BALCONES CANYONLANDS PRESERVE
LAND MANAGEMENT PLAN

TIER II A

CHAPTER V
INFRASTRUCTURE CORRIDOR MANAGEMENT

August 2007

TABLE OF CONTENTS

LIST OF TABLES

LIST OF APPENDICES

1.0 INTRODUCTION

Lands designated for the Balcones Canyonlands Preserve (BCP) frequently come into the hands of the land manager with specific legal property rights granted to others in the form of utility easements, access easements, road rights-of-way, or future sites for designated utility infrastructure and facilities. While some of these easements may be permanently inactive, others may require continual operational and maintenance scrutiny by utility personnel who require frequent access to the preserve land.

In 1993, local utility service providers (both public and private), transportation planners, and representatives involved in the regional habitat conservation plan process concluded negotiations with the U.S. Fish and Wildlife Service concerning how infrastructure developers in western Travis County could continue to provide necessary roads and utility service to developing areas near the preserve macrosites. In general, the resulting agreement provided that infrastructure activities will be concentrated in major corridors on the periphery of the various macrosite boundaries. Crossings of the Preserve will be limited to existing utility corridors or a few new planned corridors based on anticipated projects over the life of the Balcones Canyonlands regional permit. Requests for new projects affecting preserve lands outside the prescribed corridors are discouraged and applicants are required to get USFWS permission for the proposed activity. Guidelines and procedures were cooperatively established in the agreement to allow infrastructure owners to maintain their existing easements and facilities and to construct additional facilities on a case-by-case basis.

The infrastructure planning guidelines (see Appendix A of this chapter) are an integral part of the regional section 10 (a) permit held by the City of Austin and Travis County. It was developed to provide basic guidance for utility service providers on how to co-exist with the Preserve and its need for undisturbed habitat, while conducting their core operations throughout their various service areas in western Travis County. It allows utilities to maintain their existing facilities in prescribed corridors or to repair and construct new facilities in those corridors, with appropriate notification to the Secretary of the Coordinating Committee. Maps of existing and planned corridors were prepared for this 1993 agreement by the City of Austin. However, the GIS format used at that time has proven to be incompatible with the current GIS formats used by Travis County and the City of Austin and the digital map database is no longer available. The existing map hard copies will be digitized, updated, and formatted to the current GIS systems and placed in the BCP database to assist in future planning. The original map set (26 maps in all) of existing infrastructure in and around those preserve lands included in the 1999

Land Management Plan is available upon request from the BCCP Coordinating Committee Secretary, City of Austin, BCP Program.

Utilities covered under the regional permit (City of Austin, Travis County, and the Lower Colorado River Authority/Pedernales Electric Cooperative) can request mitigation credits from the appropriate entity's credit balance for construction activities requiring mitigation that occur both inside designated corridors or in habitat throughout the permit area of western Travis County. Other non-covered utility providers and infrastructure developers may negotiate directly with USWFS for habitat mitigation requirements or use a BCP participation certificate process similar to the one used by private landowners to secure necessary mitigation when in areas covered by the permit. The U.S. Fish and Wildlife Service must be consulted for approval when infrastructure activities are proposed that disturb habitat inside the preserve acquisition areas. The provision of mitigation occurs through the BCP Secretary or his designee (i.e., Infrastructure Program Coordinator).

The current responsibility for infrastructure project coordination lies with the City of Austin, who works with Travis County to provide the necessary mitigation to infrastructure clients. Each proposed clearing or construction activity undergoes a project impact assessment to calculate mitigation needs. Subsequent participation certificate processing is conducted by Travis County if appropriate for entities not covered by the regional permit. Projects receiving mitigation under the BCP program must contact the onsite manager for each affected preserve tract to clarify issues regarding access, site restoration, cleanup, and other site-specific mitigation measures.

2.0 LOCATION OF INFRASTRUCTURE PROJECTS

The location of an infrastructure project in relation to the BCP can directly affect the approvals necessary to proceed. Often, long linear projects such as roads, transmission lines, or pipelines cross multiple jurisdictional and preserve boundaries. The onsite manager may only be aware of the dedicated right-of-way or easement within his realm, but regional activities may have significant local impact on a given tract also.

Infrastructure projects of interest to BCP land managers may:

- lie completely within acquired or designated preserve lands;
- lie completely within future preserve acquisition areas; or
- straddle or cross through multiple preserve and non-preserve areas.

The infrastructure program coordinator is solely responsible for identifying and processing those projects that (1) lie in habitat in the Permit area outside of the Preserve or (2) lie within the proposed preserve boundaries, but does not involve currently protected preserve land. Project review by the infrastructure program coordinator may occur for projects in all location categories.

3.0 COMMON TYPES OF INFRASTRUCTURE

Tier III land management plans for individual parcels have documented the easements, rights-of-way, facilities and other legal encumbrances that affect the subject BCP property. However, such information is not available for adjacent tracts that have not yet been acquired or private mitigation tracts with their own section 7 or 10(a) permit from USFWS. Infrastructure development within preserves as a result of an individual section 10(a) negotiated with USFWS is governed by the terms of that agreement. This fragmented picture of regional infrastructure networks in and around the Preserve will require more research in the future to accurately update the BCP database and maps of existing and planned infrastructure corridors.

3.1 Easements

Easements are limited legal property rights granted on one's property that allow specific activities within a specified locale by another party. Infrastructure examples include:

- ingress-egress access easements;
- overhead transmission line easements;
- underground pipeline easements; or
- water, sewer, and electric distribution line easements.

Use of such easements may require additional negotiations and agreements with the current property owner over implementation of the allowed activity. In some extreme cases, eminent domain proceedings can be used by certain governmental entities to obtain necessary easements

3.2 Rights-of-way

Rights-of-way are similar to easements, but less restrictive to the holder since the land is often purchased and owned by the other party. Rights-of-way may be obtained from a willing seller or through eminent domain proceedings by certain utilities and road building entities. Roadways of all sizes and major electrical transmission line corridors are the most common rights-of-way. Planned rights-of-way in infrastructure corridors generally have a maximum width identified that may be substantially larger than the

existing developed right-of-way. Subsequent expansion within undisturbed, planned right-of-way requires negotiated agreements with the property owner and mitigation in most cases.

3.3 Specific Facility Sites

Infrastructure facility sites within a regional context could involve utility service centers, wastewater treatment and disposal facilities, water treatment plants and associated distribution systems, electrical substations, telecommunications towers, and drainage system improvements. They are typically sited within or in close proximity to linear corridors and transportation routes, but may be substantially larger in size. They are often planned far in advance and funded as capital improvement projects (C.I.P.) when needed. The 1993 infrastructure agreement references several specific facility sites (such as the COA Water Treatment Plant No. 4 site or electrical substations) that were pre-approved despite being located within the anticipated preserve acquisition areas. These facilities are typically covered for their mitigation needs by the federal permit as one of the major benefits for permittees and managing partners. Other future project sites that were not identified in that agreement, and are not associated with existing or planned corridors require USFWS approval to proceed.

The existing and planned corridor maps from 1993 are useful sources of information, but may need to be updated periodically with USFWS approval whenever substantial new C.I.P. programs are implemented by the covered utility and infrastructure providers that may cross into preserve acquisition areas. Annexation studies, Master Plans and utility service area planning studies are a valuable source of information on potential new facilities and when they might come on line. For example, the Drainage Master Plan currently under preparation will identify potential sites for water quality ponds and regional flood detention basins. Since infrastructure projects can be covered and mitigation easily provided for public projects by the permit holders and managing partners whenever they meet the established criteria, preserve managers must be aware of the infrastructure planning efforts that affect them.

4.0 MAINTENANCE AND REPAIR NEEDS

Land managers must recognize that infrastructure operation and maintenance needs require continual access by utility field crews to their systems. All forms of infrastructure require periodic maintenance to prevent system deterioration. The schedule for this maintenance will be based on the age of system components and the desired system efficiency. Upgrades of older transmission lines and pipelines and retrofits of

infrastructure with advanced technology equipment and components are also common with proactive Austin area utilities. Utility delivery systems in continuous use, such as electrical power, water supply, and wastewater collection, require routine system checks by utility personnel, but the frequency of their inspections can vary widely from daily to weekly or longer depending upon system reliability and presence of automated sensors.

System failures, such as leaking pipes or shorted electric lines, may require immediate emergency repairs to remedy problems and prevent further onsite damage. Utility work crews are allowed under the 1993 agreement to conduct such emergency repairs without prior written notification to the Secretary of the BCP Coordinating Committee. They must report such activities to the Secretary's infrastructure program coordinator through written notice within five days of the emergency repair. However, coordination with preserve personnel is essential whenever such work is required. Onsite managers should be notified directly by such work crews whenever they enter preserve land in order to facilitate access and provide guidance for appropriate site cleanup. They shall also receive a copy of the official notification of emergency work submitted by the responsible utility to the infrastructure program coordinator.

Routine system maintenance is scheduled by service providers based on site-specific conditions that may affect system operations. For example, rapid tree growth into electrical lines may necessitate vegetation removal activities to prevent line failures and wildfires. Sagging lines under heavy power loads can also exacerbate problems from tall vegetation underneath them and may require periodic line tightening or support structure raising. Such maintenance is not conducted every year on the same utility line segments, but may be rotational within the service area. Entities covered by the permit can have their annual maintenance work plans for preserve lands pre-approved by the Secretary of the Coordinating Committee or notification can occur on a project by project basis. Onsite managers of preserve lands affected by these system-wide maintenance work plans shall be consulted by the infrastructure program coordinator during this administrative pre-approval process. Utility providers should prepare their maintenance work plans early in the fiscal year (i.e. fall-winter) in order to implement as much work as possible before bird season conflicts arise.

Clear-cut utility easements are not desirable biologically in golden-cheeked warbler habitat. Clear-cut corridors within the preserve fragment the habitat and create avenues for the introduction of edge effects into the protected habitat. Fragmentation and edge effects are considered primary threats to the existence of the golden-cheeked warbler.

Woody vegetation should be allowed to re-grow in corridor areas that are not being actively maintained. As a rule a twenty-foot wide access road and minimal clearing around support structures and facilities (20 to 50 feet) are allowed to facilitate maintenance access, but other vegetation should be allowed to grow. Such vegetated utility corridors serve to buffer nearby warbler habitat and may even develop into viable black-capped vireo habitat as it passes through the appropriate successional stages.

Future maintenance concerns by right-of-way or easement holders will need to be considered by land managers anticipating the restoration of warbler and vireo habitats in undeveloped portions of these easements. Negotiated agreements between easement holders and land managers are essential to protect the basic interests of each party.

5.0 NEW INFRASTRUCTURE CONSTRUCTION

From time to time, infrastructure developers may need to build or upgrade facilities within preserve corridors; however, such actions require prior notification and/or approval by the BCP Secretary. A listing of all notification requirements for maintenance and construction activities within infrastructure corridors on behalf of project proponents is provided in Table 1, as well as deadlines for administrative approvals. Most notifications are actually processed by the BCP infrastructure program coordinator at the WCD/AWU and affected land managers are informed of requested project activities. Preserve managers should know the requirements and provide guidance to any work crews that inquire or attempt to perform work on their preserve.

New construction within the preserve acquisition area is limited to existing corridors, planned and approved corridors, and planned special facility sites (such as the Four Points fire/EMS station at the WTP No. 4 site). The 1999 Land Management Plan Maps of existing infrastructure in and around preserve lands is available upon request from the BCCP Coordinating Committee Secretary, City of Austin, BCP Program. The 1993 agreement on infrastructure planning guidelines (see Appendix A) concentrated future infrastructure growth within the designated corridors and sites to reduce habitat fragmentation of designated preserve lands. Any new utility construction should use existing corridors, which means that new transmission lines or pipelines will closely parallel existing lines within the same easement rather than seeking a new route that impacts preserve habitat. Utility service providers will share widened easements or rights-of-way with other such entities to minimize the loss of acquired preserve habitat.

TABLE 1. Activities Requiring Notification

NOTIFICATION ACTIVITY	APPLICANT RESPONSE REQUIREMENT	APPROVAL DEADLINE
Maintenance		
Emergency	Written - five days after work completed	None
Scheduled	Verbal or written - in advance of work performed (Pre-approval possible for detailed work plans)	Not specified
Construction in Corridors		
Disturbance of cave or bird nesting habitat	Verbal or written within 24 hours (work stops immediately)	Not specified
Surveying or preliminary engineering work	Written - 3 days before work during nesting season	None
*Minor Construction (3000 sq ft or less)	Written notice with plans due 10 days before work	10 days
*Major Construction (more than 3000 sq ft)	Written notice with plans due 60 days before work	30 days
Construction outside Corridors within Preserve		
Clearing in habitat	NOT ALLOWED - cease work and contact USFWS for approval	Depends on USFWS

*Major or minor construction within 300 feet of a breeding territory must be done outside of the breeding season.

The infrastructure guidelines require direct interaction between project proponents and the Secretary of the Coordinating Committee on construction projects that lie within the Preserve corridor prior to the onset of actual construction. During preliminary design, each project should be presented to the Secretary (or the designated infrastructure program coordinator) for a habitat impact assessment and, if appropriate, determination of mitigation requirements for the subject project will be made to the service provider. The onsite preserve manager for the affected project site will be consulted by the infrastructure coordinator and shall advise the coordinator on the need for additional mitigation measures. The City of Austin, Travis County, and the LCRA may assign available mitigation credits that were obtained from dedication of lands to the Preserve to worthy capital improvement projects by their own service providers, whereas non-covered service providers may purchase mitigation credits from the BCCP in 0.1-acre increments.

The guidelines prescribe different procedures for (1) minor projects that disturb 3000 square feet or less and (2) major construction projects that exceed the 3000 square foot impact criteria. Major construction requires the party responsible for construction to hold a pre-construction meeting with affected parties, which would include the Coordinating Committee Secretary's infrastructure representative and the affected preserve manager(s) to ensure maximum protection of the species and preserve resources. Additional project mitigation measures may be discussed and assigned at this meeting.

Preserve managers must be knowledgeable of utility construction practices and the measures that mitigate their effects. The City of Austin’s Environmental Criteria Manual provides a compendium of best management practices (BMPs) for typical development practices. General utility permits needed for infrastructure construction within the City’s jurisdiction generally require compliance with the basic BMPs within the Environmental Criteria Manual. Many of these best management practices have been identified in the section on water quality protection (see Chapter XI. Water Quality Management). The contractors are often familiar the local ordinances and rules for water quality protection, which they may vary greatly among jurisdictions in the Austin area. Onsite managers should specify the standard practices to be employed onsite within the preserve.

Several common mitigation practices for site development activity are mentioned in the infrastructure guidelines and include the following:

1) Transport, disposal offsite, or recycling of removed vegetation resources (i.e. mulching, fence pole production, firewood, etc.);

2) Complete site cleanup of all debris/rock generated by the subject activity;
3) Provision of soil stabilization and erosion/sedimentation controls throughout the life of the project;
4) Revegetation of impacted areas and installation of long-term water quality controls as appropriate;
5) Restoration of desirable habitat species onsite at end of project or compensation for loss of woody plant species that may lead to restoration of adjacent areas;
6) Proper storage, handling, and disposal of all hazardous chemicals/materials involved in the project; or
7) Proper treatment of all oak tree species for oak wilt suppression that are pruned or trimmed during utility easement work.

6.0 COORDINATION OF INFRASTRUCTURE ACTIVITIES

Preserve managers must become knowledgeable with the relevant utility providers and infrastructure development personnel that hold or use corridors across preserve property. They can use Tier III land management plans and the legal records used to prepare them to develop and maintain a listing of all infrastructure facilities, easements, and rights-of-way affecting the subject parcel. A set of existing infrastructure maps for each preserve unit is available upon request from the BCCP Coordinating Committee Secretary, City of Austin, BCP Program and can be used to identify potential entities serving the area.

Preserve managers shall be notified by the Secretary's designated infrastructure program coordinator whenever notifications of maintenance activities, minor construction, or major construction projects that affect them are received.

Preserve managers will be informed of pre-construction meetings involving major construction that affects them and encouraged to participate, particularly in the development of additional mitigation and preserve protection measures.

Preserve managers may provide oversight of work crews during construction to ensure species and preserve protections are observed.

Preserve managers should report unknown infrastructure work or deviations from proposed mitigation and construction plans to the Secretary's designated infrastructure contact. Utilities are not allowed to develop major service lines or even distribution lines through the preserve without obtaining a habitat impact assessment and appropriate mitigation. Even when construction is mitigated, clearing activities are to be completed

between Sept. 1 and March 1. Continuing construction work for ongoing projects after the March 1 deadline requires special permission from the Secretary (in all cases, the vegetation clearing phase must have been completed by the original deadline to prevent actual disturbance of nesting birds) or the USFWS which requires onsite surveys before exceptions are granted.

In karst areas, infrastructure project coverage under the BCCP has limitations. Construction work cannot proceed within one-quarter mile of a designated BCP cave unless a hydrogeological study has been completed which shows that a lesser area is needed for protection of the karst feature. The infrastructure program coordinator maintains copies of such studies performed by the BCP partners and others at designated BCP caves. If information on a proposed project is lacking, such studies may need to be conducted before the project can proceed.

Actual excavation work that uncovers a new cave or significant karst feature must be stopped, while the USFWS is notified. They may require that a survey for endangered karst invertebrates or species of concern be conducted. Contractors may provide their own cave experts to make this determination in coordination with USFWS. When within COA jurisdiction, physical trench line damage repair and mitigations may be discussed with COA geological staff at the Watershed Protection Utility, Environmental Resources Management Division.

Effective communication between service providers and land managers is essential to the protection of preserve and species resources. Table 2 provides a listing of key contacts for various utility providers and those providing BCP administrative guidance on infrastructure matters. These individuals are generally knowledgeable about active projects in their respective service areas; however, other agency personnel may be assigned as points of contact for specific projects.

TABLE 2. Key Contacts for Infrastructure Activities – Summer, 2007

DEPARTMENT	CONTACT PERSON	TELEPHONE
City of Austin (COA Austin Water Utility (AWU)	William A. Conrad, Manager Wildland Conservation Division, AWU and Coordinating Committee Secretary	263-6430
COA AWU Wildland Conservation Division	William A. Conrad, BCP Infrastructure Program Coordinator	263-6430
COA Austin Energy	Judy Fowler, Manager Public Involvement & Property Acquisition	322-6107
COA Austin Water Utility	Teresa Lutes, Water Resources Planning & Analysis	972-0179
COA Watershed Protection & Development Review Department	Katherine Loayza, Watershed Engineering O.B. McKown, Code Services, General Utility Permits Sylvia Pope, Hydrogeologist, ERM	974-2265 974-6330 974-3429
COA Transportation, Planning, & Sustainability Department	Richard Kroger, Transportation Engineering	974-7219
Travis County Transportation and Natural Resources	Kevin Connally	854-7213
LCRA/Pedernales Electric Cooperative, Community Services	Melanie Snyder	473-3200 ex 7406
Austin Area Utility Coordinating Council	Henry Casas COA Public Works and Trans.	505-5611
SBC	Ronda Arnold, Manager Engineering Design	870-5334
Texas Department of Transportation, Austin District	Michael Walker, Environmental Coordinator	832-7168

*** Key personnel and phone numbers are subject to change**

APPENDIX A
INFRASTRUCTURE PLANNING GUIDELINES

NOTE:
This document originated as Appendix B in *the Final Environmental Impact Statement/Habitat Conservation Plan for Proposed Issuance of a Permit to Allow Incidental Take for the Golden-cheeked Warbler, Black-capped Vireo, and Six Karst Invertebrates in Travis County, Texas*, March, 1996. It represents a 1996 revision of a 1993 negotiated agreement between area infrastructure developers and utility providers and the U.S. Fish and Wildlife Service that was incorporated into the Balcones Canyonlands Conservation Plan. <u>These guidelines are part of the BCCP-Shared Vision and can only be changed with USFWS approval</u>.

APPENDIX "B"

INFRASTRUCTURE PLANNING

Revised March, 1996

INFRASTRUCTURE PLANNING

I. Introduction

While the issuance of the Section 10(a) permit will provide a broad grant of authority to allow habitat conversions throughout the BCCP conservation area, there are nevertheless many public infrastructure projects and activities which must continue to operate and be expanded, in some cases inside or along the boundaries of designated preserves. To the extent possible, it is advantageous to all parties concerned to specify all likely CIP (Capital Improvements Program) construction, service extensions, routine operations and maintenance work, and the geographical extent of those operations, in and adjacent to preserves. Any opportunity for mitigating the impacts of infrastructure on species of concern should be planned and pursued. This section of the plan contains detailed definitions, guidelines, and tables which relate to the designation, construction, operation, and maintenance of utility and infrastructure corridors in or adjacent to the BCCP preserve system.

The intent of designing infrastructure corridors is to assure that new utility facilities and corridors that have the potential to impact designated habitat preserves adversely will be routed within specified "infrastructure corridors" which define the placement or alignment of utility facilities in the immediate vicinity of the preserves. Examples of facilities which will be constructed at specific site locations include water and wastewater treatment plants, pump stations, and substations. Examples of facilities which will be constructed along infrastructure corridors include easements and right-of-ways (ROWs) for roads and electric, gas, telephone, cable, water and wastewater transmission and distribution lines. Such easements and right-of-ways are limited to the legitimate needs of that utility or service provider and should not be transferred or used for non-utility purposes.

The principal objective is to provide future community services and facilities in a manner consistent with the objectives of habitat conservation, i.e., in a manner which minimizes habitat conversions and fragmentation. A second objective is to reduce the overall economic cost of providing public services to the area. Planning in advance for future infrastructure needs and delimiting the number and location of infrastructure corridors in and adjacent to preserve areas will aid in accomplishing these objectives.

Ultimate decisions on the locations, construction, operation, and maintenance of utilities within infrastructure corridors must remain with the responsible service provider or agency, after consultation with the BCCP Coordinating Committee. Access for repair and maintenance of facilities will be allowed, with reasonable restrictions to ensure plan compatibility.

Conflict Resolution Process.

Service providers and the Coordinating Committee Secretary shall negotiate mutually agreeable procedures, schedules and decisions to provide for the design, construction, operation and maintenance of facilities while attempting to minimize impacts on the BCCP preserves. If any issue cannot be satisfactorily resolved between these parties, then either the Coordinating Committee Secretary or any of the service providers may place the issue on the agenda of the BCCP Coordinating Committee for resolution and/or direction.

Any other party with an interest in the outcome of the procedures, schedules or decisions may, on their own initiative, request the BCCP Coordinating Committee to place a related item on their agenda.

II. Designation of Infrastructure Corridors

Infrastructure corridors are located within habitat preserves to provide for the essential and continuing public needs for utilities and roadways. New facilities will be routed outside of the habitat preserves, except as provided for by the plan. Where facilities cross habitat preserves or enter the preserves to serve customers, the guidelines of this section (including guidelines for new construction, operation and maintenance) will prevail. The Preserve Land Management Plans and the Land Management Guidelines shall accomodate corridors for existing and added facilities and designated new or expanded corridors. Changing conditions over the life of this permit may require the addition or realignment of corridors. In that event, the modification procedures of the BCCP and Interlocal Agreement will be followed. The Coordinating Committee shall approve expansions of existing corridors and construction of planned corridors before construction begins.

Definitions

The Coordinating Committee Secretary, within the context of the BCCP, is the entity responsible for meeting the 10(a) permit conditions with respect to preserve management; or an entity delegated those responsibilities by the Coordinating Committee Secretary.

Utility provider, service provider, and public and private utility, all within the appropriate context, refer to agencies or public companies that provide and maintain roadway, electric, water, wastewater, gas, cable TV, and/or communication facilities. These include those utilities which are associated with the Permit Holders/Managing Partners and are therefore automatically covered by the permit and those utilities which are not associated with the Permit Holders/Managing Partners and are therefore not covered by the permit.

The utilities associated with the Permit Holders/Managing Partners include the following: the Lower Colorado River Authority, City of Austin Electric Utility, Pedernales Electric Cooperative, City of Austin Water and Wastewater Utility, Travis County Transportation and Natural Resources Department, City of Austin Public Works and Transportation Department, and City of Austin Drainage Utility.

Other utilities which are not currently associated with the Permit Holders/Managing Partners include, but not limited to, the following: Travis County Water Control and Improvement District #17, Lost Creek Municipal Utility District, Texas Department of Transportation, Southwestern Bell Telephone Company, Southern Union Gas Company, and Austin CableVision, a division of Time Warner Cable, a division of Time Warner Entertainment Company, L.P. Consequently, references to utilities and services are also intended to include the facilities constructed by or maintained by any of the companies or agencies named above, for specific utility purposes.

Types of Corridors

1. Primary: Existing corridors that already have utility or roadway structures within them and that should receive the major share of new structure development and service activity in the future. There are two sub-types of primary corridors:

A. Those corridors of critical importance into which considerable new activity will be channeled. These corridors may be widened up to the maximum width specified. Additional preserve acreage was included in the final total 30,428 acres of the BCCP preserves in order to mitigate (at a ratio of 5:1) in advance for the potential widening of existing corridors within the preserves by those utilities associated with the Permit Holders/Managing Partners. But the anticipated loss of preserve due to this future expansion will need to be offset by those service providers undertaking the action who are not associated with the Permit Holders/Managing Partners. Compensation for impacts on the preserve will be negotiated between the Coordinating Committee Secretary and the utility and may take the form of impact assessments, annual licensing agreements, and/or Utility Participation Certificates. Also, compensation will be required by certain COA utilities which have not specifically dedicated land within the preserves.

B. Major corridors of high importance, which may need at some time in the future to be widened in whole or in part. Widening may take place both by those utilities associated with the Permit Holders/Managing Partners and by those utilities not associated with the Permit Holders/Managing Partners, according to the conditions described above in paragraph 1.A.

2. Secondary: Existing corridors that already have utility or roadway structures within them and for which no widening is to occur. There are two sub-types of secondary corridors.

A. Corridors that should not receive additional development that would contribute to loss of habitat outside of the corridor.

B. Corridors that should be phased out if and when possible.

3. Planned: Corridors in which facilities have not yet been constructed. These have been reduced to a limited number and are listed individually in Table 1 ("BCCP Planned Corridors"). Additional preserve acreage was included in the final total 30,428 acres of the BCCP preserves in order to mitigate (at a ratio of 5:1) in advance for the potential future use of planned corridors within the preserves by those utilities associated with the Permit Holders/Managing Partners. However, any anticipated future loss of habitat will need to be offset by those service providers undertaking the action who are not associated with the Permit Holders/Managing Partners. Compensation for impacts on the preserve will be negotiated between the Coordinating Committee Secretary and the utility and may take the form of impact assessments, annual licensing agreements, and/or Utility Participation Certificates. Also, compensation will be required by certain COA utilities which have not specifically dedicated land within the preserves.

Existing Facilities

An inventory of existing facilities reveals that several hundred already cross or intrude in the area designated for purchase and/or dedication of habitat preserve. However, some providers did not participate and not all records were located. Furthermore, at the time these guidelines were formulated, the precise boundaries of the habitat preserves were unknown.

Unless otherwise designated, all existing easements, rights-of-way and sites of all existing facilities shall be designated as Secondary A type infrastructure corridors, whether or not they are located or shown on maps prior to BCCP approval. However, existing service lines (feeds) to individual structures shall be designated as Secondary B type corridors. The Coordinating Committee Secretary shall recognize the rights that accompany the existing easements, rights-of-way (ROW) and sites, subject to the new construction and operation and maintenance (O&M) guidelines in this section.

For the purposes of the BCCP application documents, no attempt has been made to document the precise locations or characteristics of existing facilities and their corridors. This will be done in the Preserve Land Management Plans.

As individual properties are acquired and/or dedicated for habitat, the existing infrastructure easements, ROW and sites shall be precisely located (previous survey documents may be adequate). As the Preserve Management Plans are created for each preserve unit, these plans shall document the existing easements, ROW and sites, and show each of them as infrastructure corridors.

Opportunities will be sought in the future to eliminate the existing corridors that are no longer needed. However, the corridor designation of existing easements, ROW and sites can be removed only with the consent of all service providers owning an interest in the easement, ROW or facilities.

Replacement facilities and new facilities may be placed in existing corridors in accordance with the guidelines for new construction and O&M, and in compliance with the restrictions associated with the type of corridor. Any utility provider may negotiate an agreement with the owner of the easement or ROW to share the use of such easement or ROW, subject to the new construction and O&M guidelines in this section.

Roadway Corridors

Table 2 ("BCCP Roadway Corridors") lists the public roadways that cross or border the designated preserve areas, and it lists the corridor type that each is designated. For Primary type corridors, the table also provides the maximum widths anticipated to be needed for future expansion (or alteration) of the existing corridors. The Primary type corridors usually provide for the travel needs of broader areas. In virtually all roadway corridors, other service providers are involved. In some cases, these corridors bordering designated habitat face difficult space and alignment constraints.

In some cases, a negotiated realignment of a portion of the roadway corridor may be necessary to overcome constraints. In such cases, the corridor realignment shall be negotiated between the preserve landowner, the service provider seeking the realignment, the Coordinating Committee Secretary, and the Coordinating Committee. The acquisition of new easements and ROW shall be negotiated between the preserve landowner and the service provider seeking the easements or ROW.

Electric Corridors

Electric transmission corridors contain higher voltage electrical lines, the purpose of which is to transport electricity around the system to various substation locations. Transformers at the substation locations "step down" the voltage to a distribution voltage level.

Distribution lines are routed to the individual commercial and residential customers to provide service. Electric distribution corridors do not contain transmission lines.

Transmission lines have wider easement requirements and clearances from the ground and other objects due to the higher voltages and design code requirements. These lines can be built with steel mono-pole structures, steel lattice towers, or wood poles. These lines are typically accessed for purposes of routine maintenance or emergency situations such as storm-related outages.

Distribution lines are typically seen as the smaller wood structures built parallel to roadways, and which also have telephone and cable service lines attached. Distribution lines are sometimes laid underground.

Electric transmission lines shall be designated as Primary B type corridors. Distribution lines will be designated as Secondary A type corridors, unless located within roadways of higher designation or transmission line corridors.

Planned Corridors

The need for a limited number of new corridors is anticipated. Planned corridors should be restricted to the absolute minimum required to insure public safety and essential service. Every effort will be made by the service providers to design these new corridors so that the impact on habitat will be minimized. Table 1 provides summary information on each planned corridor. These corridors shall be incorporated in the Preserve Land Management Plans. The preserve landowner shall allow for the acquisition of easements for approved corridors. The planning and implementation of the new corridors shall be negotiated between the preserve landowner, the service provider or designated entity seeking the easements, the Coordinating Committee Secretary and the Coordinating Committee.

Special Use Tracts

A few tracts within the designated acquisition areas must be distinguished from the preserve tracts. Most of these sites contain some habitat for species of concern. Consequently, separate management plans will be developed for each individual tract to accomodate its special uses and to protect the species of concern.

1. Zilker Park and the Lower Barton Creek Greenbelt from Gus Fruh District Park at the horseshoe bend to Town Lake. This area is heavily congested with existing facilities and there will probably be a need for an unknown number of new facilities in the future. The park is heavily used for public recreational activities and contains numerous paved roads and parking lots. More access and parking may be added. The Fish and Wildlife Service gave no credit for Zilker Park as habitat preserve, nor has it been included in the tally of City of Austin preserve acreages. While Barton Springs pool does contain a species of concern, other management strategies shall be employed rather than habitat management of the park. The Lower Barton Creek Greenbelt from Gus Fruh District Part to Zilker Park has been included in the tally of City of Austin preserve acreages. Consequently, this section of the Greenbelt is to be designated a special BCCP recreational area with an individual management plan to be implemented by the City of Austin.

2. The L.C.R.A. Mansfield Dam Resource Area and County Recreational Area. Some portions of this tract resemble Zilker Park with respect to facilities and public recreational use, existing and future. No habitat credit was given for this acreage, nor was it included in the tally of LCRA preserve acreages.

3. Sandy Creek Park, McGregor (Hippie Hollow) Park, and Tom Hughes Park. These three Travis County/LCRA parks are also existing well-used recreational areas. No habitat credit was given for their acreages, nor were they included in the tally of LCRA preserve acreages.

4. The Water Treatment Plant No. 4 site. This 240.4-acre tract was purchased with utility revenue bond funds and reserved for the City's next major water treatment plant, a facility that will be critical to serving the future needs of Austin and to utilizing Austin's full state-appropriated water rights. The site is to contain a proposed City of Austin fire/EMS station, and the Lake Travis electric substation, the latter of which will be required for reliable service to the water treatment plant. In addition, a regional stormwater detention pond may be located on the site rather than downstream in the preserve. The Fish and Wildlife Service did not give habitat credit for the acreage of the site to be occupied by public facilities. An individual site management plan shall be developed for this tract that benefits the preserve while providing the public functions noted above. The property will be managed by the City of Austin, and those portions shown on the site plan to be used intensively for public facilities shall be removed from the area designated for preserve acquisition.

5. The isolated area within the designated preserve that comprises the portion of the Ullrich Water Treatment Plant site north of Red Bud Trail, and associated electrical facilities (including a substation), as well as an adjacent tract owned by the University of Texas near Tom Miller Dam. Once again, no habitat credit was given for this land. It is too small and isolated for effective management by the preserve authority. Although most of the Ullrich WTP site will be used for future facility expansion, the sloped areas near Bee Creek will be managed by the City to protect the areas of occurrence of species of concern. The site management plan shall retain this area (estimated to be about 24 acres) in the designated preserve system. The remainder of the two properties are to be removed from the area designated for preserve acquisition.

6. The Forest Ridge Water Reservoir and Pump Station Site is fenced and used exclusively for its water system functions. These facilities are critical today in providing water service to portions of NWA and NWB pressure zones. This 2.2-acre site is to be removed from the area designated for preserve acquisition.

7. The approximately 2-acre site for the WTP #4 raw water intake gate shaft facilities is to be removed from the area designated for preserve acquisition. A temporary construction easement of up to four acres will be needed adjacent to this site. The temporary easement can be used for habitat both before and after plant construction.

8. The Travis County Water Control and Improvement District (WCID) #17 water reservoir and pump station site, which will include the proposed Travis County Rural Fire Prevention District (RFPD) #5 fire station, is to be removed from the area designated for preserve acquisition.

9. If the small Guildford Cove Reservoir and pump station site is found to be within the area designated for preserve acquisition, then it also is to be removed from this designation.

10. The Uplands Water Treatment Plant site is currently about three and a half acres in size. It is proposed to be purchased by LCRA along with an additional five acres to accomodate plant expansion. This 8 1/2 acre site is also to be removed from the area designated for preserve acquisition.

Access Routes. Not all sections of infrastructure corridors can be accessed by routes within the corridors themselves. Some corridors and sites require access routes outside the corridors. The Preserve Land Management Plans and the Coordinating Committee Secretary shall allow access

routes to new and existing corridors, for utility employees and designated contractors, although alternative alignments of similar serviceability may be negotiated to replace existing routes in accordance with the guidelines for new construction and O&M. Access routes that lie outside infrastructure corridors shall be designated as Secondary B type corridors.

Preserve Land Management Plans will identify access routes to utility facilities and easements. Applicabale security precautions along private access routes may be necessary to ensure that unauthorized public access to preserve lands from such routes is not facilitated. Changes in access needs for utility activities should be negotiated with the Coordinating Committee Secretary. Utilities shall not allow non-utility related activities within their easements or access routes that might threaten preserve integrity.

III. Guidelines for New Construction in Approved Corridors

The purpose of these guidelines is to ensure that construction activity in approved infrastructure corridors will be conducted in the most environmentally sound, time saving and cost effective means possible. Coordinating Committee Secretary review and approval for construction activity within these approved corridors will be required (unless it is pre-approved by the Coordinating Committee Secretary).

Accidental Disturbance of Habitat

During project implementation, there may be times when habitat of species of concern is accidentally disturbed. Accidental disturbance shall mean the following:

1. Damaging, destroying, or removal of active nesting habitat;

2. Exposure of any significant karst features during excavation which have potential to be cave invertebrate habitat not yet designated by the Coordinating Committee Secretary.

In the event of such disturbance, the activity shall stop and the Coordinating Committee Secretary shall be notified within 24 hours of the disturbance. Construction cannot be reinitiated until written approval has been received by the Coordinating Committee Secretary.

Preliminary Engineering and Surveying

During the preliminary phase of a project it may be necessary to obtain data from the field in order to begin the design process. To obtain this data, it may be necessary to survey the proposed construction site and or corridors, obtain soil borings, dig test holes or use other means of acquiring information necessary to begin design and conduct environmental impact or other studies. Such activities have the potential of disturbing species of concern within their designated habitat areas within the corridors.

Notice shall consist of written communication with the Coordinating Committee Secretary at least three (3) working days in advance of the proposed activities during the nesting season (March 1 to September 1).

Any drilling, boring and digging within areas designated as potential cave invertebrate habitat shall be defined as minor construction.

Design

The design phase of a project is one of the most critical components in making a project successful. Proper planning is essential on any construction project in order to have a minimal effect on species of concern or their habitat. Therefore, the following guidelines have been developed to ensure accurate exchange of information and proper coordination during the design process, thus resulting in a comprehensive environmental review during the design phase prior to construction.

A. Minor Construction

Minor construction shall be defined as construction that will only require disturbance of an area no more than 3,000 square feet. If the proposed construction meets this criteria, the following will be required:

1. Construction plans or a sketch outlining the proposed construction activity shall be submitted to the Coordinating Committee Secretary ten (10) working days prior to construction.

2. The Coordinating Committee Secretary shall have five (5) working days from receipt of the construction plans submitted by the governmental agency or utility to approve, disapprove, or approve with modifications.

3. If the submitting utility provider or governmental agency has a proposed disturbance exceeding 3,000 square feet that may be considered minor, a written request may be submitted to the Coordinating Committee Secretary. The Coordinating Committee Secretary shall grant or deny the request within ten (10) working days of receipt. If the request is denied, major construction guidelines shall apply.

B. Major Construction

Major construction shall be defined as construction that requires the disturbance of an area greater than 3,000 square feet. If the proposed construction meets this criteria, the following will be required:

1. The Austin Area Utility Coordinating Council (AAUCC) has been established in the Austin area to foster an open exchange of information among private and public utilities, governmental agencies and construction related organizations and to promote cooperation among said groups. Construction plans shall be submitted to the Coordinating Committee Secretary and the AAUCC sixty (60) calendar days prior to the proposed construction activity. The AAUCC shall have no authority to approve or disapprove the proposed construction, but shall serve as a coordinating body between governmental entities and utility companies sharing corridors.

2. The Coordinating Committee Secretary shall have thirty (30) calendar days from receipt of the construction plans submitted by the governmental agency or utility to approve, disapprove, or approve with modifications.

3. The approval of construction plans by the Coordinating Committee Secretary does not relieve the engineer from the responsibility of securing approvals required by federal, state and local laws and ordinances.

Construction

In order to ensure the protection of the endangered species and habitat, the following guidelines have been established and require strict compliance during the construction phase:

A. Notification. Prior to any construction activity defined as major construction within the preserve corridor, the party responsible for construction shall conduct a pre-construction conference with all parties affected by and involved in the construction of the project. The Coordinating Committee Secretary or their representative shall be notified in writing five (5) working days in advance of the meeting. The conference will be held to discuss detailed information concerning the project to ensure maximum protection of the species and preserve.

B. Limits of Construction. Construction activity shall be confined to the areas designated as approved infrastructure corridors. The use of areas other than approved corridors for staging areas and access roads, shall require prior approval of the Coordinating Committee Secretary and/or USFWS.

C. Timing of Construction. Construction activity may occur during the nesting season (between March 1 and September 1) only with the approval of the Coordinating Committee Secretary, and only if site clearing to remove potential nest sites of endangered species has occurred prior to the nesting season. No nests of endangered species will be allowed to be disturbed once they become occupied during nesting season. The Coordinating Committee Secretary shall allow the continuation of construction activities for major projects that cannot be started and completed outside of the nesting season, and for which the costs of starting and stopping construction are excessive.

D. Erosion, Sedimentation Controls and Surface/Ground Water Quality Protection Systems. Erosion and sedimentation controls and water quality protection system items if required, shall meet guidelines established by the responsible governmental authority, and be installed prior to starting construction. Prior to adoption of guidelines by the responsible governmental authority such installation shall be made in accordance with the rules and regulations of the City of Austin, LCRA, Travis County or Texas Department of Transportation, whichever may apply. The erosion and sedimentation controls and water quality protection systems shall be maintained until revegetation is established and restoration is accepted by the Coordinating Committee Secretary.

E. Location of Facilities Within Approved Corridors. New construction of facilities will only be allowed at locations shown on the approved construction plans. If there is the possibility that a change in the vertical or horizontal location of facilities might have an impact on the endangered species habitat, the change shall require prior notification of the Coordinating Committee Secretary. The Coordinating Committee Secretary shall respond within three (3) working days.

F. Storage of Materials. Any hazardous chemicals and or materials shall be contained in a safe place with the person or entity performing the work taking whatever precautions are necessary to reduce the risk of such materials being accidentally released into the environment. In all cases, the use of these products shall be minimized and there shall be compliance with all laws and ordinances concerning the storage and use of these materials. The person or entity performing the work shall have an emergency response plan in place in case a spill should occur.

G. Restoration. Restoration will require revegetation of all disturbed areas using native grasses, forbs, and shrubs to ensure compatibility with the surrounding habitat, as detailed in the approved construction plans. All disturbed areas shall be monitored until revegetation is established and restoration is accepted by the Coordinating Committee Secretary.

H. Final Acceptance. When all construction activity is complete, the party responsible for the construction activity shall notify all entities affected by the construction, including the Coordinating Committee Secretary for final acceptance of restoration. The Coordinating Committee Secretary shall have 2 weeks from notification to give written final acceptance of restoration or define what additional measures are necessary to obtain final acceptance of restoration.

IV. Guidelines for the Operation and Maintenance of Facilities Within BCCP Preserves

The Coordinating Committee Secretary shall be notified of any planned maintenance within preserves by the various service providers or their contractors. The notification shall contain a brief description of planned work and approximate dates the work will be performed.

Some maintenance activities are required by Federal, State, County, or City laws and ordinances. The Coordinating Committee Secretary must make provisions that enable the service providers to abide by these legal requirements. The Coordinating Committee Secretary and the service providers will seek resolution of any conflicts associated with maintenance of the preserves and legally required facility maintenance activities.

Pre-Approved Maintenance

Service providers shall work with the Coordinating Committee Secretary to define and secure pre-approval for operation and maintenance activities that may occur within a given corridor. Where such maintenance activities are repetitive, mutually agreeable schedules shall be established, and notification shall not be required for every entry.
Problems identified during pre-approved operation and maintenance activity shall be scheduled with the Coordinating Committee Secretary for repair. Structural, facility, or equipment problems that threaten reliability or safety must be handled immediately. See "EMERGENCY MAINTENANCE."

Emergency Maintenance

For the purposes of this section, an emergency shall involve an existing condition of, or imminent threat to, public health, safety, property damage, or loss of service.

The various service providers may need to perform emergency maintenance within the preserves due to such conditions as equipment failure, pending equipment failure, storm damage, downed tree removal, culvert clean-out, emergency facility repair and maintenance, or other circumstances beyond the service provider's control. The equipment used during the emergency can vary widely and is dependent upon the circumstances surrounding the emergency. Work done under these circumstances may impact species of concern; however, it shall be done in such manner as to minimize disruption.

Efforts shall be made to contact the Coordinating Committee Secretary for advice and guidance during emergency maintenance work. However, the service providers must and will move quickly to eliminate the emergency condition. Written notification describing the emergency maintenance work done shall be sent to the Coordinating Committee Secretary within five (5) working days after any such work is completed.

Scheduled Maintenance

The Coordinating Committee Secretary shall be notified in advance of any maintenance activities not covered under "Pre-Approved Maintenance" and "Emergency Maintenance." The planned work and schedule shall be submitted in writing to the Coordinating Committee Secretary for review and comment, and the work shall proceed under the terms negotiated between Coordinating Committee Secretary and service providers. This type of scheduled work could consist of major facility replacement, repair and maintenance, installation of cross and driveway culverts, grading and re-shaping of ditches, and clearing of right-of-way.

Maintenance of Corridors

1. Access to all facilities shall be established and maintained. As the management plan for each preserve tract is developed, the Coordinating Committee Secretary shall work closely with the service providers to designate specific access routes to all structures and facilities, consolidating access routes where possible and minimizing impact on the species of concern.

   The access routes may require some clearing at the time access is needed. The maximum width of these access routes shall be twenty feet (20'), except that they may be wider in any curve to allow for clearance of truck booms.

2. Existing cleared areas near structure sites shall be used where possible to reduce clearing requirements. Existing low-lying vegetation at structure sites shall be preserved to the maximum extent possible. If needed, additional clearing at structure sites shall be limited. Service providers shall work closely with the Coordinating Committee Secretary whenever manipulation of vegetation is required to ensure minimal impact on species of concern.

3. Clearing and trimming along the corridors shall be limited to the following:

   a. Minimum clearing for surveying purposes (typically a four foot [4'] line of sight).

   b. Mechanical removal or trimming of vegetation detrimental to the operation and maintenance of facilities. Chemicals for vegetation control may be used only within the guidelines approved by the Coordinating Committee Secretary. Requests to use chemicals may be approved on a case-by-case basis.

   c. Removal of all fast growing trees -- such as Chinese Tallow, Chinaberry, Cottonwood, Mulberry, and Hackberry trees -- directly under electric transmission line conductors, and trimming of tree limbs to provide at least twenty (20') feet of clearance from transmission conductors.

   d. Trimming of trees or limbs to provide at least six feet (6') of clearance from electric distribution conductors for span lengths up to two hundred feet (200'). If span

lengths exceed two hundred feet (200'), an additional one foot (1') of clearance will be required for each one hundred fifty feet (150') length.

e. Clearing and trimming guidelines for roadway rights-of- way are stated in the Travis County Roadway Clear Zone Criteria (Table 3).

4. All trees and limbs cleared from the corridors shall be shredded, chipped, or hauled from the site. With the approval of the Coordinating Committee Secretary, trees and limbs or shredded mulch cleared from a corridor may be left in piles outside the corridor for use in remediation projects. Special handling for oak trees exhibiting oak wilt mya be necessary.

5. Sedimentation control measures will be installed and maintained in accordance with guidelines established by the Coordinating Committee Secretary. Prior to adoption of uniform guidelines by the Coordinating Committee Secretary, such installation shall be made in accordance with the rules and regulations of the City of Austin, LCRA, Travis County or Texas Department of Transportation, whichever may apply.

6. All excavated materials requiring disposal shall be removed from the corridor to an approved dump or fill area.

7. Any cleared land areas shall be re-vegetated with native grasses, forbs, and/or shrubs to re-stabilize vegetative cover within the approved time period.

8. The Coordinating Committee Secretary and the service providers may develop and agree to clearing guidelines on a site-by-site basis that may modify and/or supplement the guidelines stated in this section.

TABLE 1 BCCP PLANNED CORRIDORS

No.	MacroSite & USGS Quad	Primary User	Description
2	Lake Travis Bee Cave Quad	COA Electric*	This corridor is established to provide 12.47 KV overhead electric feeder ties with existing electric distribution facilites. These feeder ties are necessary to provide new electric service to property adjacent to the preserve. In addition, these corridors are necessary due to the limited availability of feeder tie routes due to the development of the BCCP. The BCCP, as proposed, creates limits for electric line extensions and isolates existing feeders and substations, reducing the reliability of the distribution system without the corridors. Corridor width -- 15 feet.
3	Lake Travis Bee Cave Quad	COA Electric	Same as #2 above.
5	S. Lake Austin Bee Cave Quad	COA Electric	Proposed 138 KV transmission circuit from the Lakeway substation to the Trading Post substation appears to run near or alongside a habitat area. This circuit would integrate proposed substations and provide increased overall system reliability by completing a loop in the COA electric transmission and substation system. Will probably require 100-ft. wide ROW, none of which is to actually be inside the habitat preserve.
7	N. Lake Austin Bee Cave Quad	COA Electric	Same as #2 above.
9	Barton Creek Bee Cave Quad	COA Electric	Same as #2 above.
10	Barton Creek Bee Cave & Austin W. Quads	COA Electric	Same as #2 above.
16	Barton Creek Austin W. Quad	COA Electric	This distribution line will be utilized to tie existing 12.47 KV overhead feeders to ensure the reliability of the electric distribution system in the area and to prevent extended outages. 15-ft. width.
21	Barton Creek Austin W. Quad	COA Electric	Same as #16 above.
22	Barton Creek Austin W. Quad	COA Electric	Same as #16 above.
27	N. Lake Austin Austin W. Quad	COA Electric	This distribution line, with the others listed here, will provide ties between existing 12.47 KV overhead electric feeders. The Electric Utility has attempted to complete a number of these ties in the past. Property owners have been reluctant to grant easements due to development plans being unresolved or the property potentially going on the market. Routes along City Park Road and other roads have met with resistance from residents of the area due to the scenic views from the road. The route of this specific facility is expected to be along an existing road and telephone lines. 15-ft. width.

BCCP PLANNED CORRIDORS

No.	MacroSite & USGS Quad	Primary User	Description
31	N. Lake Austin Austin W. Quad	COA Electric	This distribution line will provide a tie between existing 12.47 KV overhead electric feeders.
33	N. Lake Austin Jollyville Quad	COA Electric	Same as #31 above.
38	Cypress Creek Jollyville & Mansfield Quads	COA Water/WW	Intake tunnel shafts for WTP #4 raw water supply.
41	Cypress Crk & Bull Creek Jollyville Quad	COA Water/WW	Raw water tunnel -- gate shaft to WTP #4.
43	Bull Creek Jollyville Quad	COA Electric	Proposed transmission line to connect the Lake Travis substation to the existing transmission system. Two separate transmission corridors provide required reliability for the treatment plant. ROW widths of up to 50 feet may be required.
44	Bull Creek Jollyville Quad	COA Electric	Same as #43 above except that it parallels the existing River Place Blvd. Directly ties together the River Place and Lake Travis substations.
46	Bull Creek Jollyville Quad	COA Water/WW	Route of a 48-in. water main from WTP #4 to the existing 48-in. Forest Ridge NWB main. This was anticipated to be open cut construction. Minimum 25-ft. width.
51	Bull Creek Jollyville Quad	COA Electric	Necessary to provide a route for 12.47 KV overhead distribution feeders from the new Angus Valley substation to areas near Forest Ridge.
54	Bull Creek Jollyville Quad	COA Water/WW	Route of a very large transmission main from WTP #4 to the NWA pressure zone. The route through the habitat preserve is to be tunnelled.
101A	Barton Creek Bee Cave Quad	COA Electric	Proposed 138-KV transmission circuit from the existing Patton Substation to the proposed Hwy 71 and Trading Post Substations. This circuit would integrate proposed substations and provide increased overall system reliability by completing a loop in the City electric transmission and substation system. 50 feet of additional easement parallel to Hwy 71 ROW will be required.
119	Cypress Creek Jollyville & Mansfield Quads	Cedar Park Water/WW	This is a proposed expansion of an existing corridor. A raw water intake main from Lake Travis to the City of Cedar Park is within a 30 ft.-wide easement. The proposal is to expand the easement another 25 feet (to 55 feet total) and place a second raw water intake line within it.

* Electric corridors listed here may be used by other service providers, such as Southwestern Bell and Austin CableVision.

TABLE 2 BCCP ROADWAY CORRIDORS

NO.	CORRIDOR DESCRIPTION	DESIGNATION	EXISTING R.O.W.	MAX WIDTH NEEDED
101*	**SH 71 (W)****	**Primary A**		
	RM620 - US290 (W)		120-180 (MAU4)	350
102	**RM 2244 (Bee Cave Rd.)/SH45**	**Primary B**		
	SH71(W) - 1 mile east (SH45)		130-200 (MAD4)	450
	1 mile east - Crystal Creek Dr.***		200-250 (MAD4)	450
	Crystal Creek Dr. - Barton Cr. Bl.***		155-400 (MAD4)	450
103	**Southwest Parkway**	**Secondary A**		
	SH45 - SH71 (W)		---	
	SH71 (W) - Wm. Cannon		150 (MAD6)	
104	**Travis Cook Rd/Barton Creek Blvd.**			
	S.W. Pkwy - Lost Creek Blvd.	**Primary A**	60 - 80 (MNR2)	120
105	**Old Bee Cave Rd/Arterial #12**			
	Hwy 71 - S.W. Parkway	**Secondary A**	60 (MNR2)	
106	**Catholic Diocese (private drive)**	**Secondary A**	?	
107	**Intersection Modifications at**			
	SH71/RM 2244/SH45	**Primary A**	?	500
108	**Loop 360**	**Primary A**		
	US 290 (W) - Walsh Tarlton		240-450 (MAD4)	500
	Walsh Tarlton - Westlake		240-325 (MAD4)	450
	FM 2244 - Lake Austin		290-630 (MAD4)	680
	RM 2222 - US 183		250-635 (MAD4)	685
109	**Loop 1 (MoPac Blvd)**	**Primary B**		
	US 290(W) - Loop 360		540-1200 (PKY4)	(Add. 100)
110	**Lost Creek Blvd.**	**Primary B**		
	Loop 360 - Travis Cook Rd.		80 (MNR2)	110
111	**City Park Road**	**Secondary A**		
	City Park - RM 2222		(70MNR2)	

NO.	CORRIDOR DESCRIPTION	DESIGNATION	EXISTING R.O.W.	MAX WIDTH NEEDED
112	**RM 2222 ****	**Primary A**		
	Riverplace Blvd. - Tumbleweed		100-180 (MAU4)	400
	Tumbleweed - Jester Blvd.		100-240 (MAU4)	400
113	**Spicewood Springs Road**	**Primary B**		
	Loop 360 - Old Lampasas Trail		70 (MNR2)	120
114	**RM620/SH 45**	**Primary A**		
	SH 71 (W) - Debba Ln.		120-250 (MAD4)	300
	Debba Ln. - Quinlan Park Rd.		120-250 (MAU2)	300
	Quinlan Park Rd. - RM 2222 (SH45)**		100-250 (MAU2)	450
	RM 2222 - US 183(SH45)**		100-150 (MAD4)	450
115	**Commanche Trail**	**Secondary A**		
	RM 620 - Oasis Bluff		50 (MAU2)	
	Oasis Bluff - Terminus		50 (MAU2)	
116	**Bullick Hollow Road**	**Secondary A**		
	RM 620 - Oasis Bluff		50 (MNR2)	
	Oasis Bluff - FM 2769		50 (MNR2)	
118	**RM2769 (Volente Rd.)**	**Primary B**		
	Anderson Mill Rd. - RM620		100-120 (MNR2)	
121	**Lime Creek Road**	**Secondary A**		
	Volente - Bullick Hollow Rd.		80 (MNR2)	
	Bullick Hollow Rd. - RM 620		100-120 (MNR2)	
124	**Oasis Bluff**	**Secondary A**		
	Commanche Trail - Bullick Hollow		30	
125	**Four Points Drive**	**Secondary A**	100	
NA	All other dedicated public roadways that may cross or infringe on designated preserve, including Greenshores Drive, Oak Shores Drive, Pearce Road, Murfin Road, Kollmeyer Drive, Two Coves Drive, Westcliff Place., etc.	**Secondary A**	---	

KEY TO ROADWAY CLASSIFICATIONS:

FWY	Freeway
PKY	Parkway
EXP	Expressway
MAD****	Major Arterial - Divided
MAU	Major Arterial - Undivided
MNR	Minor
COL	Primary Collector

NOTES:

* Need additional utility easement for electric transmission facilities: 50 feet in addition to widths listed along this section of State Highway 71.

** SH71, RM 620 and RM2222 are to be mitigated at a 5 acre to 1 acre ratio where preserves abutt the roadways on both sides.

*** No offsets or mitigation necessary for the "lobed" preserve acquisition areas east of Creeks Edge Parkway.

**** A "MAD" designates a roadway divided either by a raised median, flush center left turn lane, or a central drainage ditch. The choice of one or the other is to be made in the roadway design and construction process.

TABLE 3

TRAVIS COUNTY ROADWAY CLEAR ZONE CRITERIA

	DESIGN SPEED	CLEAR ZONE WIDTH
With roadside drainage (Rural section)	45 MPH or greater 40 MPH or less	30' min.* 16' min.*
With curb & gutter (Urban section)	ALL	6' min.**
Access roads within County-owned or leased property (parks, detention center, etc.)	ALL	6' desirable

* May be reduced to an absolute minimum of 10' when the average daily traffic volume is less than 750. May also be reduced in limited cases consistent with AASHTO criteria.

** Trees may be planted in the center of medians measuring at least 14' face-of-curb to face-of-curb if the trees do not restrict vehicle sight lines.

NOTES:

1. The clear zone is the area adjacent to the roadway that allows an errant vehicle to recover without striking an unyielding object. It is measured from the edge of the traveled lane (typically the outside edge line or face-of-curb).

2. Trees growing to a diameter of 6" or less at maturity are considered YIELDING OBJECTS; trees growing to a diameter of greater than 6" at maturity are considered UNYIELDING OBJECTS.

3. Unyielding trees may remain in the clear zone if protected with guardrail installed consistent with accepted engineering practice. This typically requires a minimum of 2' from the tree to the back of the guardrail. Yielding trees typically should be set back a minimum of 3' from the edge of the traveled lane.

4. Vertical clearance from roadway surface to overhanging tree branches shall be a minimum of 14'6" on arterial roadways. Lesser clearances are acceptable on lower classes of roadways.