibility of incorporating limestone boulders to provide standing platforms for swimmers at selected locations in the beach area will be evaluated; this would provide an additional level of protection for the plants.

Other components of the plan are expected to include the following;

- Recommendations for the establishment of facilities for culturing plants and invertebrates
- Recommendations of procedures for providing for the participation of qualified volunteers, such as Boy Scouts, in planting activities
- A plan for re-establishment following severe flood events

It is anticipated that the draft Biological Plan will be reviewed with the BSP users, USFWS, the City Aquatics Staff, and the City Watershed Protection Staff.

#### Task 2. Implement Biological Plan

In this task, organisms to be introduced to the BSP will be obtained and cultured, protective structures for the seedling plants will be constructed, volunteers will be trained, and the plantings and introduction of fish and invertebrates will be accomplished.

#### **Activity E — Develop Structure and Procedures for Providing Chlorination in Upper, Shallow End of Pool**

This activity consists of three tasks, which are described below.

#### Task 1. Design Modifications to Upper Pool Shallow Area

Preliminary design documents will be prepared for a modification to the pool bottom that will allow the isolation of the upper, shallow area of the pool. Preliminary designs will also be developed for any other modifications that are needed to ensure chlorinated waters are securely held until it is confirmed that no residual chlorine remains in the water. These designs will be

reviewed with the BSP users, USFWS, and Aquatics Staff, as well as the Watershed Protection staff. Based on comments received, a final design and opinion of probable cost will be prepared.

It is anticipated that these modifications can be constructed by City crews. During this activity, meetings will be held with appropriate City departments to verify capability, determine procedures for securing materials, and develop a schedule. An Upper Pool Implementation Plan will be prepared that identifies the proposed schedule, the responsibilities of the various City departments, and recommended coordination measures, as well as pool operational methods while construction is underway.

### Task 2. Develop Operational Procedures

The consultant will work with the City staff to develop and document operational procedures for chlorinating the upper, shallow end of the pool. These procedures will address the frequency of treatment and treatment methods. The objectives of the procedures are to provide effective control of the algae in this area of the pool while minimizing the risk of a release of chlorinated water into either a salamander habitat area or the downstream reach of Barton Creek.

Alternatives for providing chlorination will be evaluated which will include, but not necessarily be limited to, the following:

- Providing detailed written procedures and periodic training to assigned Aquatics Staff on chemical storage, chemical handling, dosing, testing and spill response.
- Securing services from a commercial firm experienced in pool maintenance procedures.

If it is determined that these services should be secured by contract, the consultant will assist the City in developing the technical requirements of the contract that relate to the frequency and method of treatment, minimization of spill risk, response to spills, and coordination with Aquatics staff.

### Task 3. Construct Modifications to Upper Pool Shallow Area.



It is anticipated this activity will primarily be performed by City staff. The consultant will be available to respond to requests for clarification of the design documents and the Upper Pool Implementation Plan.

#### **Activity F — Modify Dam Structures to Allow for Natural Recolonization of Biological Community.**

This activity consists of two tasks, which are described below.

##### **Task 1. Conduct Feasibility Analysis**

In this task a detailed analysis of the feasibility and desirability of modifying both the upper and lower dams on BSP will be performed. Providing a means for controlled flows from Barton Creek to enter the pool will facilitate re-establishment of a natural biological community in BSP, particularly with respect to the introduction of endemic plant species. Modifications to the structure and operation of the lower dam will facilitate the reintroduction of fish species.

Topics to be investigated will include the following:

- Will the quality or temperature of creek inflows adversely impact the quality of water and/or salamander habitat in BSP? If there are potential concerns in this area, can they be addressed by regulating the volume of creek flow that is allowed to enter the pool?
- Since it is not desirable for creek flows impacted by stormwater runoff to enter the pool, operational procedures for excluding flow from runoff events will be evaluated.
- Structural and operational modifications to the upper and lower dams will be identified that will accomplish recolonization objectives in a manner consistent with the operational objectives identified above and a manner that maintains compliance with the drawdown requirements of the Section 10(a)(1)(B) Permit.
- Current plans and schedules for work on the upper and lower dams will be reviewed to determine the extent to which these projects could be modified to provide the capability for natural recolonization.

The results of these analyses will be reviewed with BSP users, USFWS, Aquatics staff, and Watershed Protection staff. If, based on this review, it is decided to implement this component of the program, Task 2 will be performed.

## Task 2. Implement Natural Recolonization Program.

There are two primary elements to this task:

- Develop written operational procedures for when, and how, opportunities will be provided for natural recolonization.
- Work with the designers of the proposed modifications to the upper and lower dams to incorporate additional features needed to allow controlled, natural recolonization.

## **Activity G — Provide Enhanced Recirculation in Beach Area.**

Preliminary evaluations suggest that enhanced recirculation in the beach area may help control the growth and release of blue-green algae in this area. In this activity the effectiveness of this approach will be further evaluated through a pilot study; and, if found to be effective, a system will be designed and installed. There are four tasks in this activity, which are described below.

### Task 1. Design Pilot Study

In this task the following will occur:

- Design the facilities to be used to provide recirculation in the area selected for testing and to protect the study area.
- Prepare a study design, which identifies the parameters to be monitored and the measures to be used to evaluate the effectiveness of recirculation.
- Determine if selected aspects of the pilot study will be performed by City staff.
- Prepare a revised estimate of the cost of performing the pilot study.

### Task 2. Implement Pilot Study.

The study designed in Task 1 will be implemented, and the results will be evaluated. A report of the study results will be prepared. The results of the pilot study will be used to identify the required recirculation volume and pump size. If the pilot study demonstrates that recirculation is beneficial, Tasks 3 and 4 will be implemented.

### Task 3. Design Recirculation System

In this task the pumping and piping facilities will be designed. The design will also include aesthetic features to conceal the distribution system and features to reduce the potential for damage due to flooding. The Preliminary Design will be reviewed with BSP users, USFWS, Aquatics staff, and Watershed Protection staff. Based on comments received, final plans and bid documents will be prepared.

### Task 4. Construct Recirculation System.

It is anticipated that a contractor will be selected to construct the recirculation system. The consultant will provide support during the construction process.

### **Activity H — Coordinate with USFWS.**

As identified in specific tasks above, and throughout the project, it will be important to maintain close coordination with USFWS. Periodic meetings will be held to discuss proposed activities with USFWS. Any activities that are not provided for in the Section 10(a)(1)(B) Permit must be acceptable to USFWS, and the permit must be revised to provide for them. It is anticipated that it will be necessary to revise the Section 10(a)(1)(B) Permit during this process, and meetings will be required to accomplish this revision. It has been assumed City staff will prepare and process permit amendments, but the consultant can provide this service if the City wishes.

### **Activity I — Provide Periodic City Briefings**

It is anticipated that, periodically during the study, it will be desirable to provide briefings on study results and project status to the City Council and senior management staff at the City. This activity provides for preparation for, and participation in, those briefings.



**BARTON SPRINGS POOL  
ALGAE CONTROL PROGRAM**

**APPROACH  
SHORT-TERM AND TEMPORARY**

Strategy	Rationale	Advantages	Disadvantages/Issues	Implementation Steps	Compatibility with Salamander Protection
1. Skimming algae- <u>Recommended</u> <i>Hand on skimmer Amount of bio mass to be skimmed to be determined by skimmer</i>	<ul style="list-style-type: none"> <li>Only solution immediately implementable.</li> <li>Compatible with 10(a)(1)(B) Permit</li> <li>No construction</li> <li>No disruption</li> </ul>	<ul style="list-style-type: none"> <li>Immediate reduction in floating algae.</li> <li>Reduces total algal biomass in pool.</li> <li>Depending on design, can be used while swimmers are in pool.</li> <li>Low tech, low cost</li> </ul>	<ul style="list-style-type: none"> <li>Very short-term solution (30 min - 1 hour), since algae is distributed throughout water column and continues to rise</li> <li>Incomplete solution since it is not practical to continuously skim entire pool.</li> </ul>	<ul style="list-style-type: none"> <li>Develop effective skimmer design in coordination with Aquatics Staff.</li> <li>Identify when and how skimming is most effective.</li> <li>Find disposal area for skimmings.</li> </ul>	<ul style="list-style-type: none"> <li>No adverse impact on salamander. Reduction of biomass in pool may reduce potential for anaerobic sediments.</li> </ul>
2. Cover beach area with mesh - <u>Evaluate further.</u>	<ul style="list-style-type: none"> <li>Beach area is source of much of floating algae.</li> <li>This should keep much of the algae from entering water column.</li> <li>Provides shading of cobble; mesh can be cleaned.</li> </ul>	<ul style="list-style-type: none"> <li>Control at source.</li> <li>Not labor intensive.</li> <li>Low tech, low cost.</li> </ul>	<ul style="list-style-type: none"> <li>Need to install so that there are no safety issues for swimmers.</li> <li>Potential disturbance by public</li> </ul>	<ul style="list-style-type: none"> <li>Identify installation method that both provides swimmer safety and facilitates frequent cleaning.</li> <li>Verify effectiveness through pilot testing.</li> <li>Verify that a cover only on the beach area significantly reduces total amount of floating algae in pool.</li> </ul>	<ul style="list-style-type: none"> <li>Tentative response for USFWS is that this is acceptable. More discussions of details needed.</li> </ul>

**BARTON SPRINGS POOL  
ALGAE CONTROL PROGRAM**

**APPROACH  
LONG-TERM: UPPER POOL, SHALLOW AREA**

Strategy	Rationale	Advantages	Disadvantages/Issues	Implementation Steps	Compatibility with Salamander Protection
Modification to bottom structure to allow chlorination in this area with minimal drawdown of pool ( $\approx 1$ foot) - <u>Recommended</u>	<ul style="list-style-type: none"> <li>Solutions proposed for other zones (reef, vegetation, natural fauna, recirculation, and vacuum) are not effective in this zone.</li> <li>Slipperiness due to algae is a significant concern in this zone.</li> <li>Bottom in this area is combination of poured concrete and slab rock so there is not a significant environmental community to be impacted.</li> <li>Previously there was a dam for this area.</li> </ul>	<ul style="list-style-type: none"> <li>Allows for consistent algae control in a zone where currently there is not a good level of control and there is a lot of wading.</li> </ul>	<ul style="list-style-type: none"> <li>Risk of spill.</li> </ul>	<ul style="list-style-type: none"> <li>Identify design for bottom modification that maintains aesthetics of pool, pool circulation, and does not alter swimming characteristics of pool.</li> <li>Develop operational program to manage spill risk</li> <li>Consider containment or diversion capability in case significant spill occurs.</li> </ul>	Not salamander habitat. No adverse impact if measures are taken to avoid accidental spills of chlorine into habitat area.
<b>LONG-TERM: UPPER POOL, MID-DEPTH AREA</b>					
Continue Vacuum Program and periodically provide full cleaning with Bobcat brushes and high-pressure hoses — <u>Existing Practice</u>	This program appears to be successful in managing algal growth in this area	Proven program.	Moderately labor intensive	None required.	Currently approved for use by USFWS
<b>LONG-TERM: SPRING AREA</b>					
Periodically hose off rocks where swimmers climb out. — <u>Existing Practice</u>	Current practice is effective.			None	Compatible

**BARTON SPRINGS POOL  
ALGAE CONTROL PROGRAM**

**APPROACH  
LONG-TERM: LOWER POOL, DEEP AREA AND BEACH AREA**

Strategy	Rationale	Advantages	Disadvantages/Issues	Implementation Steps	Compatibility with Salamander Protection
Increase extent and diversity of ecosystem (plants, fish, and invertebrates) using endemic species — <u>Recommended</u> .	<ul style="list-style-type: none"> <li>A natural system contains checks and balances that discourage the long-term dominance of a single species, such as blue-green algae.</li> <li>A natural, diverse plant and fish community existed prior to 1990s.</li> </ul>	<ul style="list-style-type: none"> <li>Plants will shade rock substrate to minimize algae production on rock surfaces</li> <li>Macrophytic plants will provide nutrient uptake and reduce nutrients available for algae growth</li> <li>Plants provide cover and shelter from predation to a diverse group of invertebrates and small fish that feed on algae</li> <li>Increased area of plant coverage will enhance the diversity and quantity of invertebrates that are the food source for the Barton Springs salamander and other inhabitants of the pool</li> <li>Increased area of plant coverage will be aesthetically pleasing to users of pool.</li> </ul>	<ul style="list-style-type: none"> <li>People's activities may inhibit establishment of vegetation; protection may be required during early stages.</li> <li>Obtaining quantities of suitable planting material from local areas and ensuring exotic plants/animals are not included in transplanted material.</li> <li>Some plants may hamper swimmers and/or require maintenance efforts to keep below the swimming surface.</li> <li>Plants also provide surface area for algal colonization.</li> <li>Takes time to establish sufficient vegetative cover to inhibit algal growth on rocks.</li> <li>Requires recovery plan after flooding events that substantially reduce vegetative cover.</li> </ul>	<ul style="list-style-type: none"> <li>Harvest selected species from Barton Creek and Town Lake and other selected local areas</li> <li>Propagate harvested plants at San Marcos hatchery facilities or other suitable location to increase quantity available for planting and minimize introduction of unwanted or exotic plants.</li> <li>Plant selected areas within small protective enclosures</li> <li>After planted areas are successfully vegetated, rotate protective enclosures to other selected areas for planting</li> </ul>	Enhances Salamander Habitat



**BARTON SPRINGS POOL  
ALAGE CONTROL PROGRAM**

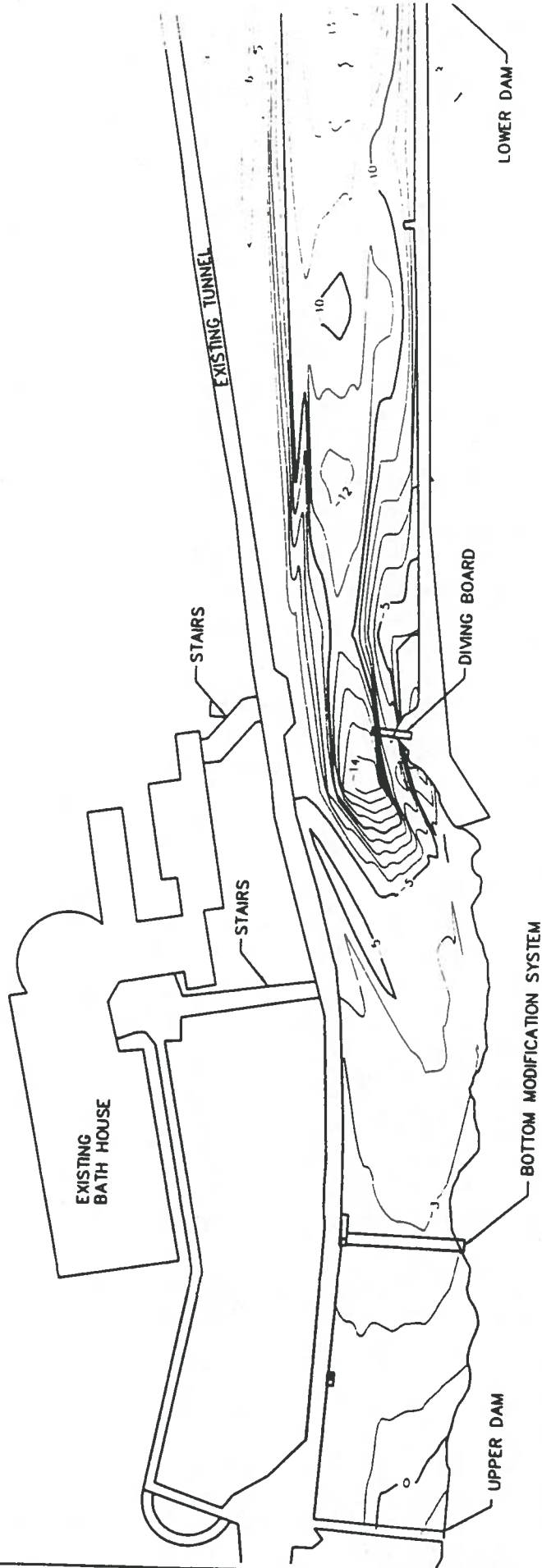
**APPROACH  
LONG-TERM: LOWER POOL, DEEP AREA AND BEACH AREA  
(Continued)**

Strategy	Rationale	Advantages	Disadvantages/Issues	Implementation Steps	Compatibility with Salamander Protection
Modify upper and lower dam structures to provide natural recolonization. Modification of upper dam will be most effective for plant recolonization. Modification of lower dam will be most effective for fish recolonization — <u>Evaluate further.</u>	The species that are best suited to the environment will be introduced.	<ul style="list-style-type: none"> <li>Best way to achieve a natural balance</li> <li>Minimal cost and effort for maintenance.</li> </ul>	<ul style="list-style-type: none"> <li>Concern that cormorants will eat introduced fish</li> <li>Concern that introduced fish will eat salamanders</li> <li>Consider methods for protecting plants that provide in-pool standing areas for swimmers.</li> <li>Effects of introduction of creek flow to pool/habitat on quality and temperature</li> <li>Modification of lower dam has to be part of project to provide different gates, and the timing has to be the same for both projects.</li> </ul>	<ul style="list-style-type: none"> <li>Determine impacts on quality and temperature</li> <li>Develop operational procedures to minimize impacts</li> <li>Coordinate with designers for dam modifications.</li> </ul>	Not believed to adversely impact salamander. Lower dam construction proposed and already proposed and approved. Minor construction is required in upper area.

**BARTON SPRINGS POOL  
ALGAE CONTROL PROGRAM**

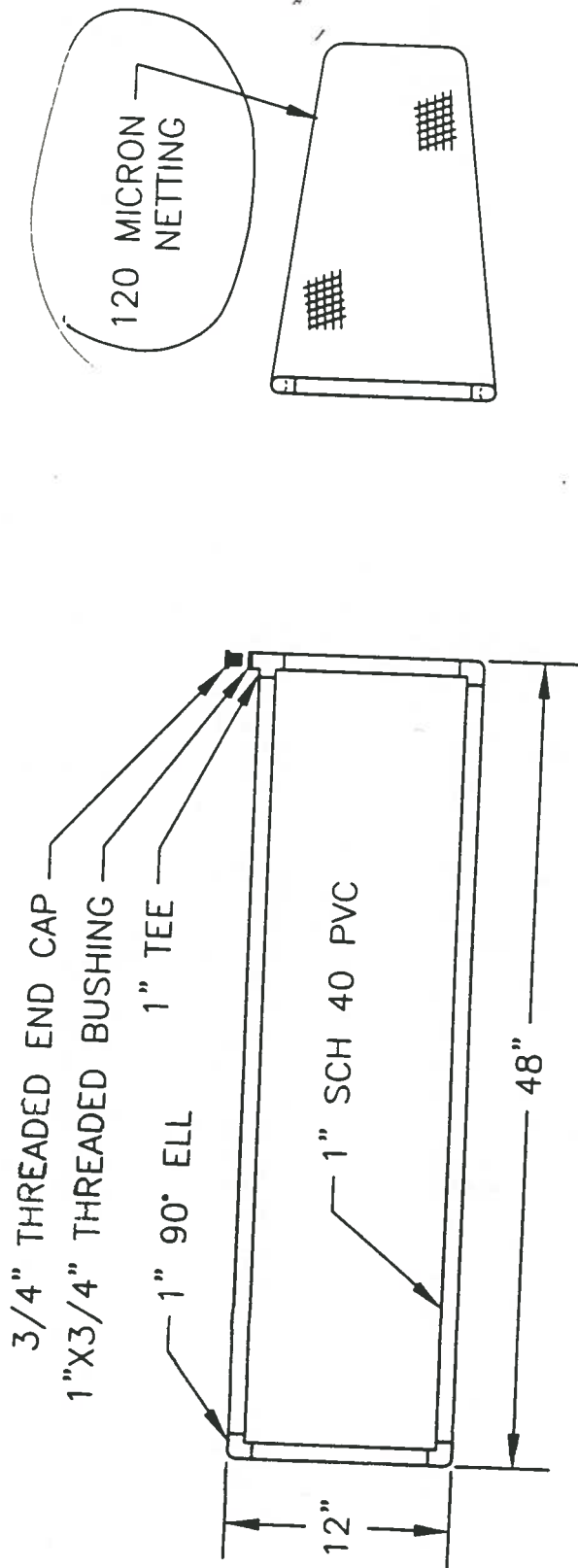
**APPROACH  
LONG-TERM: LOWER POOL; BEACH AREA**

Strategy	Rationale	Advantages	Disadvantages/Issues	Implementation Steps	Compatibility Salamander Protection
<ul style="list-style-type: none"> <li>Increase recirculation rate over beach area – <u>Evaluate further.</u></li> </ul>	<ul style="list-style-type: none"> <li>Velocity can be a limiting factor in the amount or type of algae growth</li> <li>Disrupting heated surface layer of water may reduce blue-green algae growth.</li> </ul>	<ul style="list-style-type: none"> <li>Reduce settling of algae and silt in beach area, which would be beneficial to salamander.</li> </ul>	<ul style="list-style-type: none"> <li>Velocity needed to effectively control algae may be adverse to swimmers</li> <li>Appearance of system – may be possible to design an installation to mimic limestone faults in spring area.</li> </ul>	<ul style="list-style-type: none"> <li>Perform pilot test in small area to test effectiveness.</li> </ul>	<ul style="list-style-type: none"> <li>Tentatively acceptable. Discussion of details needed.</li> </ul>
	<ul style="list-style-type: none"> <li>Reduce growth rate of algae.</li> </ul>	<ul style="list-style-type: none"> <li>Cost and maintenance of pumps</li> <li>Potential for damage during flood events and needed for re-installation.</li> </ul>	<ul style="list-style-type: none"> <li>If effective, design full-scale application.</li> </ul>		



CITY OF AUSTIN  
BARTON SPRINGS POOL ALGAE CONTROL PROGRAM  
BOTTOM MODIFICATION SYSTEM LOCATION



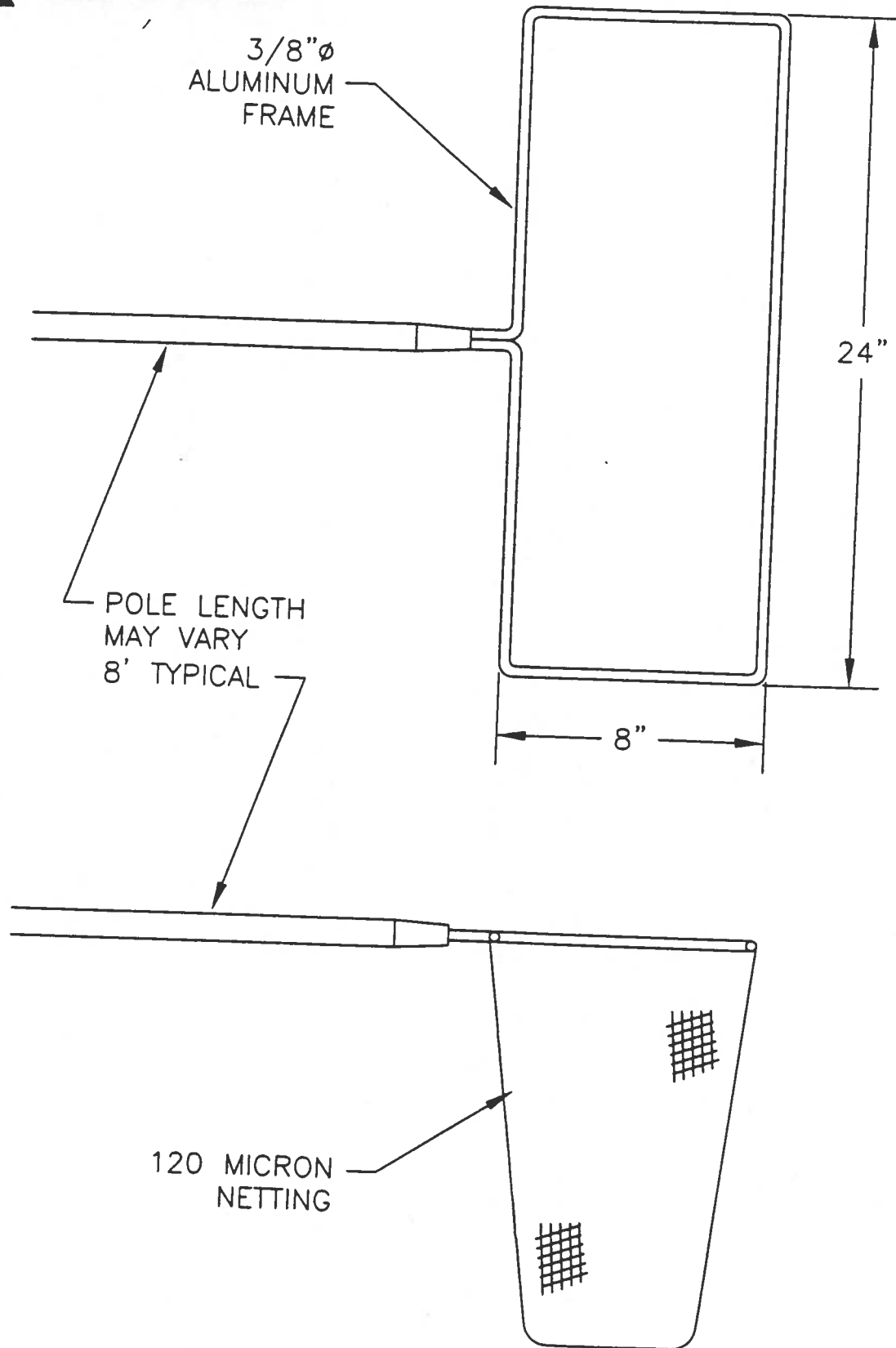


NOTE:  
 THREADED END CAP ALLOWS FOR  
 BUOYANCY CONTROL THROUGH  
 ADDITION/REMOVAL OF WATER.

CITY OF AUSTIN  
 BARTON SPRINGS POOL ALGAE CONTROL PROGRAM  
 PROPOSED LARGE AREA SKIMMER NET

ASSOCIATES, INC.

MECHANICAL • ELECTRICAL • PLUMBING • SCIENCE • DESIGN



CITY OF AUSTIN  
BARTON SPRINGS POOL ALGAE CONTROL PROGRAM  
PROPOSED POLE-MOUNTED SKIMMER NET

**BARTON SPRINGS POOL  
ALGAE CONTROL PROGRAM**

**PLANTS RECOMMENDED FOR REINTRODUCTION INTO BARTON SPRINGS POOL**

<b>Primary Recommendation</b>	
Water stargrass	<i>Heteranthera dubia</i> <i>Heteranthera liebmannii</i>
Fanwort, Cabomba	<i>Cabomba caroliniana</i>
American wild celery	<i>Vallisneria americana</i>
Delta arrowhead	<i>Sagittaria platyphylla</i>
<b>Additional Plant Species Suggested</b>	
Stonewort, Nitella	<i>Nitella spp.</i>
Muskgrass, Chara	<i>Chara spp.</i>
Northern milfoil	<i>Myriophyllum heterophyllum</i>
Hornwort	<i>Ceratophyllum demersum</i>
Water primrose	<i>Ludwigia repens</i>
<b>Possible Additional Plant Species</b>	
Shining pondweed	<i>Potamogeton illinoensis</i>
Baby pondweed	<i>Potamogeton pusillus</i>
Horned pondweed, common poolmat	<i>Zannichellia palustris</i>

Parks Board  
Programs Sub-Committee Meeting Minutes  
Tuesday, August 22, 2000

Present: Rosemary Castleberry, Robert Armistead, Jorge Zapata, Mendy Marshall

Absent: Rocky Medrano

Meeting called to order at 12:05 p.m.

Presentation: Jorge Zapata, Senior Programs Manager shared information about the Senior Nutrition Program and Summer Food Program. Currently, the Senior Nutrition Program provides daily hot lunches to over 700 seniors. The program is funded through a Federal Grant and the City. Over the past several years the grant funding has remained the same but the costs of the program have increased. The Department contracts with Austin Independent School District (AISD) to prepare the meals and Parks and Recreation Department (PARC) staff deliver to each site. Because of the concern with lack of proper funding, staff are evaluating other options to best utilize the current funding with the ability to serve the most seniors.

The Summer Food Service Program is designed to provide free meals to children 1-18 years of age that participate in the National Free or Reduced Lunch Program during the school year. In Summer 2000, the Department served over 55,000 meals to youth at 55 sites throughout the city. This program is funded and ran similar to the Senior Nutrition Program and is being evaluated for alternatives because of funding issues.

Robert shared a listing of upcoming programs. (attached)

The next meeting is scheduled for Tuesday, September 26, at noon.

Meeting was adjourned at 1:15 p.m.



Austin Parks and Recreation Department  
Programs Division  
Upcoming Programs 2000

<u>Date</u>	<u>Time</u>	<u>Event</u>	<u>Location</u>
August 26	10a-2p	Back To School Playday	Roving Leader: Dick Nichols Park
August 26-27	9-10p	El Barrio Men's Softball Tournament	Parque Zaragoza Recreation Center
September 4		Afterschool Program begins	Barbara Jordan Elementary
September 7	6:30-8:30p	Open House	Metz Recreation Center
September 8-10	9am-9p	Youth Basketball Tournament	Doris Miller Auditorium
September 14	3:30-4:30p	Diez y Seiz Youth Party	Metz Recreation Center
September 15	7-10p	Teen Night	Northwest Recreation Center
September 16	10am	Opening "Grandma" Camacho Center	
September 16	7-10p	Parent's Night Out	Northwest Recreation Center
September 23	12-4p	Antique Car Show	Northwest Recreation Center
September 22		Skate park Grand opening	Austin Recreation Center
September 28	6-8p	Rosewood Neighborhood Pancake Supper	Rosewood Recreation Center
September 29	7a-6p	C-Day Camp	Metz Recreation Center Parque Zaragoza Recreation Center Rosewood Recreation Center Givens Recreation Center
October 6-8	9a-8p	Youth Taking Action for Life 3 on 3 Basketball Tournament	Givens Recreation Center
October 5	6-8p	Fall Harvest Wreath Design	Rosewood Recreation Center
October 9	7a-6p	C-Day Camp	Parque Zaragoza Recreation Center Metz Recreation Center Rosewood Recreation Center Givens Recreation Center
October 12	6:30-8:30p	Youth Harvest Fun	Rosewood Recreation Center
October 7	7-10p	Parent's Night Out	Northwest Recreation Center
October 13	7-10p	Teen Night	Northwest Recreation Center
October 14	1-5p	Hill Elementary Fall Hoe Down	Northwest Recreation Center
October 21		Metz Menudo Cookoff	Fiesta Gardens