

**DRAFT ENVIRONMENTAL ASSESSMENT FOR THE  
AMENDED CONCORDIA UNIVERSITY TEXAS  
HABITAT CONSERVATION PLAN**

Travis County, Texas

November 2020

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### **List of Acronyms**

CFR	Code of Federal Regulations
COA	City of Austin
EA	Environmental Assessment
ESA	Endangered Species Act
FM	Farm-to-Market Road
GCWA	Golden-cheeked Warbler
HCP	Habitat Conservation Plan
HHS	U.S. Department of Health and Human Services
ITP	Incidental Take Permit
JPS	Jollyville Plateau Salamander
MSA	Metropolitan Statistical Area
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NRHP	National Register of Historic Places
TCEQ	Texas Commission on Environmental Quality
TPWD	Texas Parks and Wildlife
USC	U.S. Code
USFWS	U.S. Fish and Wildlife

# Environmental Assessment for the Amended Concordia University Texas Habitat Conservation Plan

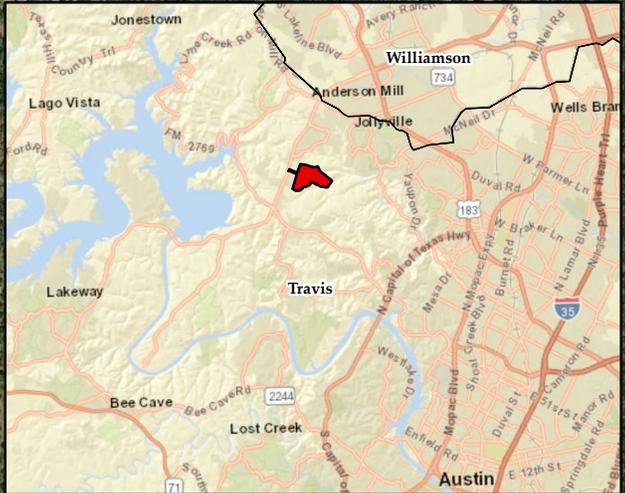
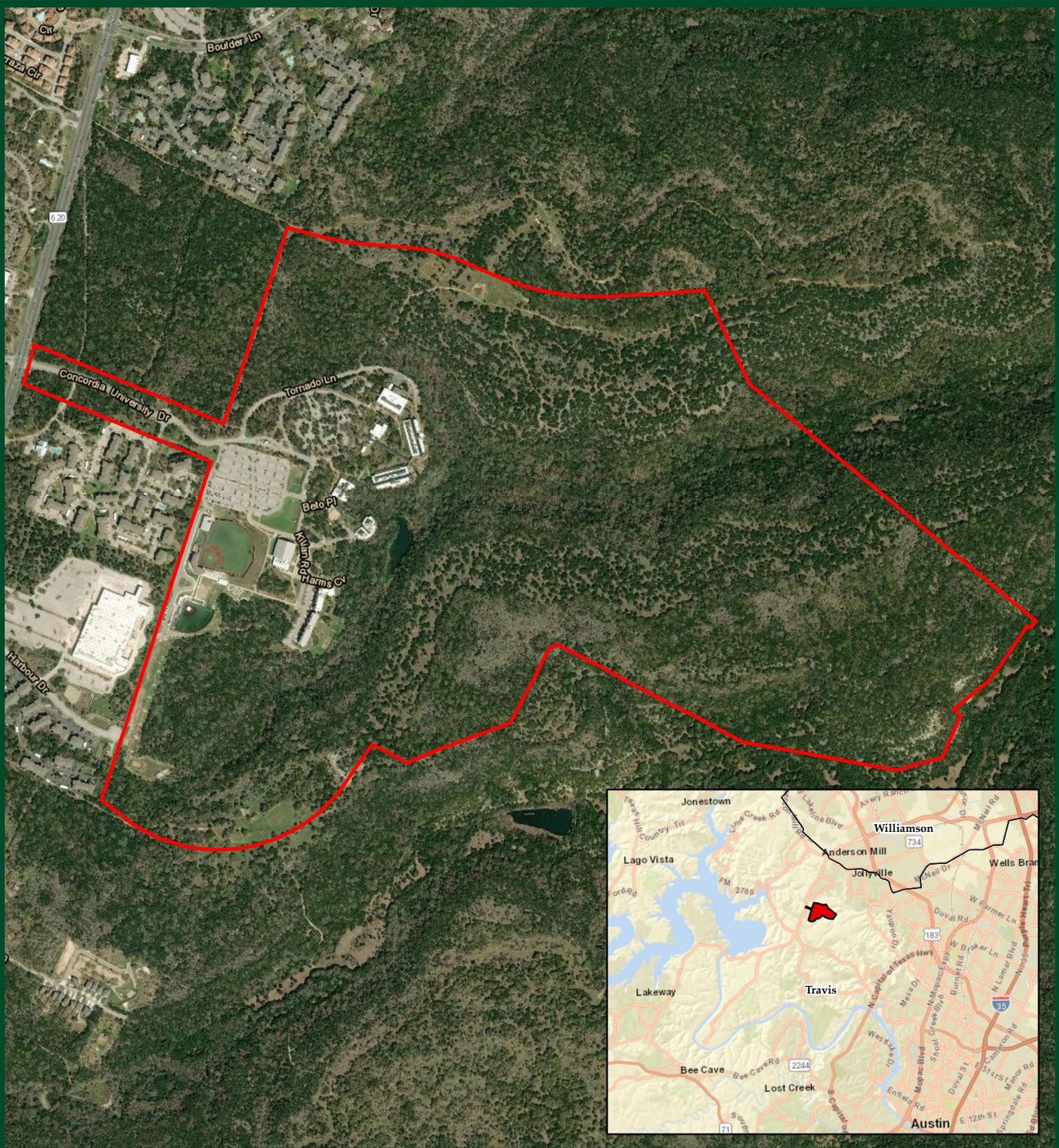
November 2020

## 1.0 INTRODUCTION, NEED, AND PURPOSE

This Environmental Assessment (EA) has been prepared in accordance with the requirements of the National Environmental Policy Act (NEPA) (42 U.S. Code [USC] 4321-4327) regarding the amendment of an existing Incidental Take Permit (ITP) (TE-827597-3) under section 10(a)(1)(B) of the Endangered Species Act of 1973, as amended (ESA) to the Concordia University Texas property (the Permittee) for the development, operation, and maintenance of portions of the 440-acre property (Property) located in Travis County, Texas (Figure 1). The Permittee submitted an Amendment of the Habitat Conservation Plan (HCP) that will add additional incidental take coverage for the Jollyville Plateau salamander (*Eurycea tonkawae*) associated with the present and future development, operation, and maintenance of the Concordia campus, and will provide a framework for implementation of Concordia's Master Plan for the campus throughout the next 30 years. This HCP also seeks to extend the terms of the ITP for 30 years from the date of approval. The Amended HCP and associated ITP will continue to provide incidental take coverage for the golden-cheeked warbler (*Setophaga chrysoparia*) (GCWA) and will add coverage for the Jollyville Plateau salamander (*Eurycea tonkawae*) (JPS) (jointly referred to as the Covered Species) associated with the present and future development, operation, and maintenance of the Concordia campus (referred to as Covered Activities).

The amendment of the ITP would continue to provide mitigation to the maximum extent practicable for the Covered Species and their habitat that may result from the Covered Activities. The Permittee's HCP describes the Covered Activities associated with the Property and the measures the Permittee would take to minimize and mitigate any impacts.

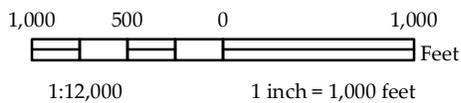
Section 9 of the ESA prohibits "take" of any federally-listed threatened or endangered wildlife. Take is defined as an action that may harm, harass, pursue, shoot, wound, hunt, kill, trap, capture, or collect members of an endangered species.



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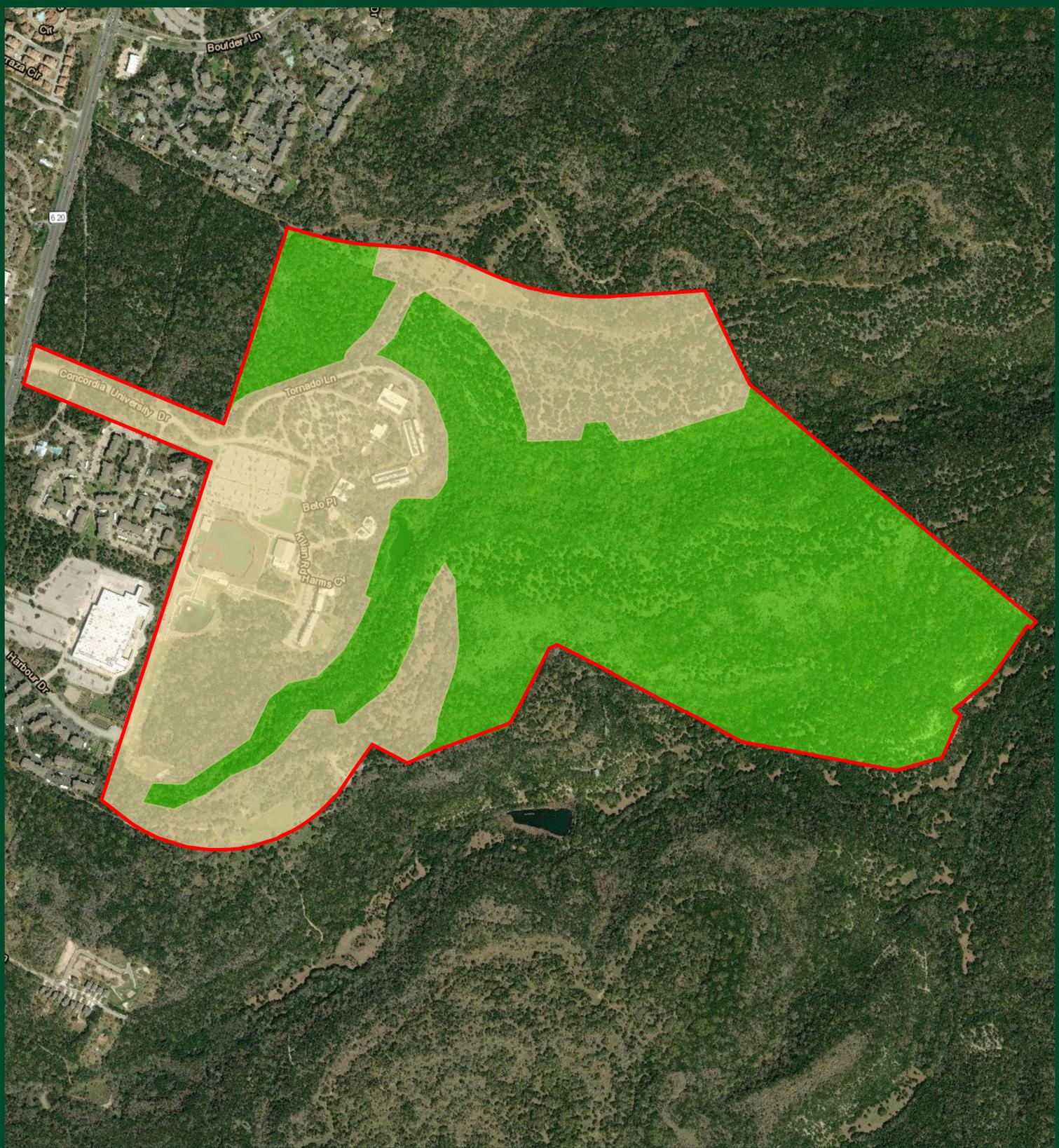


 **Concordia Property**

Section 10(a)(1)(B) of the ESA authorizes the U.S. Fish and Wildlife (USFWS) to issue a permit allowing take of protected species that is incidental to otherwise lawfully conducted activities. For the issuance of an ITP, the applicant must submit a conservation plan that satisfies the requirements of Section 10(a)(2)(A) of the ESA. Section 10(a)(2)(B)(ii) of the ESA allows non-federal entities to conduct otherwise lawful activities likely to cause take of endangered species, as long as the detrimental effects of the activities are minimized and mitigated to the maximum extent practicable. HCPs are the vehicles by which such take can be authorized, given that it will be minimized and mitigated to the maximum extent practicable.

The Property was originally owned and initially developed by Schlumberger in the 1980s, prior to the federal listing of the GCWA as endangered. Following the listing of the GCWA, Schlumberger processed an Environmental Assessment/Habitat Conservation Plan (EA/HCP) and was issued an ITP in 1997 with an established conservation easement covering approximately 250.62 acres of the overall 437.23-acre property (previously called 440-acre) (Figure 2). In 2005, Concordia purchased the 437.23-acre property with the goal of relocating their campus to this location, and in 2007 the ITP was transferred to Concordia. The JPS, which is present within the Property, was first identified as a candidate species by the USFWS in the 1994 Candidate Notice of Review and was federally listed as threatened with critical habitat in 2013. Concordia has recently completed a comprehensive Master Plan (Figure 3) to guide the development of their campus within the Property and seek to add incidental take coverage for the JPS to the ITP in order to provide certainty that the full implementation of the Master Plan will comply with the ESA.

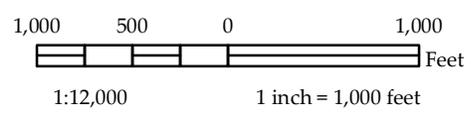
This EA supplements the NEPA analysis completed in 1997 in the EA portion of the EA/HCP. Since 1997, the affected environment and environmental consequences to select resources may have changed. For example, although effects to the JPS were considered during the 1997 process, the JPS was later listed as threatened. This EA presents an update to the affected environment for resources that may have changed and references back to the 1997 EA/HCP for resources that likely remain unchanged. Additionally, this EA analyzes the potential effects from implementing the proposed amendment HCP.



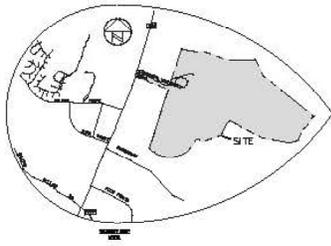
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-  **Concordia Property**
-  **Developable Area**
-  **Preserve**



**LEGEND**

---	PROPERTY LINE
---	PROPOSED CORRIDOR
---	EXISTING CORRIDOR
---	EXISTING OUTLINE



**Figure 3**  
**CONCEPTUAL MASTER PLAN**  
**CONCORDIA UNIVERSITY TEXAS**  
**PROPOSED MASTER DEVELOPMENT PLAN**  
 AUSTIN, TEXAS  
 JANUARY 2018

## **1.1 NEED AND PURPOSE**

This EA has been prepared to provide an assessment of potential impacts resulting from the Proposed Federal Action (approval of the final amended HCP and subsequent issuance of an ITP) on the human and natural environment.

### **1.1.1 *Need for the Proposed Action***

The USFWS's need for action is to amend the ITP consistent with the Permittee's HCP for the activities that have the potential to take Covered Species, pursuant to the ESA section 10(a)(1)(B) and the USFWS's implementing regulations and policies.

Concordia's need for this action is to add additional incidental take coverage for the JPS to its existing ITP and to allow for the present and future development, operation, and maintenance of the Concordia campus, and to provide a framework for implementation of Concordia's Master Plan for the campus throughout the next 30 years. In addition, this action will extend the terms of the ITP for 30 years from the date of approval.

### **1.1.2 *Purpose for the Proposed Action***

The Proposed Federal Action considered in this EA is the issuance of an amended ITP under section 10(a)(1)(B) of the ESA to the Permittee to authorize the incidental take of the GCWA and the JPS that is reasonably expected to occur as a result of Concordia's full implementation of the Master Plan while continuing to provide conservation benefits for the GCWA and the JPS.

### **1.1.3 *Decision to be Made***

Under the provisions of the ESA, the USFWS will amend the current permit for the incidental taking of a listed species if the application conforms to the criteria identified in section 10(a)(2)(B) of the ESA. The USFWS will document its ESA Section 10 assessment of the ITP and HCP in a Section 10 findings document. The USFWS will issue the amended ITP if the USFWS determines that the application meets requirements of the implementing regulations.

## **2.0 ALTERNATIVES**

The Council on Environmental Quality's NEPA regulations requires federal agencies to consider a range of alternatives to a federal action. This EA will review the impact of the amendment of the ITP (Proposed Federal Action) and the effect it is expected to have on the natural and human environment.

Given that the USFWS previously considered a range of project alternatives during its original EA/HCP (1997) review, the current range of alternatives is limited to approving or not approving the amendment of the HCP and ITP.

The 1997 EA/HCP presented five alternatives including:

- Proposed (Preferred) Action which consisted of light industrial development with utilities and roads on approximately 143.6 acres;
- Alternative Project Version I which consisted of light industrial development with utilities and roads on approximately 196 acres;
- Alternative Project Version II which consisted of light industrial development with utilities and roads on approximately 149 acres;
- Approved Proposed Development Area which would build out the full Schlumberger development plan on approximately 203 acres approved by the City of Austin in 1985; and
- No Action which would abandon the proposed project and no change to the 1997 existing conditions of the site would occur.

### **2.1 No Action Alternative**

For this EA, the No Action alternative would be to not approve the proposed amendment to the HCP. Concordia would have to seek other methods to comply with the ESA as it relates to the JPS in order to allow for the present and future development, operation, and maintenance of the Concordia campus. Additionally, when the current HCP expires, Concordia would have to seek other methods to comply with the ESA as it relates to the JPS and the GCWA as it implements the Master Plan for the campus throughout the next 30 years. The other methods include an application for permit renewal for GCWA without adding the JPS prior to expiration of its current ITP, avoiding take of listed species such that permit would be required, and requesting a separate permit for

individual construction projects on the Concordia campus. Any future mitigation that would occur would be based on individual project permits, if any were issued.

## **2.2 Proposed Action: Approval of the Amendment of the ITP**

The proposed action is to issue an amended ITP to Concordia that would require the implementation of the amended HCP including JPS mitigation and minimization measures. The Permittee could meet the construction needs of its Master Plan over the next 30 years and be permitted for incidental take of Covered Species according to the amended permit. Overall, approximately 27 acres of structures have been identified as needs within the 186.61 acres of developable space. These numbers are approximate and conceptual and were calculated to determine what amount of development would be adequate to provide for all needs while protecting the aquatic environment and ensuring the conservation of the JPS population on the Property. A conceptual design of the Master Plan is included as Figure 3. The full build out of Concordia's Master Plan is analyzed for direct, indirect, and cumulative effects in this EA.

Concordia proposes to construct the previously identified needs of its Master Plan throughout the developable area with the goal to increase on-campus residence to 1,000-1,200 residents and to increase overall enrollment to approximately 5,000-6,000 students. Concordia proposes to implement the Master Plan on their campus by establishing stream buffers and other environmental setbacks from sensitive features that will limit development in environmentally sensitive areas. These buffers and setbacks will be established in accordance with the standards established in the Texas Commission on Environmental Quality (TCEQ) Optional Enhanced Measures for the *Protection of Water Quality in the Edwards Aquifer (Revised) Appendix A to RG-348 – Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices* (September 2007) ("RG-348A").

## **3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES**

The 1997 EA/HCP presented the following resources in the Affected Environment: 1) Vegetation, 2) Wildlife, 3) Listed, Proposed, and Species of Concern, 4) Wetlands, 5) Geology and Soils, 6) Land Use, 7) Air Quality, 8) Water Quality, 9) Cultural Resources, and 10) Environmental Justice and Socioeconomics.

This EA will present an update to the condition and analysis of potential effects to the resources which are relevant to the HCP amendment. Resources to include soils, vegetation, wetlands and wildlife are not analyzed as part of this update to the EA because the analysis presented in the 1997 EA/HCP remains accurate with current conditions.

### **3.1 Regional Environmental Setting**

Travis County, Texas is in the Edwards Plateau ecoregion (Griffith et al. 2007). This ecoregion is characterized by mainly limestone. The karst topography contributes to the clear and cool streams in this ecoregion due to underground drainage. Shallow to moderately-deep soils on plateaus and hills and deeper soils on plains and valley floors are prominent in this ecoregion. Typical vegetation includes juniper-oak savanna and mesquite-oak savanna, however Ashe juniper (*Juniperus ashei*) has dominated this area because of its rapid seed dispersal and low browse palatability and the absence of fire. The region is used for livestock grazing, hunting, and exotic game management.

### **3.2 Geology**

Geology is described in the 1997 EA/HCP, which is incorporated herein by reference.

The areas under the Proposed Alternative that are proposed for development are underlain by the basal member of the Edwards Limestone Formation. Grading for new construction is not expected to result in significant geologic alterations because the area to be impacted will be the immediate surface layer. Any excavation will be minimized and completed in accordance with TCEQ Optional Enhanced Measures for the *Protection of Water Quality in the Edwards Aquifer (Revised) Appendix A to RG-348 – Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices* (September 2007) (“RG-348A”). Use of these measures will ensure any sensitive geologic features not already discovered and protected during the geologic assessment will be adequately protected upon discovery during the initial construction phase.

### **3.3 Soils**

Soils are described in the 1997 EA/HCP, which is incorporated herein by reference.

Surface soil changes will be minimal and will comply with Travis County and City of Austin (COA) construction codes for erosion and sedimentation control.

### **3.4 Vegetation**

The development area is approximately 140 acres and shown in Figure 2. The proposed development on the western plateau occurs in areas that have dense juniper/oak woodlands. The southern and northern plateaus contain open juniper-dominated woodland and some dense juniper/oak woodland.

The area of vegetation impacted by the Proposed Alternative is the same as the original EA/HCP and presented there.

### **3.5 Wetlands**

Wetlands are described in the 1997 EA/HCP, which is incorporated herein by reference.

No wetlands are present within the areas proposed for development and therefore none would be impacted.

### **3.6 Water Quality**

Water quality is described in the 1997 EA/HCP, which is incorporated herein by reference.

The Proposed Alternative will comply with local water quality codes and the TCEQ Optional Enhanced Measures for the *Protection of Water Quality in the Edwards Aquifer (Revised) Appendix A to RG-348 – Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices* (September 2007) (“RG-348A”). Any impacts resulting from the implementation of the Proposed Alternative will not be continuous for the duration of the incidental take permit, but rather, are anticipated to occur during periods of construction. Phases of construction for Concordia’s Master Plan will be spaced out over 30 years, will each be limited in duration, and will require compliance with local water quality codes, the Edwards Aquifer Rules, and Optional Enhanced Measures. Given each construction activity is temporally discontinuous, has a finite duration, and will require compliance with those water quality measures described

above, the Proposed Alternative is not anticipated to result in significant cumulative impacts to water quality.

### **3.7 Air Quality**

Construction related air quality effects include tree removal and additional vehicle use onsite. A reduction in the number of trees onsite may slightly reduce local air filtering capabilities. During the various phases of construction, heavy construction equipment including gasoline and diesel vehicles will be onsite. These construction vehicles may increase the exhaust emissions onsite. Additionally, during the various phases of construction a temporary increase in dust levels may be expected.

The proposed development may contribute to local traffic exhaust emissions by the increase in numbers of people operating vehicles in the area; however, any such increases are expected to be minimal. Over the course of the implementation of the Concordia Master Plan the student population is anticipated to increase from current enrollment of approximately 2,500 students to 5,000-6,000 students. The percentage of these students attending classes onsite and commuting in single occupancy vehicles is not certain. It is anticipated that additional single occupancy vehicle trips for students and associated support staff and services would increase. The overall increase in commuter trips for vehicles may contribute to a small increase in exhaust emissions and slightly decreased air quality. The rationale for this estimation is based on each of the additional vehicles for students, staff, and services increasing the total air emissions. However, this estimation will be influenced by future vehicle efficiency, the percentage of combustion engine vehicles versus electric or hydrogen cell vehicles, and national and local air quality regulations. It is worth noting that the Concordia Master Plan also includes increasing the onsite resident student capacity from 315 students currently to 1200 students. This increase in resident students would also decrease the commuter vehicle trips per day for each student and result in a benefit to overall air quality.

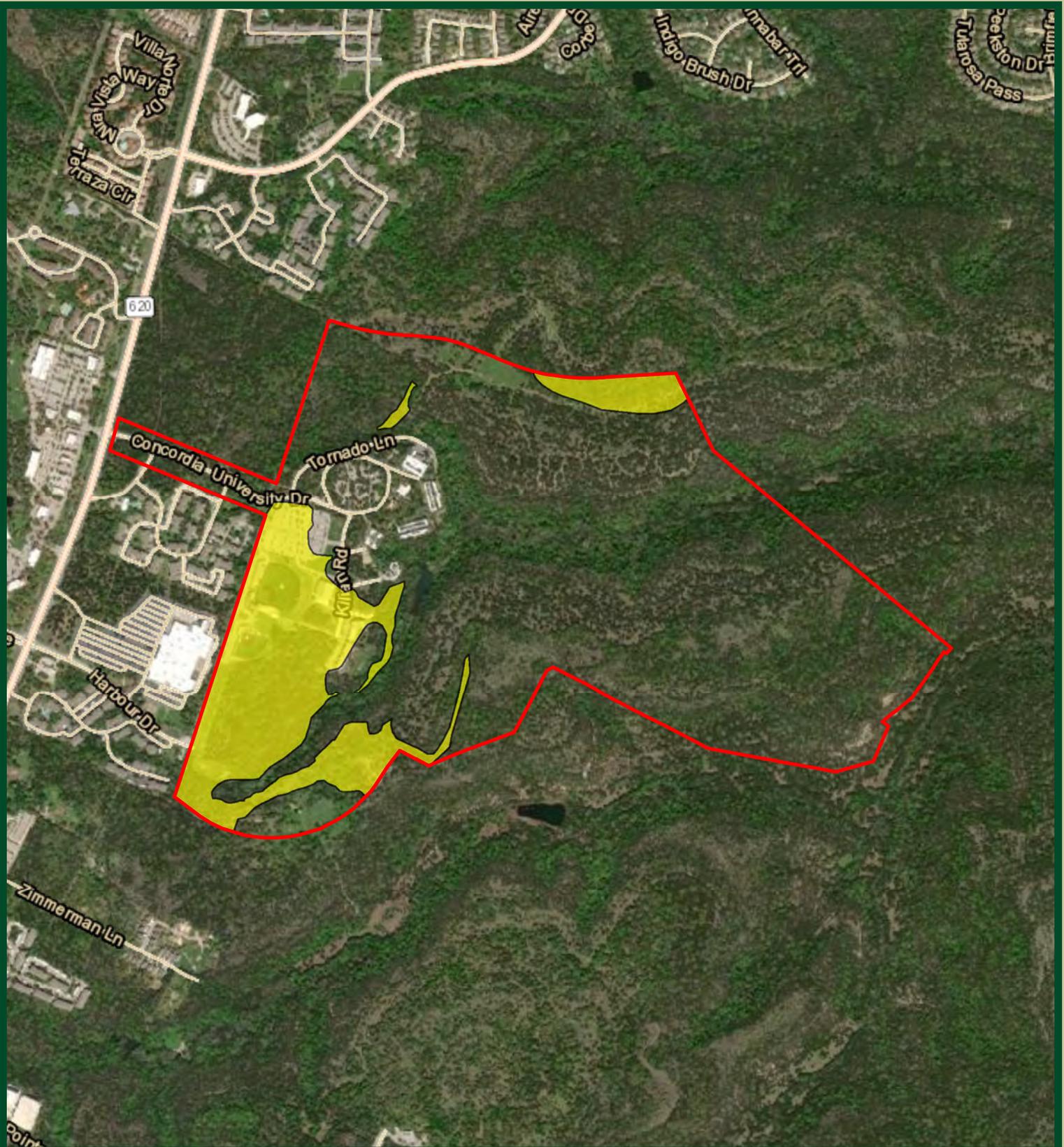
### **3.8 Wildlife**

Wildlife in the areas planned for development under the Proposed Alternative would be displaced during the construction process. After construction is complete, preserved trees and landscaped vegetation would provide habitat for species tolerant of development. Canyon slopes and bottoms that support wildlife will be undisturbed and provide habitat

for wildlife in the area. Direct and indirect effects of development in these plateau areas can have positive and negative impacts to some species populations within the Property. See Section 3.2 Wildlife of the 1997 EA for a comprehensive list of commonly occurring species on the Property.

### **3.9 Golden-cheeked Warbler**

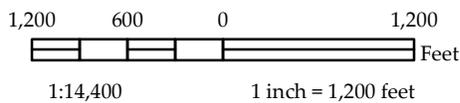
The GCWA is known to occur within the existing preserve area which was established as mitigation by the 1997 EA/HCP (Figure 4). All future construction in any potential remaining GCWA habitat in undeveloped sections of the development area will be completed in accordance with the 1997 EA/HCP. All impacts to GCWA have been previously considered within the original 1997 EA/HCP and have been mitigated for. The Proposed Alternative does not include any changes that will result in additional impacts to GCWA. Concordia will continue to implement their 1997 EA/HCP to include all avoidance and minimization measures for the GCWA. More detailed information on this Covered Species is in the original EA/HCP.



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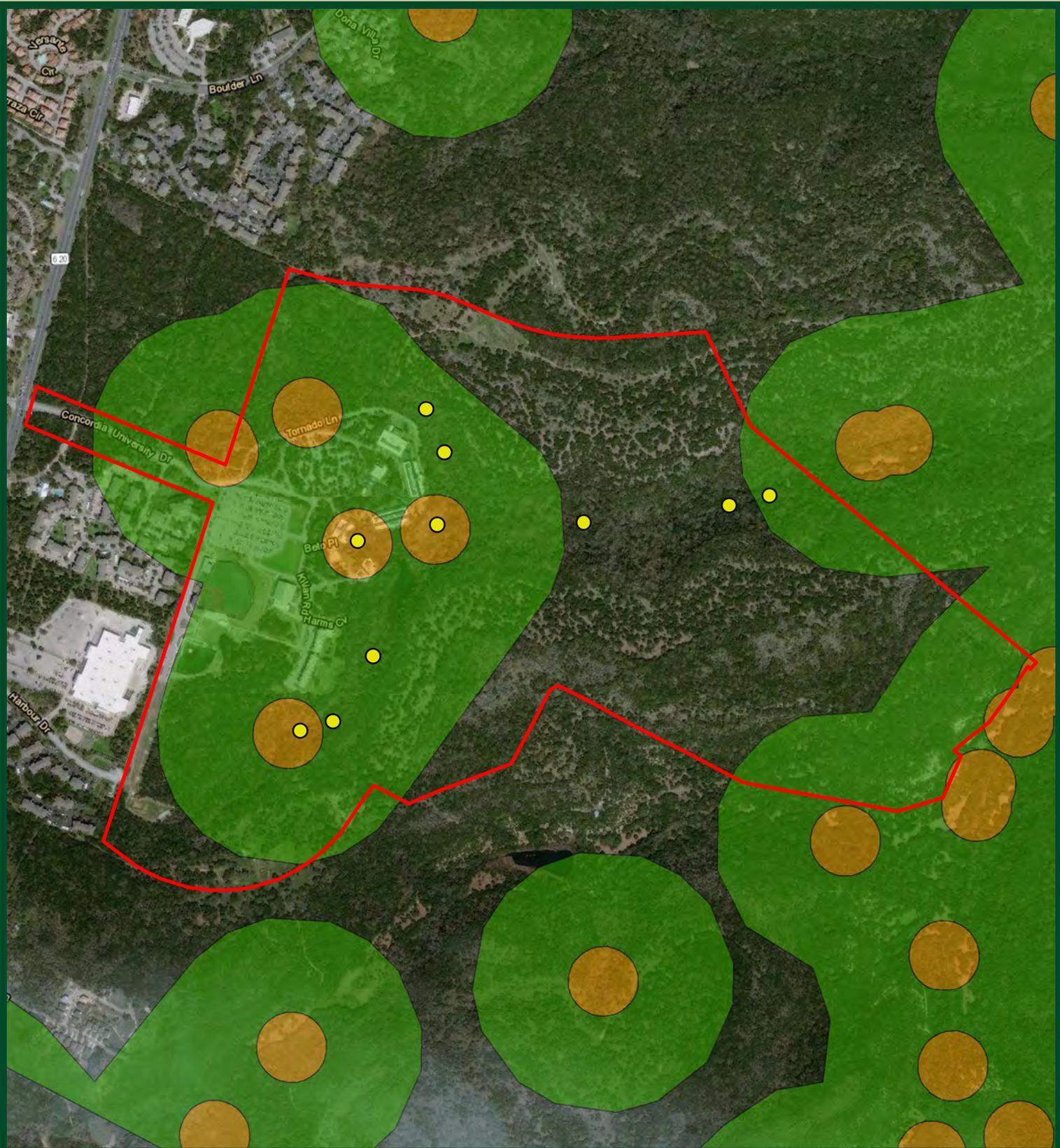
-  Concordia Property
-  Known GCWA Habitat

### **3.10 Jollyville Plateau Salamander**

The JPS is known to inhabit aquatic areas within the main canyon at the head of the northern tributary (Figure 5). The species has been observed in pools below the springs but above the confluence to the two tributaries. Consistent with the 1997 EA/HCP, the proposed development for the Proposed Alternative is limited to the plateau areas; therefore, no direct impacts to JPS or their habitat are expected to occur. The potential for the proposed development to cause significant indirect effects to the quality of the habitat available to JPS is considered to be extremely low based on the persistence of JPS at several urbanized localities, the relatively low density of development proposed for areas considered likely to lay within the recharge zone of the springs, and within the permit area, the establishment of stream buffers and other environmental setbacks from sensitive features that will limit development in environmentally sensitive areas in accordance with the standards established in the TCEQ Optional Enhanced Measures for the *Protection of Water Quality in the Edwards Aquifer (Revised) Appendix A to RG-348 – Complying with the Edwards Aquifer Rules: Technical Guidance on Best Management Practices* (September 2007) (“RG-348A”). More detailed information on this Covered Species is located in the HCP amendment.

### **3.11 Land Use**

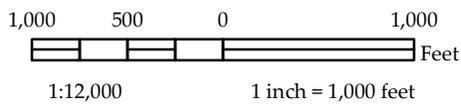
The Proposed Alternative is compatible with land use in the area. No work, including that from the Proposed Alternative, would be allowed within the GCWA preserve. Therefore, no impacts to the GCWA preserve will occur due to issuance of an amended permit. Undisturbed portions of the Property (i.e. the established GCWA preserve) will continue to buffer the proposed development from the COA preserve land to the east.



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Concordia Property



Known Salamander Springs

JPS Critical Habitat

Surface Critical Habitat

Subsurface Critical Habitat

### **3.12 Cultural Resources**

The 1997 EA/HCP reported 28 known archeological sites within the Property. Since then, two more sites have been recorded for a current total of 30 archeological sites or site boundaries located on or intersecting the Property. The 1997 EA/HCP also reported 13 of the 28 sites were included on the National Register of Historic Places (NRHP); however, current records show these sites were only recommended eligible and the eligibility has not yet been determined by the State Historic Preservation Office (Atlas 2020). Currently, 15 of the 30 known sites have been recommended eligible for listing on the NRHP, but no eligibility status has been determined (Atlas 2020).

Of the 15 sites recommended eligible for listing on the NRHP, two are located within the developable area. These two recommended eligible sites that intersect the developable area are 41TV722 and 41TV767. The centroid of site 41TV722 is located outside of the Property, but the site boundary intersects the Property for approximately 54 feet (16 meters). The site, originally recorded in 1984, appears to have been destroyed by development outside of the Property and no longer remains. Site 41TV767, also recorded in 1984, appears partially undisturbed and will be revisited prior to any site plan permitting that intersects this portion of the developable area.

### **3.13 Environmental Justice and Socioeconomics**

Executive Order 12898 issued in 1994 directs federal agencies to identify disproportionately high and adverse human health or environmental effects of their actions on minority communities and low-income communities.

The Property lies within Travis County Census Tract 17.14 and Block Group 1. The last decennial census for which data is available is from 2010 with a total population of 8,509 (U.S. Census Bureau 2010). However, according to the American Community Survey from 2018, this block group has a total estimated population of 9,323 (U.S. Census Bureau 2018a).

Of the 9,323 population count from the 2018 American Community Survey, 5,953 are counted as “white alone,” which represents 63.9% of the total population with a 36.1% minority population. The complete breakdown of race is included in Table 1 (2018b).

**Table 1: Population Race within Project Area Block Group**

<b>Race</b>	<b>Population Total</b>
White alone	5,953
Black or African American alone	554
American Indian and Alaska Native alone	0
Asian alone	1,926
Native Hawaiian and Other Pacific Islander alone	0
Some other race alone	443
Two or more races	447
<b>Total</b>	<b>9,323</b>

Low-income persons can be defined as those whose median household incomes are below the U.S. Department of Health and Human Services (HHS) poverty threshold; low-income communities can be defined as those whose poverty rates exceed the poverty rates of a geographically appropriate reference area. The HHS poverty guideline for a family of four in 2020 is \$26,200 (ASPE 2020); however, the latest information from the U.S. Census Bureau is from 2018. The HHS poverty guideline for a family in 2018 was \$25,100 (ASPE 2018).

Median household income in the project area block group ranged from \$26,818 to \$106,514 in 2018 (U.S. Census Bureau 2018c). A total of 3,900 households were included in the 2018 American Community Survey, of which 414 were categorized as having income in the past 12 months below poverty level, meaning 10.6% of households were living below the poverty line threshold (U.S. Census Bureau 2018d).

The 2018 American Community Survey provides poverty status for 9,013 individuals. Of those 9,013 individuals, 474 are categorized as income below poverty level in the past 12 months, representing 5.26% of the 9,013 population count.

No high concentrations of minority or low-income populations are within the project area block group so none will be affected.

Based on the above discussion and analysis, the proposed project would not cause adverse effects on any minority population or low-income population as per Executive Order 12898 regarding environmental justice.

### **3.14 Noise**

The proposed project is located on a university campus surrounded by residential, commercial, and undeveloped land. Vehicle traffic from the occupants onsite and the surrounding developments are the primary source of noise in the vicinity. The proposed development is not expected to affect ambient noise levels. Construction noise would occur periodically due to use of heavy machinery and construction equipment. Noise would be temporally limited and sporadic over the course of 30 years. Periods of increased noise will occur during construction events which will vary depending on the particular project and phase and will only last until each particular project is complete. Construction hours and noise will be consistent with applicable COA and Travis County ordinances and regulations. Any increase in noise due to construction is anticipated to go largely unnoticed due to phasing of construction and Concordia's location within an urban area.

### **3.15 Other Threatened, Endangered, or Candidate Species**

Table 2 provides a list of species protected by the ESA or species which are candidates for future protection that may occur within Travis County, Texas (USFWS 2020). Of this list, only the GCWA and JPS occur within permit area. The effects to these species are presented under the original EA/HCP and Amendment of the HCP.

Table 2: Federally Listed Threatened, Endangered, and Candidate Species in Travis County, Texas

Common Name	Latin Name	Federal Status
<i>Amphibians</i>		
Austin Blind Salamander	<i>Eurycea waterlooensis</i>	E
Barton Springs Salamander	<i>Eurycea sosorum</i>	E
Jollyville Plateau Salamander	<i>Eurycea tonkawae</i>	T
<i>Arachnids</i>		
Bee Creek (Reddell) Cave Harvestman	<i>Texella reddelli</i>	E
Bone Cave Harvestman	<i>Texella reyesi</i>	E
Tooth Cave Pseudoscorpion	<i>Tartarocreagris texana</i>	E
Tooth Cave Spider	<i>Neoleptoneta myopica</i>	E
<i>Insects</i>		
Kretschmarr Cave Mold Beetle	<i>Texamaurops reddelli</i>	E
Tooth Cave Ground Beetle	<i>Rhadine persephone</i>	E
<i>Birds</i>		
Golden-cheeked Warbler	<i>Setophaga chrysoparia</i>	E
Least Tern*	<i>Sterna antillarum</i>	E
Piping Plover*	<i>Charadrius melodus</i>	T
Red Knot*	<i>Calidris canutus rufa</i>	T
Whooping Crane	<i>Grus americana</i>	E
<i>Freshwater Mussels</i>		
Texas Fatmucket	<i>Lampsilis bracteata</i>	C
Texas Pimpleback	<i>Cyclonaias petrina</i>	C
<i>Plants</i>		
Bracted Twistflower	<i>Streptanthus bracteatus</i>	C

Source: USFWS 2020 (E = Endangered; T = Threatened; C = Candidate)

\*Considered only for wind energy projects.

### **3.16 Public Health and Safety**

The authorization of the ITP or the implementation of the HCP is not expected to affect the public health and safety because the development would be constructed in accordance with all applicable local, state, and federal public health and safety regulations.

### **3.17 Visual and Aesthetic Resources**

The authorization of the ITP or the implementation of the HCP is not expected to affect visual and aesthetic resources. Development within the Property will include conservation measures and mitigation that will not affect the campus's visual and aesthetic resources. Concordia has committed to minimizing the impacts to any visual or aesthetic resources by adopting a development strategy that emphasizes land stewardship, sustainability, campus style, and architectural consistency. This strategy also includes the continued perpetual protection of naturally aesthetic areas located in the preserve and land management plan that emphasizes natural landscaping, plants native to the area, and the management of invasive plants and animals that threaten visual and aesthetic resources.

## **4.0 CUMULATIVE IMPACTS**

The Council on Environmental Quality, which implements NEPA, requires the assessment of cumulative impacts be included in an environmental assessment. Cumulative impacts are the incremental impact of activities associated with implementing the Proposed Alternative when added to other past, present, and reasonably foreseeable future activities regardless of what agency federal or non-federal) or person undertakes such other actions (40 CFR 1508.7). Cumulative impacts can result from individually minor but collectively noteworthy actions taking place over a period of time. Cumulative impacts are most likely to arise when a relationship exists between a proposed alternative and other actions that have occurred or are expected to occur in a similar location or time period, or that involve similar actions. Projects in close proximity to the Proposed Alternative would be expected to have more potential for cumulative impacts than those more geographically separated.

The Proposed Federal Action, amendment of the ITP, does not include the actual construction, operation, and/or maintenance activities proposed to be covered by the permit. However, implementation of the ITP by Concordia would result in the Covered Activities and have been considered in the impact evaluation in original 1997 EA/HCP. The following subsections identify past, current, and reasonably foreseeable future projects and programs related to the undertaking being analyzed (the Proposed Alternative) and provides an evaluation of their combined (cumulative) effects on the environment.

#### **4.1 Past and Present Actions within the Austin Region**

Located just inside the western boundary of the City of Austin, Concordia University and the project area occur within the historic growth of the Austin region. In 2019, Rice University's Kinder Institute reported on the City of Austin named as the number one fastest growing large city in the U. S. using 17 metrics including sociodemographics, jobs, economy, and income (Kinder Institute 2019).

According to the Austin Chamber of Commerce using U.S. Census Bureau population estimates, the population of the Austin Metropolitan Statistical Area (MSA) was 2,227,083 in 2019, up from 1,716,323 in 2010 and 1,249,963 in 2000. The Austin MSA has seen a substantial population increase of 78% in the last 19 years (Austin Chamber 2019).

#### **4.2 Past and Present Actions within the Property**

The Property was originally owned and initially developed by Schlumberger in the 1980s, prior to the federal listing of the GCWA as endangered. Following the listing of the GCWA, Schlumberger processed an Environmental Assessment/Habitat Conservation Plan and was issued an ITP in 1997 with an established conservation easement covering approximately 250.62 acres of the overall 437.23-acre property (previously called 440-acre). In 2005, Concordia purchased the 437.23-acre property with the goal of relocating their campus to this location, and in 2007 the ITP was transferred to Concordia.

Concordia is located approximately 1.3 miles north-northeast of the intersection of Farm-to-Market Road (FM) 2222 and FM 620 at the intersection of Concordia University Drive and FM 620 (see Figure 1). Currently, approximately 2,500 students are enrolled at Concordia with approximately 1,800 students utilizing the main campus on a week to

week basis. Of these regular students, approximately 315 students currently live on campus. In addition to the traditional on-campus students, Concordia enrolls approximately 675 online students as of the spring of 2020.

#### 4.3 Reasonably Foreseeable Actions within the Austin Region

According to the Austin Chamber of Commerce using Texas Demographic Center estimates, the 2019 population of the Austin MSA is projected to increase by 104% to 4,542,827 by the year 2050 (Table 3) (Austin Chamber 2019).

**Table 3: Projected Population for the Austin MSA**

Year	Population Estimate	Percentage Increase
2020	2,246,558	-
2030	2,867,566	7.73%
2040	3,624,734	5.1%
2050	4,542,827	5.1%

Source: Austin Chamber 2019

In 2017, the City of Austin Department of Planning predicted population growth for the City of Austin to 2045 (City of Austin 2017). The forecasts show an average population increase for the City of Austin of 6.41% every five years from 2020 to 2045, resulting in a projected population of 1,367,789 by the year 2045 (Table 4).

**Table 4: Projected Population for the City of Austin**

Year	Population Estimate	Percentage Increase
2020	1,002,763	-
2025	1,080,261	7.73%
2030	1,163,748	7.73%
2035	1,238,323	6.41%
2040	1,301,490	5.1%
2045	1,367,879	5.1%

Source: City of Austin 2017

#### 4.4 Reasonably Foreseeable Actions within the Property

Concordia has recently completed a comprehensive Master Plan (Figure 3) to guide the development of their campus within the Property. Concordia’s Master Plan is designed

to be a framework for future growth and development within Concordia and has a limited amount of flexibility to adopt and change to meet unforeseen future needs. As areas of the campus are renovated and re-purposed, the mission and themes of stewardship, sustainability, and harmony with nature will be paramount. Reinforcing the outdoor, natural, and sustainable environment of the campus layout will build institutional pride while maintaining a uniquely collegiate setting, differentiating it from a light industrial, corporate, or municipal campus. All future design efforts will continue to emphasize the blending of the natural and the built environment, strengthen the connection to the existing environment, and inform the future campus design. While there may be certain elements of the Master Plan that have distinctive sightlines and identity features, the overall feel of the campus experience will reflect sustainability, comfort, and harmony with the natural environment.

#### **4.5 Natural and Human Environment Cumulative Effect**

This EA analyzes the potential effects of the proposed action, the issuance of the amended ITP. The Austin Region has experienced substantial population growth over the past twenty years and this growth is anticipated to continue into the reasonably foreseeable future. The contribution of the proposed action's direct or indirect effects to cumulative effects are discussed below.

The cumulative effects of regional action and the proposed action on water quality are anticipated to be minimal based on the water quality project commitments detailed in the Amendment to the HCP and the regional water quality regulations in place by local governments such as the COA, surrounding cities, and Travis County as well as the TCEQ Edwards Aquifer rules regulating groundwater quality.

The cumulative effects of regional actions and the proposed action on air quality are anticipated to be minimal based on the regional implementation of the Clean Air Act Early Action Compact and the associated Clean Air Action Plan. This compact signed by various regional jurisdictions and the associated action plan implement early actions to maintain the region's current status of compliance with the Clean Air Act air quality attainment standards.

The cumulative effects of regional actions and the proposed action on JPS is anticipated to be minimal. As detailed in the Amendment to the HCP, no direct effects to JPS or JPS

springs are expected to occur. Additionally, the COA, Travis County and private non-profit organizations manage and protect numerous other JPS sites within the Bull Creek Watershed and elsewhere in the JPS range. Other JPS sites, not currently under management and protection would also fall under the regulatory oversight including local water quality ordinances, TCEQ Edwards Aquifer rules, and the ESA.

Due to the existing preserve systems in place in the region, existing regulatory oversight for public actions, and COA and Travis County development ordinances governing all development actions, the cumulative effects of regional actions and the proposed action to cultural resources is anticipated to be minimal. In addition to the onsite preserve, additional entities manage and preserve lands in the Bull Creek Watershed and elsewhere in the region. Non-federal public actions by others would also fall under the jurisdiction of the Antiquities Code of Texas.

As detailed in Section 3.13, the proposed action would not cause adverse effects to any minority population or low-income population, therefore, the action would not contribute to any cumulative effects to these populations.

The cumulative effects of regional actions and the proposed action to ambient noise levels in anticipated to be minimal. Periodic elevated noise levels associated with construction onsite and in the region may be expected to occur. Construction hours and noise levels will be in compliance with applicable COA and Travis County ordinances and regulations. The greater Austin region is anticipated to continue to grow into the reasonably foreseeable future. Construction events during this growth may elevate ambient noise levels during the construction duration. The cumulative effects of increase noise levels in anticipated to be minimal because the short phases of construction and the fall of noise levels after construction is completed. Additionally, the independent nature of construction in the area would not lead to a predictable compounding effect to noise levels, that is, construction activities in the area will not be interrelated and therefore not predictably concurrently occur compounding construction noise. Finally, the onsite and regional preserve systems will act to buffer any construction noise in the immediate area.

As detailed in Sections 3.16 and 3.17, the proposed action would not cause adverse effects to public health and safety or visual and aesthetic resources, therefore, the action would not contribute to any cumulative effects to these elements of the environment.

#### **4.6 Climate Change and Cumulative Effects**

Concordia is committed to permanent protection of JPS habitat and compliance with the requirements of the ESA. It is possible that climate change may lead to changed precipitation patterns in the Edwards Aquifer contributing and recharge zones. Climate change has the potential to alter regional distribution of vegetative and macroinvertebrate communities within salamander habitat. Climate change could result in permanent loss of suitable habitat. Unlike temporary dewatering of habitat areas, these changes may be irrevocable and are completely outside of the control of Concordia. There is currently insufficient information available to predict the potential for habitat in the Permit Area to be affected by climate change over the proposed 30-year term of the HCP. Both the effects of implementing the HCP and the effects of climate change on the covered activities were discussed in the 2019 major amendment.

#### **5.0 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES**

The NEPA regulations at 40 CFR 1502.16 require that the discussion of environmental consequences include “any irreversible or irretrievable commitments of resources which would be involved with the proposal should it be implemented.” Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects that this use could have on future generations. Irreversible effects primarily result from the use or destruction of specific resources that cannot be replaced within a reasonable time frame, such as energy or minerals. Irretrievable resource commitments involve the loss in value of an affected resource that cannot be restored as a result of the action, such as extinction of a threatened or endangered species or the disturbance of a cultural resource.

The amendment of the ITP under the Proposed Alternative for Covered Species during Covered Activities would require little to no commitment of irreversible or irretrievable resources. The HCP’s prescribed avoidance and minimization measures, as well as mitigation, would help preserve habitat for the JPS; thus, the JPS’s viability would not be adversely affected.

## **5.1 Short-term Use of the Environment versus Long-term Productivity**

This section supports 40 CFR 1502.16 and provides a discussion of the long-term effects of the HCP by evaluating the relationship between the short-term uses of the environment and the maintenance and enhancement of long-term productivity.

The objectives of the HCP involve the need to conserve biological resources in an organized and effective manner with the anticipated Covered Activities expected to occur within the Property. Thus, long-term environmental productivity would be maintained through minimization and avoidance measures, and mitigation. Short-term uses of the environment, such as maintenance of facilities, clearing activities, and site work, associated with new construction, would be accommodated in a manner least likely to result in permanent damage to the Property's natural resources. The long-term result would be an increase in ecological productivity through preservation, management, and maintenance of habitat. Ecological productivity would also be enhanced through the recovery of potentially imperiled species through mitigation for incidental take under the Proposed Alternative.

## **6.0 AGENCY CONSULTATION AND LIST OF PREPARERS**

### **6.1 Agency Consultation**

Agencies that were consulted during the preparation of this EA are listed here:

- Texas Parks and Wildlife
- Texas Historical Commission
- Travis County

### **6.2 List of Preparers**

Table 5 below provides a list of the contacts and agencies that were involved with the preparation of this EA.

**Table 5: List of Preparers**

<b>Agency or Entity</b>	<b>Name</b>	<b>Role</b>
USFWS	Jacob Ogdee	Fish and Wildlife Biologist
USFWS	Tanya Sommer	Supervisory Fish and Wildlife Biologist
aci consulting	Kevin Ramberg	Consulting Biologist
aci consulting	Stephen Meyer	Consulting Biologist
aci consulting	Katie Canavan	Project Archeologist

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