

**Final Environmental Assessment  
for the CEMEX Balcones Quarry Northeast Area  
Habitat Conservation Plan**

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November 2015

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## **I. PURPOSE AND NEED FOR THE ACTION**

The U.S. Fish and Wildlife Service (Service) is proposing to issue an incidental take permit (ITP) pursuant to section 10(a)(1)(B) of the Endangered Species Act of 1973, as amended (ESA), to CEMEX Construction Materials South, LLC (CEMEX or the Applicant) (Proposed Action). The ITP is for the incidental take of the endangered golden-cheeked warbler (*Setophaga [=Dendroica] chrysoparia*, GCWA) on the approximately 246-acre Balcones Quarry Northeast Area tract. This tract is located west of the City of New Braunfels and Interstate Highway 35 (I-35) in southern Comal County, Texas (Figure 1). As described in more detail in Chapter 4.0 of the associated CEMEX Balcones Quarry Northeast Area Habitat Conservation Plan (HCP), CEMEX's Proposed Project includes a rock quarrying operation, which will require the clearing of GCWA habitat to prepare the site for excavation and removal of limestone rock.

The issuance of an ITP by the Service is a federal action subject to the provisions of the National Environmental Policy Act of 1969 (42 USC 4321 et seq., NEPA). NEPA requires federal agencies to: 1) study proposed federal actions to determine if they will result in significant environmental impacts to the human environment, and 2) review the alternatives available for the project and consider the impact of those alternatives on the environment (42 USC 4332(c)). NEPA regulations require that all reasonable alternatives be rigorously explored and objectively evaluated (40 CFR 1502.14). "Reasonable Alternatives" have been defined by the Department of the Interior as alternatives that are technically and economically practical or feasible and that meet the purpose and need of the proposed action (46 FR 18026). The scope of NEPA requires that the agency consider the impacts of the action on the "human environment." As part of the NEPA process, the Service prepared this Environmental Assessment (EA) to analyze the impacts of issuing an ITP to the Applicant including, among others, impacts to social, cultural, economic, and natural resources.

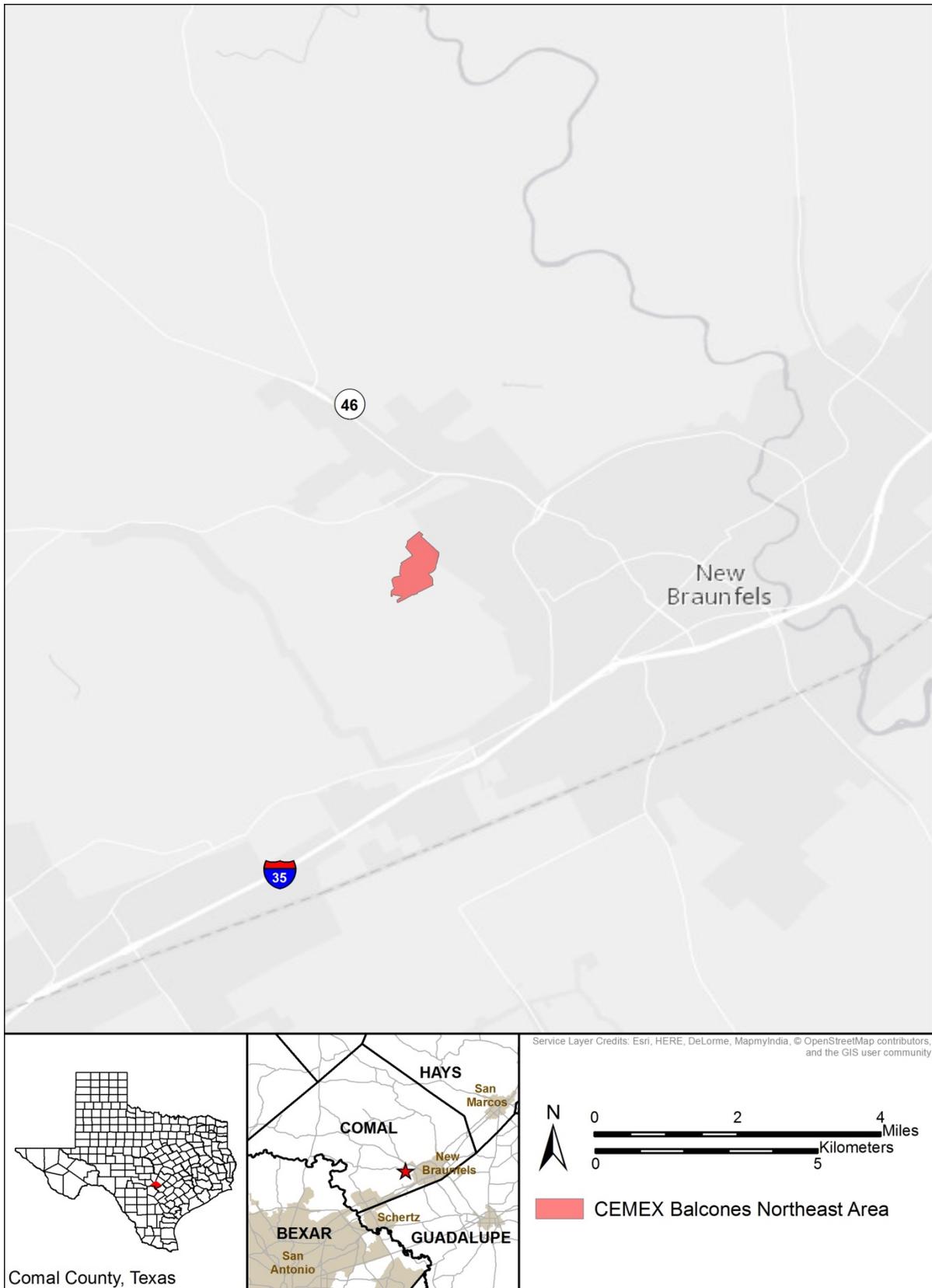
## **II. ALTERNATIVES INCLUDING THE PROPOSED ACTION**

This section presents a description of the Proposed Action and the reasonably practicable alternatives that were considered by the Service. The Service considered and analyzed the following alternatives: (1) the Proposed Action (Proposed Alternative) and (2) the No Action Alternative. The Service also considered two additional alternatives that were eliminated from further analysis: (3) the Lesser Mitigation Alternative and (4) the Greater Mitigation Alternative.

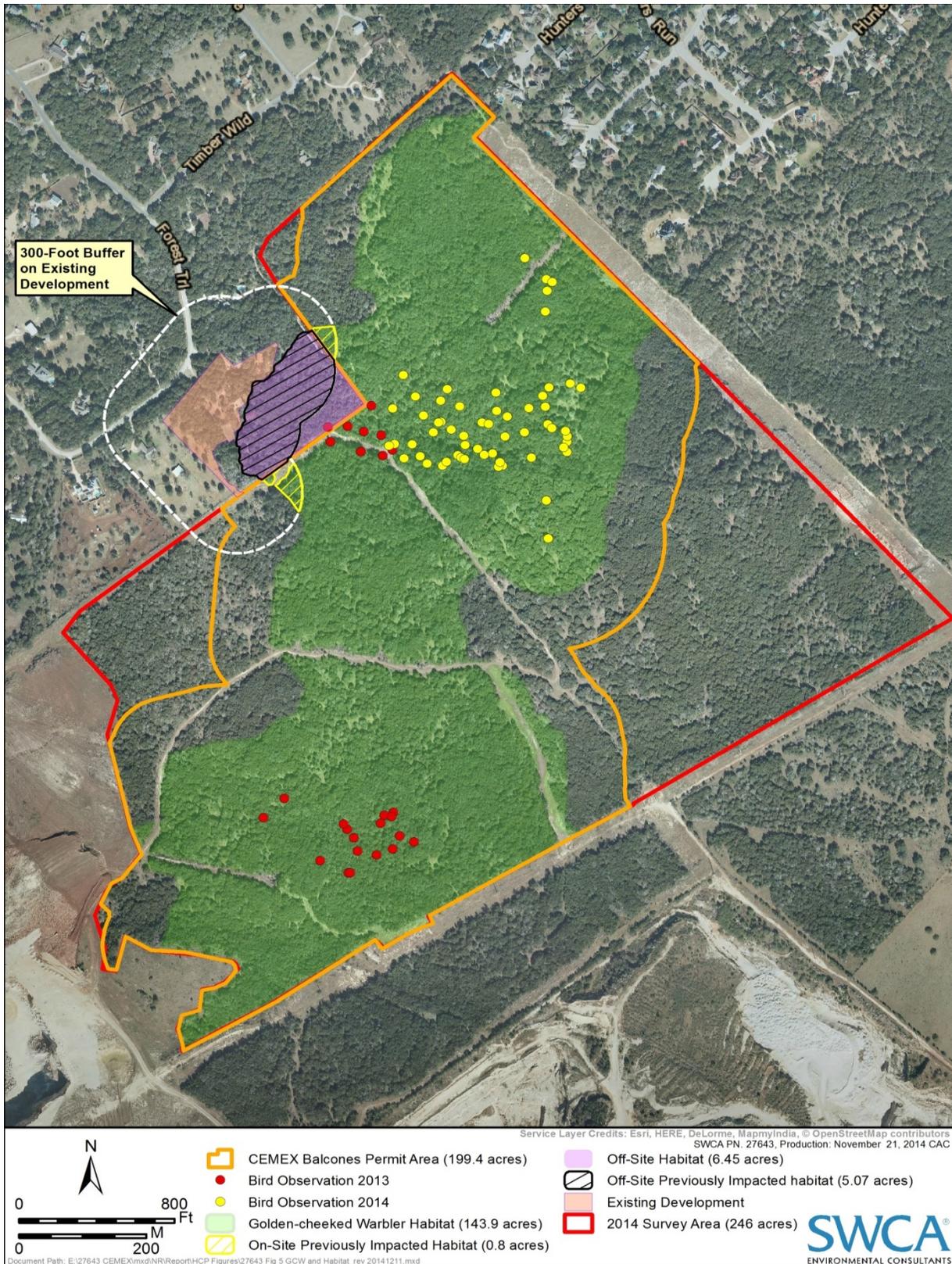
### **A. Proposed Action**

While the CEMEX Balcones Quarry Northeast Area tract is a patch of woodland that is 246 acres, the Permit Area is only a portion of the larger tract (199.4 acres) and is located east and northeast of CEMEX's current Balcones Quarry operations. The 199.4 acres includes 143.9 acres that is considered the occupied area by the GCWA that requires mitigation, plus 55.5 acres that includes a 300-foot buffer area around the perimeter of the 143.9 acres. Additionally, there is an adjacent 6.45 acre patch of potential GCWA habitat off-site that is not in the Permit Area, but would be impacted by the Proposed Alternative (purple on Figure 2).

SWCA Environmental Consultants (SWCA) conducted surveys in the spring seasons of 2013 and 2014 of the larger woodland patch on-site to determine the status of the GCWA in



**Figure 1.** Location of the CEMEX Balcones Northeast Area Tract



**Figure 2.** Locations of 2013 and 2014 GCWA Observations and Distribution of GCWA Habitat in the Permit Area

preparation for clearing and quarrying this area. The results of the survey indicated one, or possibly two, GCWAs using the property. Based on these survey results, it was apparent that not all of the woodland on the property were providing habitat for the species. At the same time, the limits of GCWA habitat on the property were not clearly discernible on digital aerial photography. Therefore, SWCA conducted a tree species analysis to better define potential GCWA habitat on site (SWCA 2014b). SWCA found the distribution of GCWA observations did not correlate to the distribution of plateau live oak trees, but did correlate rather neatly with the distribution of the other broad-leafed hardwoods. The contour of the lowest density of other broad-leafed hardwood trees that encompassed all GCWA observations in the surveyed area and the woodland between the two GCWA observations made in 2013 was then used by SWCA to define the limits of GCWA habitat on the property. This delineation was then expanded to include all woodland that occurred within 300 feet of all GCWA observations, which resulted in approximately 143.9 acres on-site. The 6.45 acres of off-site potential GCWA habitat is expected to be indirectly affected by the Proposed Alternative, since completely clearing the Balcones Quarry property would likely render this woodland too small and isolated to be capable of supporting a GCWA territory (Magness et al. 2006).

Based on the 2014 survey results, the loss or impairment of this habitat might cause a returning male GCWA to seek habitat elsewhere, which may incidentally take the species via harm, as defined by Service regulation (50 CFR 17.3). Based on the survey results, CEMEX determined that an ITP would be pursued to authorize any potential incidental take of the GCWA resulting from clearing in advance of quarrying activities in the Permit Area. CEMEX proposes to conduct the following activities within the Permit Area: extend the existing perimeter berm along the north, northeast, and east sides of the Balcones property boundaries; and remove woodland vegetation, soil, and other surface materials outside of the GCWA breeding season to prepare the area for quarry activities (Covered Activities). Therefore, the Proposed Action is the issuance of an ITP to authorize incidental take of the federally endangered GCWA that may result from the otherwise lawful Covered Activities.

The Permit Area was acquired by a CEMEX predecessor in 1965 and its interior roads were constructed shortly thereafter. The quarry began operation in 1969 and was acquired by CEMEX in 1994. Since operations began, the limestone extraction area progressed northward from the central portion of the property toward its northern boundary and has since continued to progress eastward toward the Permit Area. CEMEX has maintained a perimeter berm along the west and northwest sides of the Balcones Quarry property for safety purposes and visual screening.

Under the Proposed Action, CEMEX would conduct all clearing of woody vegetation between 1 September through 29 February to avoid the destruction of active GCWA nests or the harm or harassment of adult or juvenile birds. Additionally, to compensate for expected impacts to the GCWAs, CEMEX would do one of the following:

1. Purchase 147.44 acres<sup>1</sup> of conservation credits from a Service-approved GCWA conservation bank,

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<sup>1</sup> See Section IV.C.iv for a detailed description of how this number was derived.

2. Acquire and preserve a minimum of 147.44 acres of GCWA habitat through fee simple title or establishment of a conservation easement<sup>2</sup>, or
3. Purchase credits from the Comal County Regional Habitat Conservation Plan.

### **B. No Action Alternative**

NEPA regulations (section 1502.14(d)) require an EA to include an alternative of no action. No action means “the proposed permit would not be issued, the proposed activity would not take place, and the resulting environmental effects from taking no action would be compared with the effects of permitting the proposed activity or an alternative activity to go forward” (46 FR 18026). The No Action Alternative is defined as the conditions that can be expected if the Service does not issue an ITP to the Applicant. Non-issuance of an ITP could also result from CEMEX withdrawing its permit application. Under this alternative and in absence of permit application withdrawal, the Service would not issue the ITP either because it determined that take of GCWAs is unlikely and a permit to allow take was unnecessary, or because the application and conservation commitments made by CEMEX in the accompanying HCP failed to meet all of the issuance criteria as described under section 10(a)(2)(B) of the ESA.

Under this alternative, CEMEX would not be issued an ITP and would not implement the mitigation as described in the HCP. Under this alternative, CEMEX would quarry all but the 143.9 acres, which is assumed to include all of the potential GCWA habitat.

### **C. Alternatives Considered but Dismissed from Detailed Analysis**

#### *i. Lesser Mitigation Alternative*

The Service considered an alternative with less mitigation. CEMEX proposed mitigating for two GCWA territories at a total mitigation of 42 acres, which was based on a maximum reported territory size of 21 acres (Pulich 1976, Kroll 1980). However, the Service did not believe this represented the actual potential GCWA habitat that would be directly and indirectly taken by the proposed activities. Subsequently, CEMEX withdrew that proposal; therefore, this alternative was dismissed from analysis.

#### *ii. Greater Mitigation Alternative*

The Service also considered an alternative with greater proposed mitigation. This alternative considered mitigating for the entire habitat patch on CEMEX’s property (approximately 246 acres), since there was no clear delineation of where GCWA habitat was or was not. Consequently, SWCA (2014b) conducted a tree analysis to more precisely map where GCWA habitat existed within the larger woodland patch. Based on this analysis, it was determined that the entire site was in fact not GCWA habitat. Therefore, this alternative was dismissed from analysis.

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<sup>2</sup> If preserving habitat, the 147.44 acres would be contiguous with a minimum of 352.56 additional acres of preserved habitat so that the total area preserved was at least 500 acres.

### **III. AFFECTED ENVIRONMENT**

#### **A. Resources Considered for Detailed Analysis**

The following resources of the natural and human environments may be affected by the proposed incidental taking, mitigation, or the clearing in advance of quarrying expected to occur in the Permit Area as described under the Proposed Action.

##### *i. Ground Water Resources*

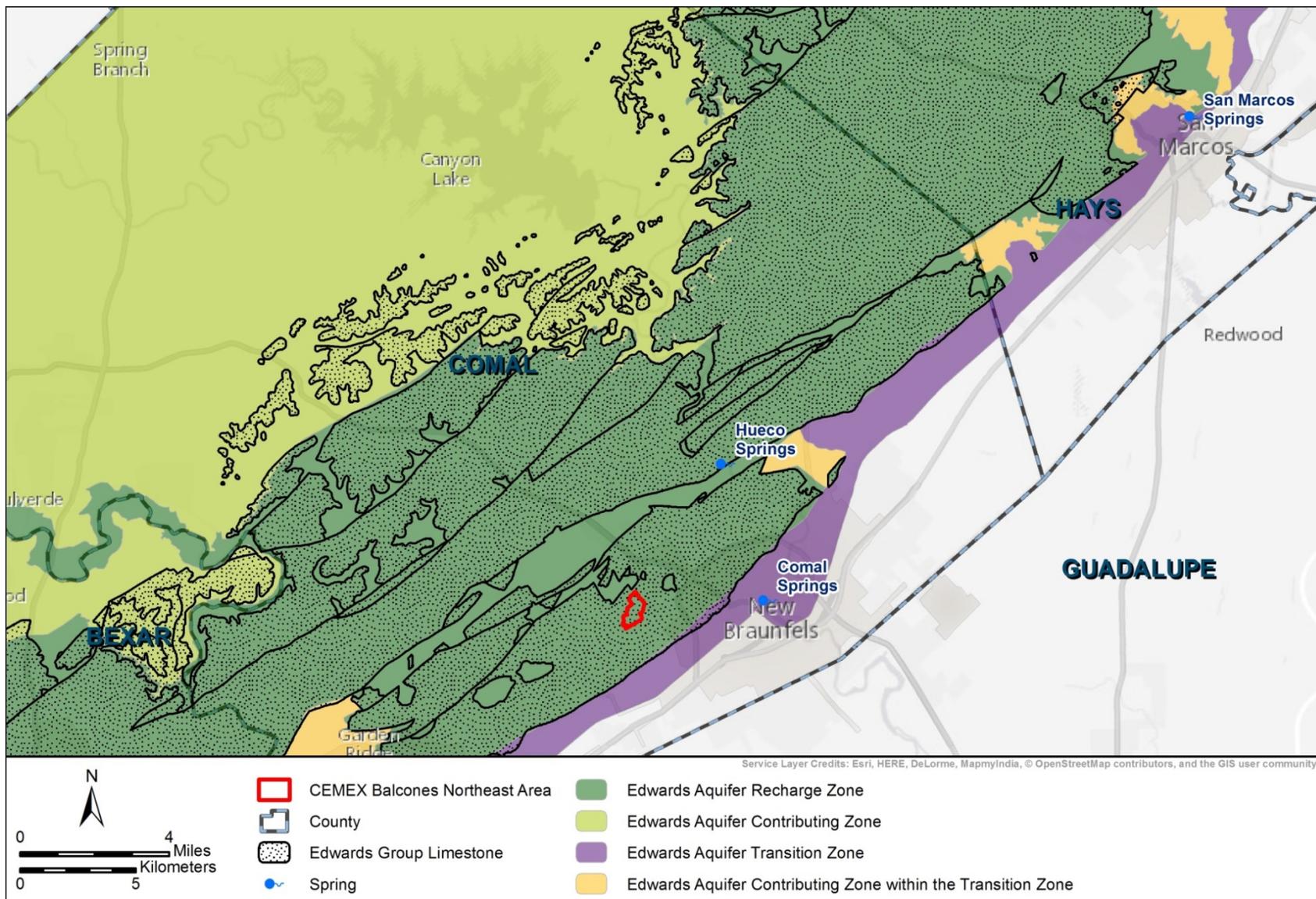
The Permit Area is located within the San Antonio Segment of the Edwards Aquifer (SASEA) Recharge Zone (Figure 3), which extends for approximately 180 miles between ground water divides in Kinney County to the west and Hays County to the northeast (Edwards Aquifer Authority [EAA] 2012). The recharge zone for the SASEA covers approximately 1,250 square miles, or 800,000 acres (EAA 2012).

Ground water within the SASEA discharges at many springs along the southern and eastern edges of the recharge zone. Primary discharges in the vicinity of the Permit Area include Comal Springs (approximately 3 miles) and Hueco Springs (approximately 5 miles) in Comal County and San Marcos Springs (approximately 20 miles) in Hays County. A recent study compared spring flow and ground water pumping forbearance east and west of Cibolo Creek, which constitutes the boundary between Comal and Bexar counties (Land et al. 2014). The study found that forbearance east of Cibolo Creek, in Comal County where the Permit Area is located, benefitted both minimum and long-term average spring flow at the San Marcos Springs rather than at Comal Springs (Land et al. 2014). Therefore, it is possible that ground water traveling through the section of recharge zone underlying the Permit Area mostly discharges at San Marcos Springs, although some water could discharge at Comal Springs.

CEMEX is authorized to withdraw approximately 2,269.2 acre-feet of water (before critical period reductions) for the Balcones Quarry operations from the Edwards Aquifer under the current permits issued by the EAA. CEMEX pays a fee per acre-foot of water rights annually as a water user of the SASEA. This cost is allocated between an aquifer management fee and an implementation fee for the Edwards Aquifer Recovery Implementation Program (EARIP, TE-63663A) and further ensures protection of the SASEA. Any effect that CEMEX's withdrawal of water from the SASEA may have on the ground water resource is authorized through the EARIP. Additionally, according to CEMEX, the proposed project will not increase water withdrawal from the Edwards Aquifer. Based on average rainfall data, an average of approximately 906.6 acre-feet of water falls within the Permit Area per year as a result of precipitation, and no more than 30 percent of that water (272.0 acre-feet) is capable of contributing to recharge of the SASEA as a result of losses to evapotranspiration (Texas Water Development Board 2012).

##### *ii. Vegetation Communities*

The Permit Area is located within the Level III Edwards Plateau ecoregion and the Level IV Balcones Canyonlands ecoregion (Griffith et al. 2007). The Edwards Plateau as a whole is characterized by juniper-oak and mesquite-oak woodlands. The Balcones Canyonlands ecoregion is the easternmost sub-region of the Edwards Plateau and typically has more surface water and ground water than the rest of the Edwards Plateau (Griffith et al. 2007).



**Figure 3.** Location of the Permit Area Relative to the Edwards Aquifer Recharge Zone

Consequently, it supports diverse herbaceous, shrubland, and woodland communities that grow along moisture gradients and include mesic riparian, deciduous, and drought-tolerant vegetation.

The Permit Area is mostly wooded (see Figure 2) and is composed primarily of Ashe juniper and plateau live oak (*Quercus fusiformis*) trees, with some stands composed almost exclusively of Ashe juniper. Cedar elm (*Ulmus crassifolia*) trees are present in very low densities in upland areas and in low to very low densities along drainage channels. Average canopy height of the woodland is 22 to 28 feet in upland areas and 26 to 34 feet along the ephemeral drainages. Shrub development is generally poor throughout most of the Permit Area, although whitebrush (*Aloysia gratissima*) is relatively common mixed with Ashe juniper trees in the northwest corner of the Permit Area. Texas persimmon (*Diospyros texana*), agarita (*Berberis trifoliolata*), hog-plum (*Colubrina texensis*), twist-leaf yucca (*Yucca rupicola*), prickly pear (*Opuntia* spp.), and tasajillo (*Opuntia leptocaulis*) are present in low to very low densities in upland woodlands. Some whitebrush, Roosevelt weed (*Baccharis neglecta*), and small huisache (*Acacia minuta*) and mesquite (*Prosopis glandulosa*) trees occur in woodland clearings and along the margins of interior roads. A sub-shrub, bush croton (*Croton fruticulosus*), is relatively common in the understory of woodland developed along drainages and adjacent lower slopes. Also present in the woodland understory along these lower slopes are cedar sedge (*Carex planostachys*), frostweed (*Verbesina virginica*), and Lindheimer's senna (*Cassia lindheimeri*).

### **iii. Geology**

The Edwards Plateau is largely composed of flat-lying sedimentary rocks, mostly Lower Cretaceous marine carbonates, that were elevated en-masse during or prior to the Miocene Epoch (Spearing 1991). The predominant carbonate geology of the Edwards Plateau has resulted in widespread presence of karstic topography in the region. Surface geology of the Permit Area consists of the Lower Cretaceous Person Formation of the Edwards Group (Collins 2000). The Person Formation is a unit composed of limestone, dolomite, and dolomitic limestone. The Person Formation is underlain by the Kainer Formation of the Edwards Group, which similarly consists of beds of limestone, dolomite, and dolomitic limestone. Quarrying by CEMEX and others on adjacent properties has resulted in local removal of the Person Formation and exposure of a unit mapped by Collins (2000) as the undivided Person and Kainer formations. Surface exposure of the Edwards Group of carbonates form the recharge zone for the SASEA. Generally, the Edwards Group is between 300 and 700 feet thick.

### **iv. HCP Covered Species**

The GCWA, a migratory songbird, was emergency listed as endangered on May 4, 1990 (55 FR 18844), and the final rule was published on December 27, 1990 (55 FR 53160). The GCWA is the only species covered for incidental take in the HCP. The breeding range of the GCWA is largely restricted to the Edwards Plateau and Cross Timbers regions of central and north-central Texas (Service 1992). Most GCWAs arrive on their breeding grounds in early to mid-March. Breeding habitat typically consists of relatively dense and mature woodland composed of a combination of Ashe juniper and broad-leafed hardwood tree species, especially oaks such as Texas oak (*Quercus buckleyi*) and plateau live oak. Other hardwood tree species often found in GCWA breeding habitat include shin oak (*Quercus sinuata*), Lacey oak (*Quercus glaucooides*), post oak (*Quercus stellata*), escarpment black cherry (*Prunus serotina* var. *eximia*), walnut

(*Juglans* spp.), Texas ash (*Fraxinus texensis*), and cedar elm. No critical habitat has been designated for the GCWA. The Texas Parks and Wildlife Department (TPWD) describes woodlands with the following characteristics as being highly likely to be used by GCWAs: "...mature Ashe juniper (cedar) in a natural mix with oaks, elms, and other hardwoods, in relatively moist (mesic) areas such as steep canyons and slopes, and adjacent uplands" and having 50-100 percent canopy closure and a canopy height of 20 feet or more (Campbell 2003).

GCWA surveys were performed by SWCA across all wooded portions of the Permit Area in 2013 and 2014 and were conducted in accordance with Service presence/absence survey protocols. These protocols require a minimum of five survey visits with no more than one visit every five days. The 2013 surveys were conducted between March 15 and April 8. No GCWAs were detected in or adjacent to the Permit Area during the first three survey visits. On the fourth visit (April 1), GCWA observations were made in two separate locations within the Permit Area. At the time, it was not known whether those observations represented one male that moved between the two areas or two different birds. A coordinated survey was performed on the fifth visit, with people stationed simultaneously in each of the two locations where a GCWA was detected during the fourth visit. Only one of the surveyors encountered a GCWA in the Permit Area during the fifth visit. This result caused SWCA to conclude it was most likely that one bird was responsible for all GCWA observations made in the Permit Area on the fourth visit as it seemed to SWCA that the arrival of two GCWAs on a property that late in the breeding season was much less likely than the arrival of just one bird (SWCA 2014a). The 2014 surveys were conducted between March 19 and April 15. One male GCWA was observed in the same general locations within the Permit Area during the second (March 26) and third (April 8) survey visits. This bird was not detected during the first, fourth, or fifth visits. It was surmised by SWCA that the GCWA had not yet returned from its wintering grounds by the date of the first visit (SWCA 2014a). The reason why the bird was not detected during the final two visits is unknown.

SWCA performed a habitat analysis in order to delineate GCWA habitat within the Permit Area. Details of the methodology are included in the HCP. A brief summary of the analysis and results are discussed here. The analysis consisted of the comparison of GCWA observation locations and tree type, a critical component because the bird typically occurs in greater densities where deciduous trees are comparatively abundant. The tree survey conducted 16 – 21 July 2014 revealed that live oak trees greatly outnumber deciduous broad-leaf hardwoods. The subsequent analysis showed that locations of GCWA observations do not correlate strongly with live oak density but correlate well with deciduous hardwood tree density.

GCWAs require a certain amount of deciduous tree foliage in their territories (Pulich 1976, Service 1992). As a result, GCWA territory size (as reflected by GCWA density) varies with deciduous tree density (Wahl et al. 1990). Intuitively, territories can be smaller where deciduous trees occur in higher densities, and must be larger where deciduous trees are more widely spaced in order for the territories to contain the necessary amount of deciduous foliage. All GCWA observations made on the property in 2013 and 2014 occurred in areas where on average there were 11 or more deciduous trees per 20 acres, or 0.55 deciduous trees per acre. Woodland in the Permit Area with this density forms a strip across the property extending generally southwest-northeast. In 2013, GCWA observations were made on both ends of this strip, with the strip also providing the corridor for shortest distance of movement between these two areas.

The habitat analysis was delineated in the following manner:

1. It used deciduous tree density based on a scale believed to be important to the GCWAs that utilize the Permit Area,
2. It encompassed all locations where GCWAs have been observed during surveys,
3. It encompassed the corridor likely to have been used by the 2013 GCWA for travel between the two areas where it was observed,
4. It excluded all woodland of lower deciduous tree density classes where GCWAs have never been observed, and
5. It included all woodland regardless of character that occurs within 300 feet of locations where a GCWA was observed during the surveys performed in 2013 or 2014.

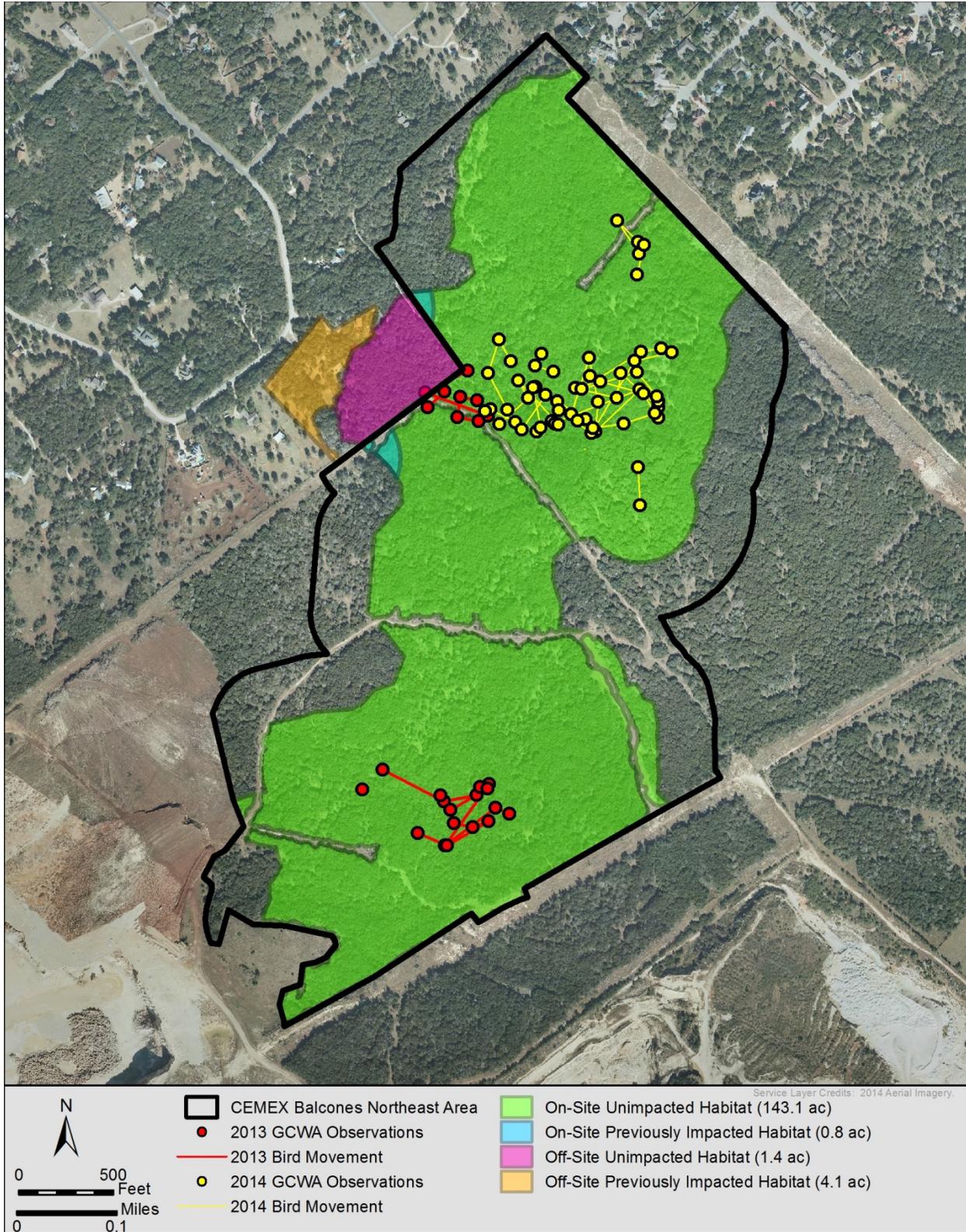
This area totals approximately 143.9 acres of on-site and 6.45 acres of off-site potential GCWA habitat. Figure 4 depicts the results of the 2013 and 2014 GCWA surveys, identifying locations of GCWA observations and bird movement locations in the Permit Area, and identifies the distribution of GCWA habitat in the Permit Area.

#### *v. Other Wildlife*

Wildlife species that are known or expected to utilize the habitats present in the Permit Area include a variety of terrestrial woodland birds, mammals, reptiles, and some amphibians (SWCA 2014a, Kutac and Caran 1994). Most of these species are common in Ashe juniper woodlands of the Edwards Plateau, and many are common in both undeveloped and suburban settings. Comal County is included in the breeding or wintering range of a few species protected by the ESA and hundreds of bird species protected by the Migratory Bird Treaty Act (MBTA). Under the MBTA, it is illegal for anyone to take, possess, import, export, transport, sell, purchase, barter, or offer for sale, purchase, or barter, any migratory bird, or the parts, nests, or eggs of such a bird except under the terms of a valid permit. The MBTA protects over 800 bird species, including most native bird species, and permits game bird hunting. The majority of the bird species that occur within the Permit Area are protected by the MBTA.

#### *vi. Air Quality*

The Federal Clean Air Act (CAA) and Texas Clean Air Act (TCAA) require that maximum ambient air quality concentration limits be established, which are designed to protect public health, public welfare, and the environment. Ambient air is the air to which the general public has access, as opposed to air within the boundaries of an industrial facility. The National Ambient Air Quality Standards (NAAQS) are established by the Environmental Protection Agency (EPA) as required by the CAA. The NAAQS are maximum concentration limits for particulate matter (PM) and specific pollutants in ambient air over a specific averaging time (40 CFR 50). The NAAQS are classified into two categories: primary and secondary standards. Primary standards are established to protect public health, including “sensitive” populations such as asthmatics,



**Figure 4.** GCWA Observations within and adjacent to the Permit Area made in 2013 and 2014.

children, and the elderly. Secondary standards are established to protect public welfare, including visibility, animals, crops, vegetation, and buildings. The CAA requires periodic review of the standards and the science upon which they are based to assure ongoing protection of the nation's public health and environment. This thorough and extensive review involves a science policy workshop to identify the key policy-relevant science issues to review; an integrated science assessment, which is a comprehensive review; and synthesis and evaluation of the science, including risk and exposure assessments. Therefore, the existing primary and secondary standards represent the current science related to protection of public welfare.

The EPA has established NAAQS for six principal air pollutants, also referred to as criteria air pollutants. These six criteria air pollutants include: Carbon Monoxide (CO), Lead (Pb), Nitrogen Dioxide (NO<sub>2</sub>), Ozone, Particulates (PM<sub>2.5</sub>, PM<sub>10</sub>) and Sulfur Dioxide (SO<sub>2</sub>). The CAA also establishes that geographic areas be classified as either having ambient concentration above or below the established NAAQS. A geographic area whose ambient air concentration for a criteria pollutant is equal to or less than the primary standard is an attainment area. A geographic area with an ambient air concentration greater than the primary standard is a nonattainment area. A geographic area will have a separate designation for each criteria pollutant. Comal County has been designated as being in attainment or unclassified for all the criteria pollutants of the EPA and TCEQ.

The CEMEX Balcones Quarry operation is also authorized under Texas Commission on Environmental Quality (TCEQ) Air Quality Permit No. 20618. The TCEQ regulates and issues air quality permits to aggregate quarries, mines, and aggregate handling facilities in accordance with the Texas Clean Air Act to ensure that these activities are protective of public health and welfare. The emission limitations required by the air quality permit are compiled using the emission rate factors and methodology as promulgated by the Environmental Protection Agency (EPA) and the EPA's New Source Performance Standards for Nonmetallic Mineral Processing Plants (i.e. crushed stone operations). An emissions factor is a representative value that attempts to relate the quantity of a pollutant released to the atmosphere with an activity associated with the release of that pollutant.

As described in the EPA's Compilation of Air Pollutant Emission Factors for crushed stone processing operations (AP-42 Section 11.19.2), nonmetallic mineral processing plants can be significant sources of particulate matter emissions (i.e. PM, PM-10 and PM-2.5) if uncontrolled. Particulate matter emissions from crushed stone operations are referred to as "fugitive dust" emissions. Fugitive dust from these operations may include emissions from processing activities, haul roads, wind erosion of exposed surfaces, storage piles and other activities in which the mined and processed material is either removed, stored, transported or redistributed. The particle size and the moisture content of the material can have a substantial effect on minimizing emissions.

The air quality permit issued to the CEMEX Balcones Quarry requires effective, yet reasonable controls to limit dust emissions from the facility; and establishes opacity and fugitive emission limitations to ensure that visible dust emissions are minimized and controlled. Specifically, CEMEX is required to use water sprays on processing equipment; and use a water truck for road watering, stockpiles and other areas as needed to control fugitive dust. The permit also states

that “there shall be no visible fugitive emissions leaving the property.” Accordingly, CEMEX employees visually monitor the processing, mining, storage and other active areas on a continuous basis throughout each operating day as a routine practice to ensure that visible dust emissions are minimized and controlled; and that dust emissions do not cross the property line. In addition, CEMEX is required to conduct and record property line visible emission determinations during normal plant operations on a quarterly basis. These property line observations are conducted by an employee standing on the downwind property line for a minimum of six minutes. If visible dust emissions are observed during the routine daily monitoring or the quarterly property line monitoring, an evaluation must be accomplished in accordance with the approved EPA visible emissions standards found in 40 CFR Part 60. These standards require the use of specific methodologies for the determination of the level or frequency of visible emissions by trained and certified observers. If the visible emissions exceed the standard criteria, immediate action is required to be taken to eliminate the excessive visible dust emissions. The corrective action is required to be documents within 24 business hours of completion. CEMEX Balcones has employees that are trained and certified observers. These employees are trained and certified every six months by a third-party company that specializes in Visible Emissions Training and Certifications.

*vii. Climate*

Climate is typically defined as the average weather of a region. The relevant parameters include temperature, precipitation, wind, and dates of meteorological events such as first and last frosts, beginning and end of rainy seasons, and appearance and disappearance of pack ice. Changes in climate are difficult to detect because of the natural and complex variability in meteorological patterns over long periods of time and across broad geographical regions (Intergovernmental Panel on Climate Change [IPCC] 2013). There is much uncertainty regarding the extent of global warming caused by human-induced greenhouse gas (GHG) emissions, the historic and future climate changes as a result of this warming, and the appropriate strategies for stabilizing the concentrations of GHGs in the atmosphere (IPCC 2013).

Currently, temperatures in Comal County are typical of subtropical-sub humid to semiarid climates, ranging from the mid-30s (degrees Fahrenheit) during the winter to the upper 90s (degrees Fahrenheit) during the summer. Precipitation in the region averages approximately 36 inches of rain per year, with most rainfall occurring in the late spring and early fall months. Although precipitation is typically in the form of rain, traces of snow, sleet, and hail have been reported. Severe or high-impact weather events, including flash floods and periods of drought, are common (Nielsen-Gammon 2008).

The human and natural causes of climate change and the impacts of climate change are global in scope. Greenhouse gas emissions, which are believed to contribute to climate change, do not remain localized, but become dispersed throughout the Earth’s atmosphere. Greenhouse gases include water vapor, carbon dioxide (CO<sub>2</sub>), methane, nitrous oxide, O<sub>3</sub>, and several chlorofluorocarbons. Although GHGs constitute a small percentage of the Earth’s atmosphere, they are responsible for its heat-trapping properties, which increase the temperature of air, soil, and water at the Earth’s surface (IPCC 2013).

Water vapor, a natural component of the atmosphere, is the most abundant GHG, but its atmospheric concentration is driven primarily by changes in the Earth's temperature. As such, water vapor can amplify the effects of other GHGs such as CO<sub>2</sub>. The second-most abundant GHG is CO<sub>2</sub>, which remains in the atmosphere for long periods of time. Due to human activities, atmospheric CO<sub>2</sub> concentrations have increased by approximately 35 percent over preindustrial levels (IPCC 2013).

**viii. Noise**

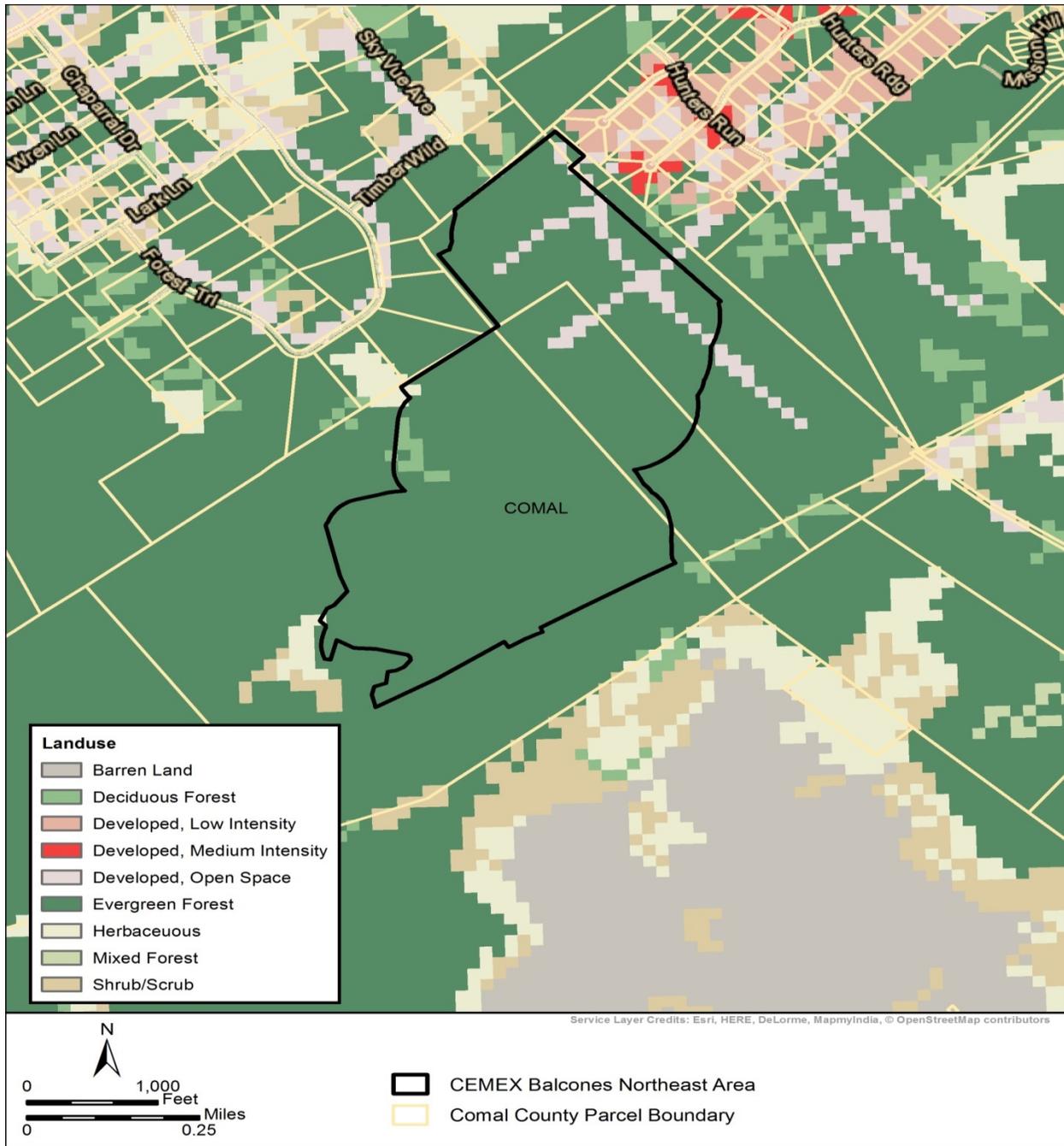
The proposed Permit Area is within the existing quarry property boundary that includes an existing mine and process operation that has operated since 1969. It is not anticipated that there will be an increase in noise levels from the proposed Permit Area as compared to the existing facility operation.

**ix. Visual Resources**

The Proposed Action will occur within the Permit Area as a continuation of the existing CEMEX Balcones Quarry operation. The elevation of the surrounding area decreases to the southeast of the Permit Area and increases to the west and northwest. The Permit Area is currently a wooded area that can be seen from adjacent properties and various locations within the vicinity. The wooded area is proposed to be cleared and a vegetated perimeter berm is proposed to be installed. The existing vegetated berm along the CEMEX Balcones Quarry's west and northwest property boundaries are proposed to be continued and installed along the north, northeast, and east property boundaries. The vegetated berm will serve as a safety, visual screen, and noise barrier, which will visually screen the CEMEX operation, including the Permit Area, from the adjacent neighbors situated to the north and east of the Permit Area.

**x. Land Use**

The Permit Area is composed mainly of woodland located within the jurisdiction of Comal County. Several caliche roads are located within the Permit Area. The Permit Area is not used for grazing livestock and currently experiences limited use by humans. Land uses in the general vicinity of the Permit Area include mostly a mix of single-family residential properties, quarries, and commercial/light industrial operations (TCEQ 2014) (Figure 5).



**Figure 5.** Parcels, Subdivisions, and Land Uses in the Vicinity of the Permit Area.

*xi. Socioeconomics*

The Permit Area lies within a lightly populated part of Comal County (2010 Census Tract [CT] 3108.02), with a population density of 101 to 1,000 people per square mile. Higher densities occur to the east in the City of New Braunfels where the population exceeds 1,500 people per square mile, but the majority of the surrounding areas have populations at or below 1,000 people per square mile (ESRI 2013) (Figure 6). The City of New Braunfels saw rapid population

growth from 1990 to 2010 with a 113 percent increase (27,091 to 57,740) and is expected to increase another 61 percent to 113,529 from 2010 to 2060 (South Central Texas Regional Water Planning Group [SCTRWPG] 2010, U.S. Census Bureau 2010). Comal County saw similar rapid growth over the past two decades, with a 109 percent increase (51,832 to 108,472) from 1990 to 2010 (SCTRWPG 2010, U.S. Census Bureau 2010). This rapid growth is projected to continue through the year 2060, with county population projections reaching upwards of 326,655 at a 234 percent increase (SCTRWPG 2010). Much of this growth is expected to occur along the I-35 corridor near the City of New Braunfels and along U.S. Highway 281, where infrastructure already exists.

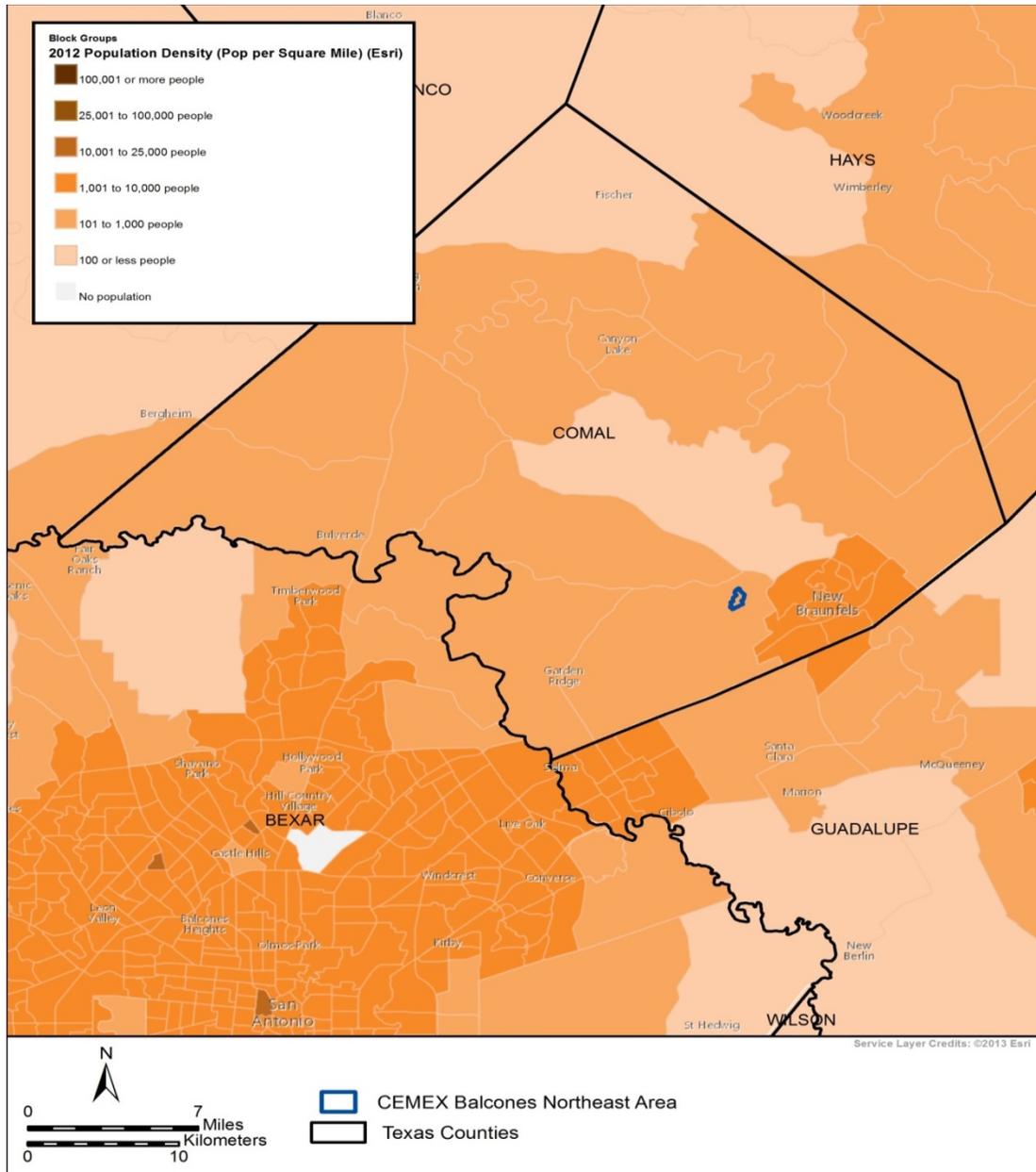


Figure 6. Population Density in the Region of the Permit Area

Characteristics of the human population of Comal County and CT 3108.02 in which the Permit Area occurs are provided in Table 1 below, along with a comparison of these characteristics against the state population as a whole.

**Table 1. Population and Income Characteristics for the Local and Regional Community**

<b>Category</b>	<b>Census Tract (CT) 3108.02</b>	<b>Comal County</b>	<b>Texas</b>
<b>Population , Race, and Ethnicity (Census 2010 Counts)</b>			
Total Population	5,631 <i>5.2% of county population</i>	108,472 <i>0.43% of state population</i>	25,145,561
Hispanic or Latino Population	1,742 <i>30.9% of CT population</i>	26,989 <i>24.9% of county population</i>	9,460,921 <i>37.6% of state population</i>
Non-white Race or Multi-racial Population	886 <i>15.7% of the CT population</i>	11,428 <i>10.5% of county population</i>	7,444,009 <i>29.6% of state population</i>
<b>Language (2008-2012 American Community Survey 5-year Estimates)</b>			
Population 5 Years and Over (speaking population)	5,608	102,769	23,280,055
English Only Speakers	4,007 <i>71.5% of CT speaking population</i>	84,567 <i>82.3% of county speaking population</i>	15,221,440 <i>65.4% of state speaking population</i>
Speak English Less Than “Very Well”	538 <i>9.6% of CT speaking population</i>	4,939 <i>4.8% of county speaking population</i>	3,346,914 <i>14.4% of state speaking population</i>
<b>Employment and Income (2008-2012 American Community Survey 5-year Estimates)</b>			
Population 16 years and Over (employable population)	4,476	86,462	19,110,058
In Labor Force	2,917 <i>65.2% of CT employable population</i>	54,638 <i>63.2% of county employable population</i>	12,507,191 <i>65.4% of state employable population</i>
Not in Labor Force	1,559 <i>34.8% of CT employable population</i>	31,824 <i>36.8% of county employable population</i>	6,602,867 <i>34.6% of state employable population</i>
Median Household Income (dollars)	\$70,241 <i>110.7% of county median household income</i>	\$63,480 <i>123.1% of state median household income</i>	\$51,563
Mean Household Income (dollars)	\$86,560 <i>101.1% of county mean household income</i>	\$85,620 <i>120.9% of state mean household income</i>	\$71,651

**Table 1.** Population and Income Characteristics for the Local and Regional Community

Category	Census Tract (CT) 3108.02	Comal County	Texas
Percent of People Living Below the Poverty Level	14.3%	9.9%	17.4%

U.S. Census Bureau (2010, 2012).

As identified in Table 1, the local human population in CT 3108.02 has a higher proportion of minority residents (30.9 percent of Hispanic/Latino population and 15.7 percent of the non-white/multi-racial population) than the remainder of Comal County (24.9 and 10.5 percent, respectively); however, this is still below the State of Texas averages (37.6 and 29.6 percent, respectively). The mean and median household incomes for the local population within CT 3108.02 are both greater (\$86,560 and \$70,241, respectively) than the mean and median household incomes for Comal County (\$85,620 and \$63,480, respectively) and the State of Texas (\$71,651 and \$51,563, respectively).

As the major urban population center for Comal County, the City of New Braunfels Chamber of Commerce (NBCC) maintains a list of the major employers in the area. For purposes of this EA, this list is assumed to generally apply to Comal County as a whole. Several industries are represented and some are seasonal operators. Currently, Comal Independent School District tops the list with 2,300 employees, followed by Schlitterbahn Waterpark and Wal-Mart Distribution Center, which both employ over 1,000 people each (NBCC 2014). CEMEX employees at the quarry ±90 people (NBCC 2014), accounting for 0.03 percent of the 2010 population of the City.

Residential neighborhoods are present to the north of the Balcones Quarry Northeast Area, including a subdivision under active construction adjacent to the northern boundary. Home values can be influenced by adjacent land uses, although differences between past appraised values and proven sale prices are used to determine future appraised values. Review of appraised values of homes occurring near the Balcones Quarry show no correlation between appraised value and distance from the quarry (Comal Appraisal District 2015).

Vibra-Tech Engineers, Inc. (Vibra-Tech) on behalf of CEMEX has monitored ground and air vibrations produced by each of the blasts performed at the CEMEX Balcones quarry over the past five years. The monitoring is performed using seismographs established at 15 locations within the community. The goals of the monitoring are to determine whether the blasts comply with U.S. Bureau of Mines (USBM) guidelines for the protection of residential structures near blasting activities, and to inform the design of future blasts based on local geology in order to reduce the seismic energy perceived in the community. Over the five-year period, none of the blasts has exceeded USBM guidelines at residential structures occurring in proximity to the quarry (Vibra-Tech 2015).

*xii. Public Health and Safety*

The CEMEX Balcones Quarry is regulated by the U.S. Department of Labor’s Mine Safety & Health Administration (MSHA). The purpose of MSHA is to administer the provisions of the Federal Mine Safety and Health Act of 1977 (Mine Act) and to enforce compliance with mandatory safety and health standards as a means to eliminate fatal accidents; to reduce the

frequency and severity of nonfatal accidents; to minimize health hazards; and to promote improved safety and health conditions in the Nation's mines. MSHA carries out the mandates of the Mine Act at all mining and mineral processing operations in the United States, regardless of size, number of employees, commodity mined, or method of extraction. The Mine Act requires MSHA to inspect surface mines at least twice a year to ensure the mine operation is complying with the mandatory safety and health standards such as the use of personal protective equipment, control of material spillage, control of dust emissions, etc.... If violations of safety or health standards are found, inspectors will issue citations to the mine operator.

## **B. Resources Not Considered for Detailed Analysis**

Resources not considered for detailed analysis are those that are not expected to be affected by the Proposed Action or the alternative actions because they are not known or are highly unlikely to be associated with the Proposed Action.

### *i. Surface Waters*

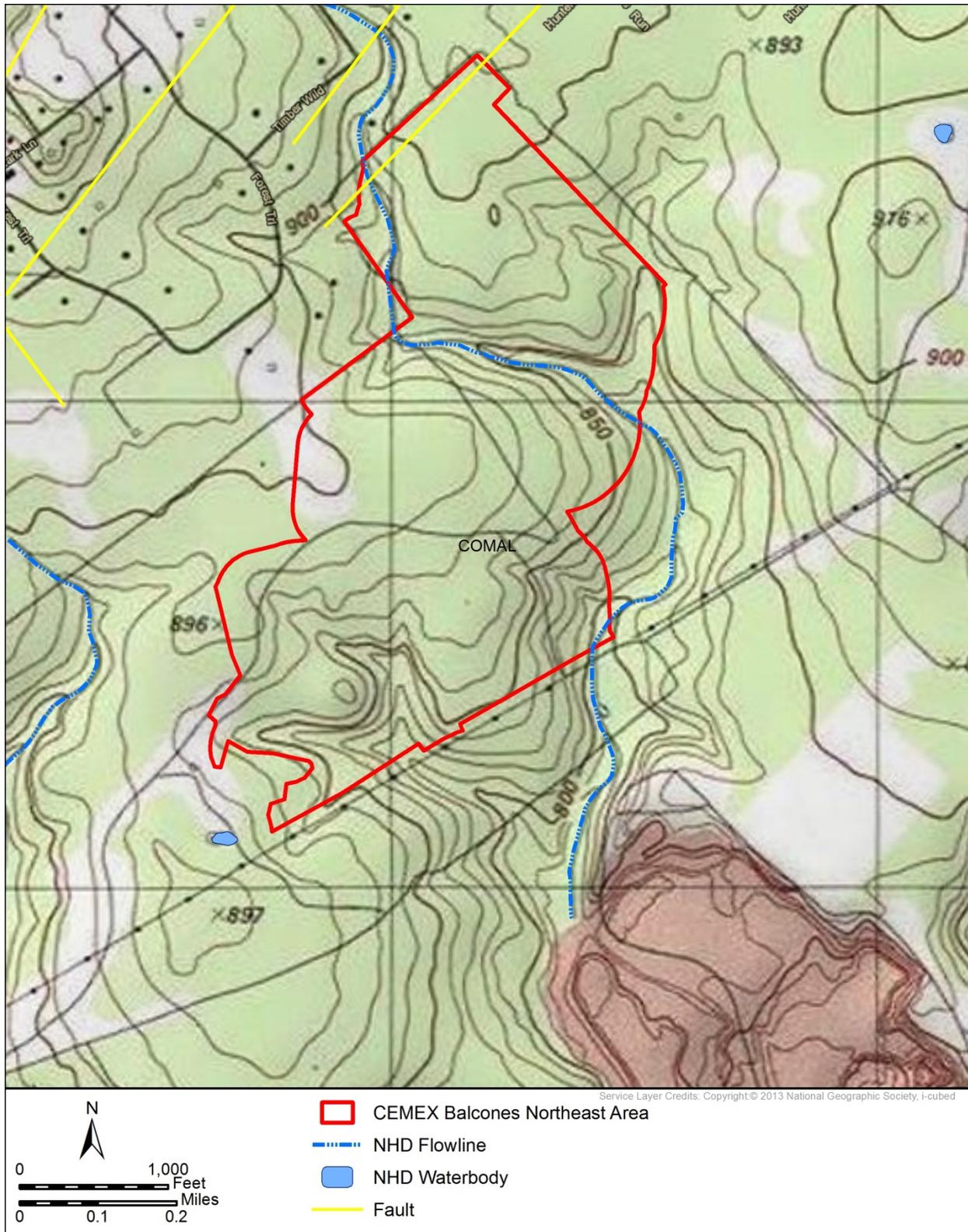
The Permit Area is located within the Dry Comal Creek watershed of the Guadalupe River Basin. General surface drainage is to the southeast, with surface elevations ranging from 780 to 900 feet above mean sea level. The Permit Area lies outside of any flood zones mapped by the Federal Emergency Management Agency (2014).

No permanent surface water is present in the Permit Area. Several drainage channels are present in the Permit Area, one of which is identified in the National Hydrography Dataset (NHD) as an intermittent drainage channel (Figure 7). These drainage channels are ephemeral since runoff from rainfall, and not ground water, is the primary source of water. The drainages have been truncated off-site to the south by quarrying activities performed by a neighboring operation. All surface water runoff from the Permit Area drains into the adjacent quarry pits to the south and does not contribute to any waters of the U.S. as defined by the federal Clean Water Act (SWCA 2014c).

### *ii. Other Species of Concern*

## **EDWARDS AQUIFER SPECIES**

Within the SASEA system, six aquatic species are listed as federally endangered and one is listed as federally threatened (referred to collectively as the Edwards Aquifer Species, Table 2). Although some of these species do not occur in Comal County, the Permit Area lies within the recharge zone of the SASEA and so contributes to the water that supports these species. Any incidental take of these species by CEMEX is authorized through their participation in the EARIP (fully explained above); therefore, these species are not considered further in this EA.



**Figure 7.** NHD-Identified Water Resources within the Permit Area.

**Table 2.** Edwards Aquifer Species

Species	Listing Status*	Edwards Aquifer Association	Current Known Range or Distribution	Comments
<b>AMPHIBIANS</b>				
San Marcos salamander ( <i>Eurycea nana</i> )	FT	Spring outlets and spring runs	Spring Lake and immediately below Spring Lake Dam	Critical habitat designated from Spring Lake to 164 feet (50 m) downstream of Spring Lake Dam
Texas blind salamander ( <i>Eurycea rathbuni</i> )	FE	Subterranean aquifer passages	Historically believed restricted to the aquifer beneath and near San Marcos; recently collected in Comal County at Hueco Springs, Comal Springs, Panther Canyon Well, and Mission Bowling Well.	No critical habitat is designated for this species.
<b>CRUSTACEANS</b>				
Peck's cave amphipod ( <i>Stygobromus pecki</i> )	FE	Spring outlets and spring runs	Aquifer below ground; collected at Comal Springs and Hueco Springs	Closest unit of critical habitat designated for the species is located at the Comal Spring Unit within the City of New Braunfels
<b>FISHES</b>				
Fountain darter ( <i>Etheostoma fonticola</i> )	FE	Spring runs	Spring Lake and Upper San Marcos River to the San Marcos wastewater treatment plant outfall; Headwaters of the Comal River and Landa Lake	Critical habitat designated from Spring Lake to 0.5 mile (0.8 km) downstream of the IH35 dam; no critical habitat in Comal County
<b>INSECTS</b>				
Comal Springs dryopid beetle ( <i>Stygoparnus comalensis</i> )	FE	Spring outlets and spring runs	Comal Springs and Fern Bank Springs	Critical habitat designated at Comal Springs and Fern Bank Springs
Comal Springs riffle beetle ( <i>Heterelmis comalensis</i> )	FE	Spring runs	Headwaters of San Marcos River	Critical habitat designated at Spring Lake
<b>PLANTS</b>				
Texas wild-rice ( <i>Zizania texana</i> )	FE	Spring outlets	Spring Lake and the upper reaches of the San Marcos River to just downstream of the San Marcos wastewater treatment plant	Threatened by sedimentation from urbanization in the watershed

\* FE = Federally Endangered; FT = Federally Threatened

**SPECIES WITH LIMITED POTENTIAL FOR OCCURRENCE**

Table 3 lists species identified by TPWD as occurring or potentially occurring in Comal County that are protected under state or federal endangered species regulations or that are under consideration for such protection. None of these species is known from, or likely to occur within, beneath, or be indirectly affected by activities within the Permit Area. Therefore, these other special status species are not considered for further analysis.

**Table 3.** Other Special Status Species Occurring in Comal County, Texas

Species Name	Listing Status <sup>1</sup>	Habitat Characteristics	Likely Occurrence in Permit Area
<b>AMPHIBIANS</b>			
Cascade Caverns salamander ( <i>Eurycea latitans complex</i> )	ST	Spring outlets and subterranean water-filled caverns in the Medina river, Guadalupe River, and Cibolo Creek watersheds within the Edwards Aquifer	Highly Unlikely – Permit Area is hydrologically down-gradient of the locations where this species is known to occur
Comal blind salamander ( <i>Eurycea tridentifera</i> )	ST	Spring outlets and underground waters of several caves in central Texas, including Comal Springs	None – Permit Area lacks springs and underground waters. However, water recharging the SASEA in the Permit Area expected to discharge at San Marcos Springs and possibly Comal Springs.
<b>BIRDS</b>			
Peregrine falcon ( <i>Falco peregrinus</i> ) <sup>2</sup>	ST	Year-round resident and local breeder in west Texas; occupies wide range of habitats during migration	Probable – Permit Area offers no breeding or wintering habitat, but migrant falcons likely fly over the Permit Area on a highly infrequent basis
Bald eagle ( <i>Haliaeetus leucocephalus</i> )	ST	Found primarily near rivers and large lakes; nests in tall trees or on cliffs near water	Probable – Permit Area lacks appropriate vegetation and aquatic environments so this species is not expected to use the Permit Area, but migrant eagles likely fly over the area on a highly infrequent basis
Black-capped vireo ( <i>Vireo atricapilla</i> )	FE/SE	Oak-juniper woodlands with distinctive patchy, two-layered aspect; shrub and tree layer with open, grassy spaces; requires foliage reaching to ground level for nesting cover	Very Low – Vegetation structure on the Permit Area is not representative of suitable vireo habitat; no black-capped vireos were detected in the Permit Area incidental to the GCWA survey performed in the spring of 2013 and 2014. Potential for occurrence limited to migrant individuals
Sprague’s pipit ( <i>Anthus spragueii</i> )	C	Only present in Texas during migration and winter, mid-September to early April; can be locally common in coastal grasslands, uncommon to rare further west	Probable – Permit Area lacks appropriate grassland vegetation to provide wintering habitat. Migrant pipits likely occur on a highly infrequent basis in grassy portions of the Permit Area
Whooping crane ( <i>Grus americana</i> )	FE/SE	Potential migrant via plains throughout most of state to coast	No potential for cranes to occur on the ground in the Permit Area because it lacks migratory stop-over or feeding habitats. Small numbers of cranes may fly high over the Permit Area during migration on an annual basis
Zone-tailed hawk ( <i>Buteo albonotatus</i> )	ST	Arid, usually remote, open country, including open deciduous or pine-oak woodland	Very Low – Permit Area lacks appropriate nesting and wintering habitat. Migrant individuals may rarely fly over the Permit Area
<b>MAMMALS</b>			
Black bear ( <i>Ursus americanus</i> )	FT-SA/ST	Forested areas within the mountain ranges of west Texas; listed due to its similarity in appearance to the Louisiana black bear, which is federally listed as endangered.	Very Low – Permit Area outside the regular range of this species. Possibility exists for a wandering bear to traverse the region
Jaguarundi ( <i>Herpailurus yaguarondi</i> )	FE/SE	Thick, brushy lowland areas with cactus, mesquite and other spiny plants; also found in swamps and forests; near water favored	None – Permit Area lacks thick brushland vegetation and is far removed from the known and potential range of this species

**Table 3.** Other Special Status Species Occurring in Comal County, Texas

Species Name	Listing Status <sup>1</sup>	Habitat Characteristics	Likely Occurrence in Permit Area
Red wolf ( <i>Canis rufus</i> )	FE/SE	Formerly known throughout eastern half of Texas in brushy and forested areas, as well as coastal prairies	None – Extirpated from Texas
<b>REPTILES</b>			
Cagle's map turtle ( <i>Graptemys caglei</i> )	ST	Endemic to the Guadalupe River System; shallow water with swift to moderate flow and gravel or cobble bottom, connected by deeper pools with a slower flow rate; gravel bars and transition areas between riffles and pools especially important in providing insect prey	None – Permit Area lacks appropriate riverine habitat or connection to habitat used by this species
Texas horned lizard ( <i>Phrynosoma cornutum</i> )	ST	Open, arid and semi-arid regions with sparse vegetation, including grass, cactus, scattered brush or scrubby trees	Highly Unlikely – Permit Area is densely vegetated with juniper-oak woodlands
<b>MOLLUSKS</b>			
False spike mussel ( <i>Quadrula mitchelli</i> )	ST	Surface water substrate; Rio Grande, Brazos, Colorado, and Guadalupe (historic) River basins	None – Species is possibly extirpated in Texas; Permit Area lacks riverine habitat
Golden orb ( <i>Quadrula aurea</i> )	FC/ST	Surface water substrate; Guadalupe, San Antonio, Lower San Marcos, and Nueces River basins	None— No perennial streams or waterbodies within the Permit Area. However, water recharging the SASEA in the Permit Area is expected to discharge at San Marcos Springs and travel downstream to the Lower San Marcos River.
Texas fatmucket ( <i>Lampsilis bracteata</i> )	FC/ST	Surface water substrate; Colorado and Guadalupe River basins	None— No perennial streams or waterbodies within the Permit Area and no populations known to occur hydrologically down-gradient of the Permit Area.
<b>PLANTS</b>			
Bracted twistflower ( <i>Streptanthus bracteatus</i> )	C	Shallow, well-drained gravelly clays and clay loams over limestone in oak juniper woodlands and associated openings, on steep to moderate slopes and in canyon bottoms; several known soils include Tarrant, Brackett, or Speck over Edwards, Glen Rose, and Walnut geologic formations	Not Likely—Permit Area lacks mesic canyons or steep drainages that would provide habitat for this species.

Texas Parks and Wildlife Department (TPWD). Annotated county lists of rare species – Comal County. Last revision: October 2, 2012.

<sup>1</sup> FE = Federally Endangered; FT = Federally Threatened; C = Federal Candidate for Listing; SE = State Endangered; ST = State Threatened; SA = Threatened by Similarity of Appearance

<sup>2</sup> Includes the subspecies American Peregrine Falcon (*Falco peregrinus anatum*)

As stated in Table 3, no realistic potential exists to adversely affect these species as a result of clearing in advance of quarrying the Permit Area; therefore, they are not considered for further analysis.

**iii. Prime Soils and Unique Agricultural Lands**

Soils in the Permit Area have been classified within the Rumble-Comfort association (RUD), undulating soil unit (Batte 1984). This association consists of shallow to moderately deep soils formed on hilly terrain over indurated (hardened) limestone of the Edwards Plateau (Batte 1984). Soils within the association are typified by a surface layer consisting of stony, reddish-brown, clay loam overlying dark, reddish-brown, extremely stony clay (Batte 1984). Chert derived from decomposition of the Edwards Group of limestones is typically abundant in this soil association. The U.S. Department of Agriculture defines prime and unique agricultural land as cropland, pastureland, rangeland, forest land, or other land, but not urban built-up land, which is capable of being used as prime and unique farmland. No soils of the RUD map unit are considered to be prime or unique agricultural soils within Comal County. Therefore, this resource is not considered for further analysis.

**iv. Cultural Resources**

A cultural resources background review was conducted to determine if the Permit Area had been previously surveyed for cultural resources or if any archaeological sites have been recorded within or near the Permit Area (SWCA 2013). The background review revealed that one linear survey has been previously conducted within the Permit Area and an additional three more were conducted within a 1-mile radius. A total of 18 previously recorded archaeological sites are located within the 1-mile radius surrounding the Permit Area. Two of the previously recorded sites (41CM195 and 41CM196) are within the Permit Area boundary and are recorded as prehistoric lithic scatters, which are not recommended as significant.

In accordance with section 106 of the National Historic Preservation Act (36 CFR 800.4 (b)(1)), SWCA conducted a preliminary archaeological investigation consisting of an intensive pedestrian survey with subsurface excavations within the Permit Area. All field work was conducted from November 5–7, 2013. A total of 205 shovel tests were excavated in support of the project. During the survey, 10 isolated finds (IFs) (IFs 1–10) and 4 archaeological sites (41CM358–361) were newly identified. The IFs are predominantly prehistoric but also include several twentieth century artifacts. The four archaeological sites (41CM358–361) are all prehistoric lithic procurement scatters with chipped stone tool fragments, tested cobbles, and core fragments. No evidence of cultural material was observed at previously recorded sites 41CM195 or 41CM196. Due to the lack of deposition in an eroded upland environment and varying degrees of disturbance, none of these sites was recommended as eligible for inclusion on the National Register of Historic Places (NRHP). Furthermore, SWCA advised the applicant that no additional investigation was needed prior to CEMEX continuing their operation plans for the Permit Area. SWCA recommended a finding of *No Historic Properties Affected* per 36 CFR 800.4(d)(1) (SWCA 2013). Because no sites eligible for inclusion in the NRHP were discovered, no significant effects to cultural resources are expected as a result of the Proposed Project. No detailed impacts analysis of the considered alternatives is required for cultural resources, which eliminates it from further discussion.

**v. Environmental Justice**

Executive Order 12898 issued in 1994 directs federal agencies to identify and address disproportionately high and adverse human health or environmental effects of their actions on minority communities and low-income communities. For the purpose of this EA, a minority community is defined as one where the minority population (persons classified as non-white or

Hispanic) of the local census block exceeds 50 percent of the total population for the census tract or the percentage of minority persons in the local census tract is meaningfully greater than the percentage for Comal County. A low-income community for the purpose of this EA is defined as one where the percentage of persons within the local census tract classified by the U.S. Census Bureau as living below the poverty level exceeds the overall percentage for Comal County. Review of U.S. Census Bureau data from the 2010 decennial census and the estimates from the 2008-2012 American Community Survey revealed no environmental justice populations are present within the Census Tract encompassing the Permit Area (see Table 1). Therefore, environmental justice was not considered for detailed analysis.

#### **IV. ENVIRONMENTAL EFFECTS**

##### **A. Analysis Framework**

The scope of a NEPA analysis associated with an HCP addresses "the direct, indirect, and cumulative effects of the proposed incidental take and the mitigation and minimization measures proposed from implementation of the HCP" (Service and National Marine Fisheries Service 1996). In this case, the proposed incidental take would result from the removal or alteration by mechanical means of woodland vegetation seasonally used by one to two male GCWAs. Minimization measures include observing seasonal clearing restrictions, implementing oak wilt prevention measures, and contributing to the permanent protection and management of GCWA habitat off-site. This EA also analyzes the effects on the natural and human environment of the proposed clearing in advance of quarrying in the Permit Area.

An *effect* is defined by NEPA regulations as either a direct result of an action that occurs at the same time and place as the action or an indirect result of an action that occurs later in time or in a different place and is reasonably foreseeable (40 CFR 1508.8). *Cumulative effects* are the incremental environmental impacts or effects of the action considered together with impacts of past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions (40 CFR 1508.7).

One of the purposes of an EA is to determine whether or not the proposed action has significant effects on the quality of the natural, physical, and human environment. The potential significance of an effect should be considered in the context of the direction of the effect (adverse or beneficial), the relative duration of the effect, the relative magnitude or intensity of the effect, and the relative geographic scale of the effect (40 CFR 1508.8).

The NEPA regulations require the analysis of "no action" as a benchmark that enables decision makers to assess the relative magnitude of environmental effects of the action alternatives (Service 2003). If no difference is anticipated between the future condition under the No Action Alternative and the action alternatives, then the action may be said to have no effect. In this particular case, the primary difference between the No Action Alternative and the Proposed Action is the implementation of minimization measures and mitigation for the GCWA, since quarrying of the entire Permit Area could ultimately occur if GCWAs cease utilization of it.

For the purposes of this analysis, the following general definitions are based on the factors to be considered for determining significance including the context and the intensity of the impacts (40 CFR 1508.27):

- **Direction of Effect** – Direction of an effect may be beneficial or adverse. Beneficial effects are those that are reasonably likely to improve the status or condition of a resource, while adverse effects are those that would degrade or cause a decline in the status or condition of a resource.
- **Duration of Effect** – Duration may be short-term, medium-term, or long-term. Short-term effects are temporary conditions relevant only during or for a short time after completion of activities (typically a duration of no more than several weeks). Medium-term effects would be expected to persist from more than several weeks to over a period of years. Long-term effects would be expected to be permanent conditions or at least persist for a decade or more.
- **Intensity of Effect** – Intensity is measured as negligible, minor, moderate, or major. Negligible effects are those that cannot be reasonably expected to have a measurable effect on the condition or status of the resource. Minor effects may have a detectable, but very limited, effect on the resource, but would not reasonably be expected to significantly influence the overall condition or status of the resource. Moderate effects would likely have measurable effects on the identified resource that could also influence the overall condition or status of the resource. Major effects would have a readily apparent and substantial influence on the overall condition or status of a resource.
- **Context of Effect** – Effects that influence a resource only within the boundary of the Permit Area are referred to as project-scale effects. The scale of effects extending beyond the limits of the Permit Area may be local, regional, or global. Local scale effects would influence the affected resources on adjacent properties or the immediate vicinity of the Permit Area. Regional scale effects would generally be felt more broadly across the county or adjacent counties, while global effects would apply to the entire geographic extent of the resource.

**B. Summary of Potential Effects**

A summary of the potential environmental effects of the alternative actions is provided in Table 4. The analyses that led to these conclusions are provided in Section 4.3.

**Table 4.** Summary of the Potential Environmental Effects by Resource

<b>Resource</b>	<b>Proposed Action</b>	<b>No Action Alternative</b>
Ground Water Resources	Negligible	None to Negligible
Vegetation Communities	Negligible	Negligible
Geology	Negligible	Negligible
HCP Covered Species	Minor	None to Minor
Other Wildlife (including migratory birds)	Negligible to Minor	Negligible to Minor
Air Quality	Minor	Minor
Climate	Negligible	Negligible
Noise	Negligible to Minor	Negligible to Minor
Visual Resources	Negligible to Minor	Negligible to Minor
Land Use	Negligible	Negligible
Socioeconomics	Negligible to Moderate	Negligible to Moderate
Human Health and Safety	Minor	Minor

**C. Effects Analysis**

For determining the significance of the action, the following sections analyze both the context and intensity (using the definitions above) of the potential effects from the Proposed Action and the No Action Alternative on the natural and human environment.

*i. Ground Water Resources*

**Proposed Action**

The Proposed Action would result in the removal of all vegetation within the context of the Permit Area. This would decrease the amount of water used on-site by plants as a result of evapotranspiration and create a slight increase in the on-site contribution to recharge of the SASEA, a beneficial effect which would directly impact water quantity, if only negligibly. As clearing progresses and additional vegetation is removed from the property, on-site contribution to recharge of the SASEA would continue to increase incrementally as the vegetation is removed (Wilcox 2007).

No fuel or oil will be stored in the Permit Area and therefore, no potential pollutants from fuel or oil storage facilities in the Permit Area are expected to occur. Therefore, no impacts from fuel or oil on ground water resources are expected to occur from the Proposed Action. Further protections to ground water quality include a minimum recommended separation of 25 feet between the quarry-pit floor and the ground water level for quarries in the recharge zone (TCEQ 2012). This distance is based on the maximum propagation of fractures from blasting operation. The water level in the Edwards Aquifer varies substantially across the area and with changes in rainfall. Consequently, the TCEQ recommends that the 25-foot separation be maintained even during relatively wet years (TCEQ 2012). As represented by CEMEX, the Balcones Quarry maintains at least 25 feet or more between the quarry-pit floor and the Edwards Aquifer ground water level throughout the quarry property. Storm water runoff within the Permit Area will remain onsite as is done in the existing mine operation where the limestone above the aquifer serves as a buffer and filter.

While the Permit Area does contain several ephemeral drainage channels, they do not meet the definition of a water of the U.S. under the CWA because no connection or other conveyance of surface runoff to a tributary system exists that would connect the on-site drainages to navigable waters (i.e., Guadalupe River). Specifically, these drainages have been truncated off-site to the south by mining activity conducted by an adjacent quarry operator. Therefore, there are no impacts to waters of the U.S. from the Proposed Action.

The Balcones Quarry is authorized to withdraw approximately 2,269.2 acre-feet of water (before critical period reductions) from the Edwards Aquifer under the current permits issued by the Edwards Aquifer Authority. According to CEMEX, the Proposed Project within the Permit Area will not increase water withdrawal from the Edwards Aquifer.

Within the context of the Permit Area, this alternative will not have a significant effect, due to the negligible effects on ground water resources.

**No Action Alternative**

Under the No Action Alternative, about 102 acres would be quarried while the remaining 143.9 acres of potential GCWA habitat on-site would not be removed. Quarrying operations within this smaller 102 acre footprint within the context of the Permit Area would be performed using the same controls for protection of the SASEA that are identified in the Proposed Action. Any incremental increase in recharge from the removal of a smaller amount of trees than under the Proposed Action would still be negligible compared to the size of this portion of the SASEA recharge zone. CEMEX's annual withdrawal of water from the SASEA for the Balcones operations would be identical to that under the Proposed Action. Therefore, within the context of the Permit Area, this

alternative will not have a significant effect on ground water resources, since it would result in the same types of effects as the Proposed Action, but on an insignificantly reduced scale.

### **Cumulative Effects**

The context for cumulative effects to ground water resources includes the entire SASEA. Cumulative effects to ground water resources associated with the Permit Area have recently been evaluated by the Service in the EIS for the EARIP HCP (Service 2012a). Regardless, the 199.4-acre Permit Area is a mere fraction (0.025 percent) of the entire SASEA, which spans approximately 800,000 acres and receives a 10-year (2003 – 2012) median recharge of 500,000 acre-feet per year (EAA 2013). Any incremental increase in recharge resulting from the removal of trees would be negligible in light of the total amount of water recharging the SASEA. Because water withdrawal from the Edwards Aquifer is not expected to increase as a result of the Proposed Project, no cumulative effects associated with the Proposed Project on ground water quantity or water demand are expected to occur.

Therefore, within the context of the Permit Area and SASEA, neither the Proposed Action nor the No Action alternative will have a significant effect on ground water resources.

### *ii. Vegetation Communities*

#### **Proposed Action**

Juniper-oak woodland and juniper shrubland habitats within Comal County span over 125,086 acres (Service 2010). Under the Proposed Action, approximately 199.4 acres of juniper and juniper-oak woodland within the Permit Area would be removed. This is less than one percent of the woodland in Comal County. Potential adverse effects to vegetation communities would likely be negligible over the long-term since juniper-oak woodland and juniper shrubland are common across the local and regional landscapes of Comal County and the Edwards Plateau, respectively. Therefore, within the context of Comal County the effects of the proposed action will not have significant impacts on vegetation communities.

#### **No Action Alternative**

Under the No Action Alternative, approximately 102 acres of woodland and shrubland vegetation within the Permit Area would be removed, leaving 143.9 acres of on-site and 6.45 acres of off-site undisturbed potential GCWA habitat. Because this amount of vegetation is small when compared to the amount of vegetation with the county, effects to this portion of the Permit Area would be the same as the Proposed Action. Therefore, within the context of Comal County the effects of the no action will not have significant impacts on vegetation communities.

#### **Cumulative Effects**

The area of analysis for cumulative effects to the vegetation is Comal County. The Comal County RHCP estimates (circa 2007) native woodlands that contain a mixture of mature Ashe juniper and hardwood forest land cover in Comal County total approximately 65,581 acres (Service 2010). Since this type of vegetation community is representative of potential GCWA habitat, the majority of these woodlands are expected to remain undisturbed under ESA protection. In fact, the Comal County RHCP projects that land development activities over the next 30 years will result in the loss of approximately 10,476 acres of this type of vegetation community (Service 2010). More than 55,105 acres or 80 percent of this wooded habitat are projected to remain unaffected in the county in various preserves and other protected lands. The cumulative losses of vegetation communities similar to those occurring in the Permit Area over the next 30 years in Comal County are expected

to affect less than 16 percent of the currently available woodland vegetation. Therefore, within the context of Comal County the cumulative effects of the proposed action will not have a significant impact on vegetation communities.

*iii. Geology*

**Proposed Action**

Under the Proposed Action, the Permit Area would ultimately be quarried in full within the limits of the perimeter berm down to approximately 200 feet deep within the Person Formation, a persistent confining bed within the Edwards Aquifer. The Person formation ranges from 170 to 270 feet in thickness and is an abundant geological resource in the region. While the removal of this amount of the Person Formation would constitute an unavoidable adverse effect on the resource, this is not a rare or sensitive resource. Therefore, effects to geologic resources are considered negligible and will not have a significant impact on geologic resources.

At this time, there are no known deposits of commercial mineral materials within the Permit Area; therefore, the Proposed Project is not expected to present conflicts which could interfere with the recovery of other minerals.

**No Action Alternative**

Under the No Action Alternative, only 102 acres of the Permit Area would be subject to limestone removal of the Person Formation. The same negligible effect of finite removal of this geology resource from the Proposed Project is expected under this alternative, though on an insignificantly reduced scale. Therefore, the effects of the no action alternative will not have a significant impact on geologic resources.

**Cumulative Effects**

The area of analysis for cumulative effects to geology is the surface extent of the Edwards Group in Comal County. Approximately 7,360 acres of the Edwards Group is currently exposed in Comal County (USGS 2014). The Permit Area accounts for a small portion (2.7 percent) of this exposed geologic resource. The Edwards Group is exposed across approximately two percent of Comal County. Competition between developed land use and resource recovery will likely increase, slowing the removal of limestone. However, based on the expansive range of the Edwards Group below the ground surface, cumulative effects to the geology resource are expected to be negligible over time. Therefore, the cumulative effects of the proposed action will not have a significant impact on geologic resources.

*iv. HCP Covered Species*

**Proposed Action**

Under the Proposed Action, existing stands of juniper and juniper-oak woodland within the Permit Area would be removed. The expected direct and indirect effects of the Proposed Action on the GCWA are described in detail in the HCP (SWCA 2014a). Direct effects to individual GCWAs would be avoided by conducting vegetation clearing activities while the species is not present in central Texas. Indirect effects would occur from the loss of GCWA habitat within the 199.4-acre Permit Area. The 2013 and 2014 surveys indicate that likely no more than one or two GCWA territories occur in the Permit Area in any given year. Based on mapping the distribution of hardwood trees, approximately 143.9 acres of woodland were identified on the property as having habitat characteristics suitable for use by GCWAs (SWCA 2014a). However, 0.8 acres of the

GCWA habitat is within 300 feet of existing development; therefore, this is already considered partially impacted (see Figure 4). As such, 0.4 acres is subtracted from the 143.9 acres for a total of 143.5 acres of GCWA habitat to be impacted on-site by the Covered Activities. Additionally, 6.45 acres of off-site woodland was identified as having habitat characteristics suitable for use by GCWAs that could be indirectly affected by the Proposed Project.

Consequently, the viability of this off-site habitat is expected to be lost as a result of the clearing. Approximately 5.07 acres of the 6.45 acres of off-site habitat occurs within 300 feet of the existing residential development (black cross-hatch on Figure 2). As such, half (2.56 acres) of the GCWA habitat viability in this 5.07-acre area is considered to already have been lost.<sup>3</sup> Add the other half to the remaining 1.38 acres ( $6.45 - 5.07 = 1.38$ ) and the result is 3.94 acres of off-site impacts. Therefore, the number of acres of on-site GCWA habitat impact (143.5) plus 3.94 acres of off-site impact results in total impact acreage of 147.44 acres.

The loss of the 143.9 acres of on-site and 6.45 acres of off-site habitat might cause a returning male GCWA to seek habitat elsewhere and would remove habitat capable of supporting one territory. This loss is not likely, individually or cumulatively, to have more than a negligible effect on the overall distribution, long-term survival, or recovery of the GCWA, either range-wide or in Comal County, where the Proposed Project would comprise 0.20 percent of the expected effects to GCWA habitat from quarrying activities over the next 30 years. The effect of losing approximately 143.9 acres on-site and 6.45 acres off-site of partially occupied GCWA habitat is negligible with respect to the range-wide status of the species given the small number of birds that use that habitat on an annual basis. Even at regional and local levels, the adverse effects of the Proposed Project to the GCWA may be considered minor because of the small number of birds involved. Therefore, the effects of the proposed action will not have a significant impact on the endangered GCWA.

The proposed mitigation measure includes the purchase of 147.44 acres worth of conservation credits from a Service-approved GCWA conservation bank. This would provide a long-term benefit to the GCWA because it would afford the permanent protection and management of habitat included within a large block of habitat known to support GCWAs. Therefore, the avoidance, minimization, and mitigation measures are expected to provide the GCWA with a minor net beneficial effect.

### **No Action Alternative**

Under the No Action Alternative, the Service would not issue an ITP to CEMEX. It is the Service's understanding that CEMEX would quarry 102 acres leaving the remaining 143.9 acres of potential GCWA habitat on-site.

Magness et al. (2006) showed a positive relationship between GCWA occurrence and total amount of woodland (GCWA habitat or not) on the landscape. The amount of woodland expected to be preserved on-site under the No Action Alternative was identified in light of the findings of Magness et al. (2006) and is believed by CEMEX as adequate to ensure long-term viability of the avoided potential habitat. However, it is conceivable that under the No Action Alternative, GCWAs could ultimately abandon woodland preserved in the Permit Area in part as a result of loss of woodland on adjacent properties, as part of future projected growth. If GCWAs discontinued use of the property

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<sup>3</sup> This is based on consistent use of 300 feet by the Service in section 10(a)(1)(B) incidental take permit negotiations and Section 7 consultations as the distance out to which woodland clearing activities should be considered to have potential to indirectly affect GCWAs and their habitat.

under this alternative, then this alternative would cause a minor adverse effect similar to that expected under the Proposed Alternative, except that CEMEX would not purchase 147.44 acres worth of credit from a Service-approved GCWA conservation bank. Therefore, this alternative does not provide the minor beneficial effect expected under the Proposed Alternative and, the effects of the no action alternative will not have a significant impact on the GCWA.

### **Cumulative Effects**

The area of analysis for cumulative effects to the GCWA includes GCWA Recovery Region 6 (which includes Comal County) and GCWA Recovery Region 8 (located in Bandera County). The GCWA habitat removed by the Proposed Project in Recovery Region 6 would be offset by preservation in either Recovery Region 6 (Comal County RHCP) or 8 (current Service-approved conservation banks with Comal County in their service area).

Morrison et al. (2010) mapped the distribution of GCWA habitat and identified 389,436 acres of potential GCWA habitat in Recovery Region 6. Loomis-Austin, Inc. (LAI 2008) identified a total of 689,259 acres of potential GCWA habitat in Recovery Region 6, with 242,625 of those acres considered likely to be occupied. Diamond (2007) identified a total of 769,581 acres of potential GCWA habitat in Recovery Region 6. Despite the variations in the habitat totals for Recovery Region 6, these studies indicate a large amount of potential GCWA habitat is still intact in Recovery Region 6. As analyzed as part of the Comal County Regional HCP, cumulative habitat losses over 30 years in Comal County are not expected to result in jeopardy of the GCWA, preclude attainment of GCWA recovery objectives in Comal County, nor extirpate the GCWA from Comal County (Service 2010). The habitat loss as a result of the Proposed Project constitutes a 0.04 percent loss in Recovery Region 6 (based on Morrison et al. 2010 estimates) and an even more infinitesimal range-wide loss. Therefore, the cumulative effects of the proposed action will not have a significant impact on GCWA.

### ***v. Other Wildlife***

#### **Proposed Action**

Under the Proposed Action, it is expected that the 199.4-acre Permit Area would be cleared in its entirety for quarrying activities. Vegetation- and soil-clearing activities would likely result in direct mortality of those terrestrial wildlife species, particularly reptiles and amphibians, that are not mobile enough to escape construction equipment or that could be hibernating when the clearing activities occurred. Most individual mammals and migratory birds are expected to be capable of avoiding direct impacts from construction equipment.

The loss of woodland habitat in the Permit Area would also indirectly affect wildlife through loss or degradation of food resources, shelter, and nesting areas (Coleman 2007). This habitat loss also intensifies the abrupt landscape change from a relatively undisturbed environment to an industrial setting devoid of habitat, which is increasingly occurring in the immediate vicinity of the Permit Area.

Apart from the GCWA, wildlife species affected by vegetation clearing in the Permit Area are generally expected to be common locally and regionally because similar juniper and juniper-oak woodlands are widespread across western Comal County, where they cover approximately 125,086 acres (Service 2010). The current composition of the general wildlife community within the Permit Area includes many species that are common to both suburban and rural environments. Individual animals escaping the machinery used to clear the property of vegetation and soil would be displaced

initially to adjacent properties, with some then likely dispersing to greater distances. These animals would be expected to attempt to establish new home ranges or territories in habitats already occupied by members of their own species. This would likely lead to competition for space and resources and to localized reductions in population for some species because adjacent habitats would likely be incapable of absorbing all animals displaced from the Permit Area. Given the current composition of the general wildlife species and migratory birds within the Permit Area, the ultimate long-term effects to wildlife communities in the local and regional environment are likely to be minor. Contributing to the perpetual protection and management of GCWA habitat at an approved conservation bank would provide long-term benefits to many of these same wildlife species and migratory birds, with these benefits considered minor to the species involved given that nearly all are expected to be common and widespread.

Quarrying in the Permit Area would provide a beneficial effect to a small number of species that specialize in use of barren or rocky habitat. Such species include rock wren (*Salpinctes obsoletus*), canyon wren (*Catherpes mexicanus*), and some lizards (Lockwood and Freeman 2014, Kutac and Caran 1994). Given the scale of the Proposed Project and likely small number of individuals involved, benefits to these species at the population level are considered negligible. Therefore, the effects of the proposed action will not have a significant impact on wildlife.

### **No Action Alternative**

Under the No Action Alternative, over 40 percent of the Permit Area would be immediately or incrementally cleared of vegetation. Therefore, this alternative would result in the same types of effects to general wildlife communities and migratory birds as the Proposed Action, but at a reduced scale. Fewer animals would be expected to be killed or injured by vegetation- and soil-clearing activities, and fewer animals would be displaced under this alternative than under the Proposed Action. Based on the acreages involved, these reductions are expected to have negligible consequences at the population level for the species involved. Given the current composition of the wildlife community in the Permit Area, the ultimate long-term effects to wildlife species and migratory birds in the local and regional environment under this alternative are expected to be minor. Therefore, the effects of the no action alternative will not have a significant impact on wildlife.

### **Cumulative Effects**

The area of analysis for cumulative effects to general wildlife is Comal County, based on comparative land use and socioeconomic factors. The cumulative effects of anticipated land use changes over the next 30 years within Comal County (mostly related to expanding land development and increase in human population) can be expected to alter the natural composition and stability of native wildlife communities (Service 2010). As discussed in Section 4.3.1 above, Bexar, Comal, and Hays counties have experienced rapid population growth in recent decades and are expected to continue on this growth trend through the forecasted year of 2060 (SCTRWPG 2010). Associated with population growth will be the expansion of residential, commercial, and industrial development throughout the landscape. Quarrying of the Permit Area will contribute to overall impacts to wildlife caused by the changing landscape and changes in land use. The intensity of these impacts is likely to be negligible to moderate at the local level depending on the species involved and their tolerance of human development and level of immunity to human persecution. Species that utilize only wooded habitats are likely to be most affected, while those that are habitat generalists or prefer open habitats will be less affected. Wildlife that does best in cultural areas should benefit from an increasing human population, although many of these species are non-native and some are considered pests. Reclamation efforts undertaken once quarrying operations have

ceased will not return the Permit Area to pre-disturbance level of vegetation diversity, but some wildlife species would eventually return. Cumulative effects to wildlife are expected to be negligible to minor at the regional level given that most species involved are common and widespread. Therefore, the cumulative effects of the proposed action will not have a significant impact on wildlife.

#### *vi. Air Quality*

##### **Proposed Action**

There will be no process equipment installations in the Permit Area; therefore, no emission increases are expected to occur by CEMEX in the Permit Area. Accordingly, there will be no impacts to the attainment area of Comal County from point source emissions. In addition, due to the size of the Permit Area, the type of construction occurring, and the programs and procedures implemented by CEMEX to control dust (as described in section III.A.vi above), short-term impacts to air quality from non-point source emissions from construction equipment exhaust and their dust-generating activities during the removal of vegetation and overburden (soil and loose upper layers of rock) are expected to be minor and not extend beyond the local scale given their expected duration (likely only a few days). Periodic mobile source emissions of exhaust and dust would then be expected in the medium- to long-term during quarrying operations. Therefore, the effects of the proposed action will not have a significant impact on air quality.

##### **No Action Alternative**

Under the No Action Alternative, just over 40 percent of the Permit Area would be quarried. Impacts to air quality would result from the same types of activities as those identified under the Proposed Action, although on a reduced scale. The clearing of vegetation and overburden would be completed over a shorter period of time. The daily release of dust and equipment exhaust during the quarrying phase under this alternative would be similar to that of the Proposed Action, but duration of the mining phase would be shorter. Impacts to air quality under the No Action Alternative are, therefore, similarly expected to be minor and not extend beyond the local scale. Approximately 143.9 acres of woodland would be retained on-site under this alternative, with the trees of the woodland providing for some natural air filtering capability that would not exist under the Proposed Alternative. Given the amount of woodland involved, the benefit to air quality received through retention of this woodland is expected to be negligible. Therefore, the effects of the no action alternative will not have a significant impact on air quality.

##### **Cumulative Effects**

The area of analysis for cumulative effects to air quality is Comal County. On-going quarry activity at the Balcones Quarry will contribute a minor amount to total emission of pollutants in Comal County. Cumulatively, air quality in Comal County is monitored and regulated through the Clean Air Act. Comal County is in attainment status for all NAAQS. Programs that are in place to comply with the Clean Air Act ensure that air quality meets federal standards. Therefore, significant adverse cumulative effects are not expected and thus will not have a significant impact on air quality.

#### *vii. Climate Change*

##### **Proposed Action**

Under the Proposed Action, it is expected that the Permit Area will be cleared and quarried. It is inevitable that some level of GHGs would be emitted through the operation of land clearing and on-

going use of quarrying equipment in the Permit Area and the operation of worker and supply vehicles traveling to and from the Permit Area. However, the relative contribution of these emissions to total world-wide emissions of GHGs is infinitesimally small and ultimately negligible. Therefore, the effects of the proposed action will not have a significant impact on climate change.

### **No Action Alternative**

Under the No Action Alternative, over 40 percent of the Permit Area would be quarried. Consequently over the life of the project, fewer GHG emissions would be expected under this alternative than under the Proposed Action because less land would be cleared and duration of the quarrying phase would be shorter. While fewer GHG emissions would be expected under the No Action Alternative than under the Proposed Action, both alternatives are expected to provide a negligible contribution to world-wide GHG emissions. Therefore, the effects of the no action alternative will not have a significant impact on climate change.

### **Cumulative Effects**

The Proposed Action would result in operation of equipment that would contribute to total world-wide GHG emissions, although that contribution would be so small as to be considered negligible. As a result, any change in climate affected by emissions resulting from the Proposed Action would be immeasurable.

Climate change in general, on a regional, statewide, or even at the global level, has been shown to affect local ecological communities. Nearly all species of plants and animals occurring in central Texas can be expected to be affected by significant climate change. Depending on the species and how broad or restricted its geographic range is, the effects of climate change on that species could be positive or negative, with some species having potential to be adversely affected in some portion of their range and positively affected in others. For example, the southern extent of the range of a species of the northern hemisphere could become inhospitable for that species if the planet were to become warmer, but the species may then become able to expand its range northward such that the total population ultimately suffered no net loss of individuals. Conversely, a species with a very limited range could find itself poorly adapted to habitat conditions altered through climate change and might not be able to evolve adaptations to that altered habitat in time to avoid extinction.

The GCWA has been identified by the EPA as highly vulnerable to climate change (EPA 2009). This designation was based on modeling that included, among others, factors such as population size, historic trends in population and range size, estimated physiological vulnerability to temperature and precipitation change, and likely extent of habitat loss due to climate change. Data used by the model concerning trends in GCWA population and range was almost two decades old and may no longer reflect current conditions. The model also did not contemplate the potential for GCWAs to shift their breeding season to earlier in the year (they already migrate earlier than other similar species likely due to heat-related decrease in prey resource base) in order to avoid any climate-change induced hotter summer seasons.

Nonetheless, we agree that GCWAs are likely more vulnerable to climate-change related impacts than many other species given that their breeding range is comparatively restricted in extent. The Permit Area is located at the southeastern edge of the range of the species, and supports very low quality GCWA habitat, largely owing to a paucity of deciduous trees. Mitigation proposed as part of the Proposed Action would contribute to the preservation and management of higher quality GCWA habitat that would be expected to be more resistant to climate-induced change in suitability.

Therefore, the cumulative effects of the proposed action will not have a significant impact on climate change.

*viii. Noise*

**Proposed Action**

Under the Proposed Action, the Permit Area would first be cleared of vegetation and overburden in preparation of mining. Equipment used for these operations would generate noise, and noise would be generated during the process by the breaking of tree trunks and limbs. Noise generated during this phase of the project would be of short duration, likely on the order of a few days. Material (rock, soil, wood) produced as a product of this clearing would be used to construct the perimeter berm. Because the perimeter berm would not be in place while the clearing activities occurred, adjacent homeowners may be exposed to increased levels of noise during this time. Noise generated during this time is likely to be considered a minor annoyance, depending on the distance between the operating equipment and the receptor (person hearing it). Consequent construction of the perimeter berm would also result in a short-term increase in local noise levels that likely would be considered a minor and short-term annoyance.

The perimeter berm will be completed prior to commencement of quarry operations. This berm will serve as a noise barrier for adjacent homeowners, as will the high walls of the quarry pit. The quarry floor will be progressively deepened, further buffering the noise of quarry operations from adjacent properties. For the quarry operations, limestone rock is loosened by blasting, which has been conducted at this quarry since 1969. For blasting, a rock drilling machine drills a pattern of holes in the rock and explosives are then loaded in the holes and detonated. The process is designed to limit and control the resulting vibration and noise. Shot rock is transported to the primary crusher, located outside the Permit Area, for further processing through the various processing stations.

During the lifetime of the quarry operations, there will be ongoing modification to the topography of the Permit Area, which will affect the acoustic setting. As quarrying progresses, the deepening excavation would increasingly block noise exposure for possible receptors to the north and east. The quarry pit would be more open to the south and west in the direction of the existing CEMEX quarry pits and facilities. Shock rock piles can also act as noise barriers over time, though these noise obstructions would be short-term as the pile heights and locations are expected to periodically change (David Dubbink Associates 2010).

The Permit Area is within the existing quarry property boundary that includes an existing mine and process operation, which has operated since 1969. It is anticipated that there will be no increase in noise levels from the Permit Area as compared to the existing facility operation.

High-intensity development including adjacent and existing quarry operations, primary road traffic, and urban areas are present to the east and southeast of the Permit Area. Some animals have been shown to habituate to noise sources once they learn that the noise does not pose a threat (Pater et al. 2006). Therefore, wildlife present within and adjacent to the Permit Area is assumed to be habituated to the noises associated with common quarry practices. As a result, negligible to minor effects to local wildlife are expected from operational noise because the noises associated with the quarry operation would be a continuation of existing conditions. Therefore, the effects of the proposed action will not have a significant impact on noise.

### **No Action Alternative**

Under the No Action Alternative, just over 40 percent of the Permit Area would be used for quarry activities; therefore, the types of effects would be the equivalent to those identified under the Proposed Action, though on an insignificantly reduced scale. Therefore, the effects of the no action alternative will not have a significant impact on noise.

### **Cumulative Effects**

The area of analysis for cumulative effects to noise receptors is all land within approximately 2.8 miles of the perimeter of the Permit Area, a conservative range. Noise from quarry operations is not expected to be audible beyond 1.8 miles of the interior of the perimeter berm, and the Permit Area is approximately 1 mile across at its longest. Therefore, an area of analysis with a diameter of 2.8 miles is expected to encompass the distance limit for the generated noise. This area includes most of the quarry pits of the CEMEX Balcones Quarry, and the CEMEX processing facilities. Also included in the area are a section of railroad tracks; sections of I-35, State Highway 46, Loop 337, and F.M. 1863; many local roads; and residential areas to the west, north, and northeast of the Permit Area.

Ambient noise in the area of analysis is expected to increase over time as the human population increases and traffic on local roads and highways increases as a result. No new roadways are proposed in the area of analysis, although several expansion and improvement projects have been funded in the surrounding area to respond to local population growth (TxDOT 2014). Those road projects could create short-term and medium-term increases in local noise during their construction phases.

Noise resulting from quarrying in the Permit Area would not be a new source of noise in the area of analysis, but the source of noise from quarry operations would shift eastward within the area of analysis over time. Thus, noise from the quarry may not be able to be heard from neighborhoods on the east side of the area of analysis at the start of activities, but it may be able to be heard from those locations in the future. This also suggests that people living west of the quarry may be able to hear some operations that they won't be able to hear later because those operations will move farther east.

CEMEX ships some product by rail, so some train noise from the existing operations within the area of analysis can be attributed to CEMEX activities. The Proposed Action would not add new sources of noise to the area of analysis. Because noises caused by quarry operations are expected to be low outside of the perimeter berm and property boundaries, the contribution to long-term noise levels in the area of analysis is expected to be minor. Therefore, the cumulative effects of the proposed action will not have a significant impact on noise.

## ***ix. Visual Resources***

### **Proposed Action**

Under the Proposed Action, the Permit Area would be cleared of vegetation and overburden to prepare for quarrying operations. These materials would be used to construct a berm along the northern, northeastern, and eastern CEMEX property boundary. The Permit Area lies directly east of active portions of the Balcones Quarry and immediately north of a neighboring quarry pit. Low to moderate density residential development interspersed with undeveloped lands is present to the north and east. The quarry activities within the Permit Area will not be visible from adjacent properties because of the perimeter berm.

Quarrying of the Permit Area would affect visual resources on a highly localized scale with visual screening expected to be provided by the surrounding vegetative berm. The view of woodland in the Permit Area from adjacent residential lots would be eliminated and replaced with a view of an earthen vegetated berm, which would likely be herbaceous. The berm would remain in place in perpetuity, so this alteration would be permanent. The quarry pit in the Permit Area would be visible only from within portions of the CEMEX property. Because the Permit Area is not visible from adjacent property owners, but their view would be blocked by a vegetated berm, impacts to visual resources from the Proposed Action are considered negligible to minor. Therefore, the effects of the proposed action will not have a significant impact on visual resources.

### **No Action Alternative**

Under the No Action Alternative, just over 40 percent of the Permit Area would be quarried. However, CEMEX would still be required by law to construct the perimeter berm in full; therefore, impacts to visual resources for adjacent landowners under the No Action Alternative would be essentially identical to those expected under the Proposed Action. Therefore, the effects of the no action alternative will not have a significant impact on visual resources.

### **Cumulative Effects**

The area of analysis for cumulative effects to visual resources is Comal County. The population of Comal County is expected to increase by approximately 67 percent in the next 46 years (SCTRWPG 2010). This growth will undoubtedly result in development of land in the county for residential, commercial, and industrial purposes and this would alter the landscape and existing visual resources. The Proposed Action would contribute to this shift but, overall, would be a minor factor in this change because the Permit Area is largely invisible to the general public excepting adjacent landowners. Therefore, the cumulative effects of the proposed action will not have a significant impact on visual resources.

## *x. Land Use*

### **Proposed Action**

Under the Proposed Action, the Permit Area, which receives no regular use by humans or livestock, would be cleared and quarried. This transition would likely happen over the course of several years, but ultimately the effects on land uses in the region would be negligible. Quarrying of the Permit Area would be a continuation of long-standing use of the existing CEMEX quarry property. Quarrying does not appear to deter development of adjacent lands, as homes are currently under construction directly adjacent to the CEMEX property boundary perimeter berm and property fence on the north side of the Balcones Quarry property. Therefore, impacts to land use are expected to be negligible and thus will not have a significant impact on land use.

### **No Action Alternative**

Under the No Action Alternative, a reduced amount of the Permit Area would be used for quarrying. The remaining portion of the Permit Area would continue to support woodland receiving no regular use by humans. Adjacent lands would be expected to be developed for residential uses in a manner similar to that expected to occur under the Proposed Action. Therefore, the No Action Alternative is also expected to have a negligible effect on the mix of land uses in the region, as rural, industrial, and residential uses are common in the area. Therefore, the effects of the no action alternative will not have a significant impact on land use.

### **Cumulative Effects**

The area of analysis for cumulative effects to land use is Comal County. Future population growth in Comal County is expected to result in the development of approximately 80,427 acres over the next 30 years (Service 2010). Quarrying under the Proposed Action would contribute to the conversion of undeveloped woodland and range land in Comal County to land developed for residential, commercial, and industrial uses. However, the many existing conservation actions that have occurred within this area already protect many thousands of acres of natural areas, parks, preserves, greenbelts, and open spaces. More than 55,105 acres or 80 percent of the forested habitat within the county are projected to remain unaffected in various preserves and other protected lands (Service 2010). Therefore, the region is expected to retain a mix of developed and undeveloped land uses over time. Cumulative land use effects are likely to have a minor to moderate adverse effect on the human environment, and thus will not have a significant impact on land use.

#### *xi. Socioeconomics*

### **Proposed Action**

Under the Proposed Action, CEMEX would quarry the tract in full. This continuation of quarrying activities from the Balcones Quarry is not expected to require CEMEX to increase its number of employees beyond its current work force. However, maintaining production would allow CEMEX to maintain rather than reduce its work force, with these people helping to support the local economy by paying taxes and purchasing goods and services from local merchants. In this regard, the Proposed Action would be expected to provide moderate to major economic benefits to CEMEX employees and negligible to moderate economic benefits to local merchants and members of the service industry, depending on how much of their business is provided by CEMEX employees. Quarrying the Permit Area in full would also benefit CEMEX as a corporation and benefit its shareholders, as it would allow CEMEX to maximize its return on investment in its property. Overall, the Proposed Action is expected to have minor to moderate beneficial effects on the local population and economy.

The CEMEX Balcones Quarry is one of several quarries that have operated in Comal County for decades. The presence of these quarries is expected to have already exerted influence on the housing market in neighborhoods built in proximity to the quarries. Currently, homes recently constructed directly adjacent to the Balcones Quarry Northeast Area property boundary have some of the highest appraised values of any homes located within the neighborhoods occurring in proximity to the CEMEX property (Comal Appraisal District 2015). Because quarrying is a temporary activity, view of the quarry will be blocked by a perimeter berm, and the quarry once abandoned could ultimately offer quiet open space, it may have little if any effect on home values in the long-term. In the short-term, the market values of homes located directly adjacent to the quarry property may be depressed, although the increasing Comal County population may sustain a demand for homes that is great enough to render adjacent presence of an active quarry inconsequential to market value. Overall, these factors suggest the Proposed Action will have a negligible to minor negative effect on home values in neighborhoods occurring in proximity to the Permit Area.

The results of five years of monitoring performed by Vibra-Tech indicate that blasting activities performed over that period have all been in compliance with USBM guidelines for protection of residential structures. The monitoring reveals the characteristics of the local geology with regard to its ability to transmit seismic waves, and is used to inform the design of future blasts to minimize the seismic energy perceived in the community. Continued monitoring and use of monitoring

results to inform and adapt future blast designs is expected to maintain compliance with USBM guidelines and prevent future blasting from causing structural damage to homes located in proximity to the Permit Area. Therefore, the Proposed Action is expected to have a negligible effect on the structural integrity of homes in the area and will not have a significant impact on socioeconomic resources.

Also under this alternative, CEMEX would purchase 147.44 acres worth of credit from a GCWA conservation bank. While the purpose of purchase of these credits is to benefit the GCWA, such purchase would also provide ancillary minor benefit to the owner(s) of the bank and contribute to the salaries paid to those people that operate and manage the conservation bank.

### **No Action Alternative**

Under the No Action Alternative, CEMEX would only quarry just over 40 percent of the Permit Area, leaving the remainder in a wooded state. While the Permit Area quarried under this alternative is smaller, it is expected that production rates would be nearly identical to those that would occur under the Proposed Alternative, with the difference between the two being that production in the Permit Area would end much sooner under the No Action Alternative because of the reduced amount of available resources.

The effect that the end of production in the Permit Area would have under this alternative would depend in part on whether or not CEMEX was immediately able to continue its operations by quarrying a property nearby to the west. At a minimum, quarrying under the No Action Alternative would cause CEMEX to lose the value of limestone reserves underlying the woodland preserved in the Permit Area, with these reserves having been purchased by CEMEX when it acquired the Balcones Quarry in 1994. This would represent an undesirable economic loss of significant intensity to CEMEX.

If CEMEX could not begin quarrying its western reserves upon conclusion of mining in the Permit Area, then production at the Balcones Quarry under the No Action Alternative would be reduced or shut down altogether until CEMEX acquired all permits and approvals necessary to allow it to begin quarrying its western reserves. Failure to maintain production would lead to layoffs or loss of employment for some or most CEMEX employees at the quarry. This would cause economic loss of significant intensity to CEMEX as a corporation. Layoffs or loss of employment would also cause hardships for the employees involved, depending on individual financial circumstances and how quickly they were able to find alternate employment. A reduction in work force would also have minor negative economic effects on local service industries such as gas stations, convenience stores, and restaurants that serve CEMEX employees.

If advancing quarrying activity causes a minor short-term depression in the market value of some homes in the general area, then the duration of that depression would be expected to be shorter under the No Action Alternative because quarrying activities would be completed in the Balcones Quarry Northeast Area sooner than under the Proposed Action. Continued monitoring of seismic energy produced by blasting activities would occur under either alternative, so the No Action Alternative would be expected to have a similar negligible effect on the structural integrity of nearby residences as expected under the Proposed Action. Therefore, the effects of the no action alternative will not have a significant impact on socioeconomics.

CEMEX would not purchase any credits from a GCWA conservation bank under the No Action Alternative. If those same credits were able to be sold by the bank owner(s) in a timely fashion to a

different entity in association with some other project, then the owner(s) would receive the same economic benefit expected under the Proposed Alternative. However, if those credits remained unsold for a lengthy period of time, then the bank owner(s) could suffer from having to incur uncompensated bank management costs.

### **Cumulative Effects**

The cumulative socioeconomic effects include Comal County and Bandera County. Cumulative effects to socioeconomics associated with the Permit Area have recently been evaluated by the Service in the EIS for the EARIP HCP (Service 2012a). The Proposed Project represents a moderate economic gain to CEMEX and its employees. It prevents strain on the economy of Comal and Bandera Counties by preventing job competition that could result if the plant were to shut down. Under the Proposed Action, all CEMEX employees would continue to work. It is reasonable to anticipate that Comal County will continue to grow. As Comal County faces a rapidly increasing population, additional projects, like the Proposed Project, would likely be in demand as the construction industry grows to meet the demands for more homes and infrastructure. Therefore, the cumulative effects of the proposed action will not have a significant impact on socioeconomics.

If the conservation funds that CEMEX would pay into a conservation bank go to GCWA Recovery Region 8, that would be a small economic loss in Comal County, but Bandera County would benefit from the influx of revenue. Overall, the cumulative socioeconomic effects of the Proposed Action are expected to be minor for the local and regional scales.

### ***xii. Public Health and Safety***

#### **Proposed Action**

Under the Proposed Action, the potential effects to the health and safety of the workers clearing the vegetation from the entire 199.4-acre Permit Area would be short-term, lasting only a few days. These include risk of injury from flying or falling debris, tripping, falling, and operating heavy machinery and vehicles, among others. To mitigate risk of injury or death, all CEMEX employees are trained to comply with all federal, state, and CEMEX safety rules and regulations, including mandatory annual MSHA refresher training, regular safety meetings, use of personal protective equipment, required breaks, and communication with supervisors. When clearing activities are completed for the day, all vehicles and machinery to remain on site overnight would undergo appropriate procedures to prevent theft, vandalism, and injury to the public. As a result of the Proposed Project (i.e., the quarrying and ongoing use of the Permit Area), the long-term effects would endure for the time necessary to extract all limestone resources from the entire 199.4-acre Permit Area. The MSHA safety rules and regulations in place to mitigate the short-term effects from vegetation clearing would remain in place to reduce the potential for worker injury over the life of the quarry. These short- and long-term effects to occupational and public health and safety are expected to be minor given the implementation of these precautions. Therefore, the effects of the proposed action will not have a significant impact on public health and safety.

#### **No Action Alternative**

Under the No Action Alternative, only approximately 102 acres of the Permit Area would be cleared and quarried. However, this alternative would result in the same minor effects, both short-term and long-term, to the workers and general public, though on a negligibly smaller scale. Therefore, the effects of the no action alternative will not have a significant impact on public health and safety.

## **Cumulative Effects**

The area of analysis for cumulative effects is Comal County. Quarries have been operating in Comal County since 1969. Since then, regulations related to human health and safety have improved, including the enactment of MSHA regulations and the establishment of PM NAAQS. Going forward, these regulations are likely to become more stringent. The cumulative effects on human health and safety are expected to be negligible as CEMEX would comply with all federal, state, and local regulations to protect the health of the general public and its employees. Therefore, the effects of the proposed action will not have a significant impact on public health and safety.

## **V. PUBLIC INVOLVEMENT**

Notice of availability of the draft EA and HCP was published on 13 May 2015 (80 FR 27349) for public review and comment. The public comment period was open for 60 days and closed on 13 July 2015. A newspaper story was published independently in the New Braunfels Herald-Zeitung on 14 May 2015 that notified readers of the CEMEX permit application and availability of the draft EA and draft HCP for public review and comment.

Nine comment letters from the general public were received by the Service during the public comment period (see Appendix A for the letters). One consolidated response to several comments is provided below and Table 5 summarizes all the comments and provides the Service's response.

Consolidated Response - Several commenters requested the Service not issue the permit to CEMEX and others were concerned that issuance of the proposed permit would displace GCWAs that use the tract and destroy this patch of habitat completely. Section 9 of the ESA prohibits "take" of any fish or wildlife species listed under the ESA as endangered or threatened. As defined by the ESA, "take" means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct" (16 USC § 1532(19)). "Harm" is further defined as significant habitat modification that actually kills or injures a listed species through impairing essential behavior such as breeding, feeding, or sheltering." (16 USC § 1532(19)). In 1982, Congress established a provision in section 10 of the ESA allowing "incidental take." Incidental take is defined as take that is "incidental to, and not the purpose of, the carrying out of an otherwise lawful activity." To lawfully conduct these activities private, non-federal entities can apply for an incidental take permit under section 10(a)(1)(B) of the ESA. In accordance with this section the following issuance criteria must be met: 1) the taking will be incidental; 2) the applicant will, to the maximum extent practicable, minimize and mitigate the impacts of such taking; 3) the applicant will ensure that adequate funding for the plan will be provided; 4) the taking will not appreciably reduce the likelihood of the survival and recovery of the species in the wild; and 5) any other measures the Secretary of the Interior may require as being necessary or appropriate. If these issuance criteria are met, the Service must issue the permit. While issuance of this permit would result in an overall net loss of GCWA habitat, the high quality habitat that will be permanently preserved by CEMEX is expected to benefit the GCWA in the long-term far more than the quarry tract currently does. Additionally, it is expected that the permanent protection of 147.44 acres of high quality habitat (CEMEX's mitigation) will result in the preservation of at least 5 territories (average of 25 acres per territory), when the quarry tract supports at most two birds with no documentation of a successful territory (i.e., the presence of a female, nest, or young).

**Table 5.** Public Comments Received and Service Responses to Those Comments.

<b>Comment</b>	<b>Commenter</b>	<b>Service Response</b>
The Service should not allow CEMEX to expand their operations, receive a permit from the Service, or acquire the identified land.	Dunsmore, Fey, Mauldin, Pepin, Peralez, Suhr-Hollis, Sullivan, Ulsh	The CEMEX Balcones quarry property, including the Balcones Quarry Northeast Area, consists of about 2,400 acres that were purchased for mining in 1965 by a predecessor company and acquired by CEMEX in 1994. Please also see the consolidated response above.
The property is home to wildlife and the proposed project will impact that wildlife.	Dunsmore, Fey, Schluter, Sullivan	Comment acknowledged
The proposed project will cause environmental damage.	Dunsmore, Pepin, Peralez	Comment acknowledged
The proposed project will result in loss of many trees. Forests have value beyond that which can be gained from selling wood and the minerals beneath them. Forests clean our air, purify our water, and cool and humidify our climate.	Dunsmore, Pepin, Suhr-Hollis	Comment acknowledged. Please also see consolidated response above.
Coyotes, skunks, snakes, and deer have increased in our yards, with these animals either posing danger to domestic animals or being a nuisance. The presence of these animals is the result of their having been displaced by CEMEX operations performed to date, and the Proposed Action would worsen the situation.	Fey	Comment acknowledged. Please also see consolidated response above.
The proposed project would damage homes built next to the CEMEX property.	Fey, Mauldin, Pepin	Please see the Socioeconomic sections of the EA where we added discussion of seismic monitoring and analyzed the potential for damage to homes.
The proposed project will cause dust and pollute the air. It will create human health hazards and cause kids with allergies to worsen.	Fey, Peralez, Suhr-Hollis, Sullivan	Please see the Air Quality sections of the EA where we added details on the requirements for CEMEX to maintain air quality.
Past CEMEX activities have driven away GCWAs from the permit area; CEMEX should not benefit from having driven away an endangered species.	Mauldin	We are unaware of any sightings or surveys documenting use of this property by GCWAs other than those conducted during 2013 and 2014.
The ESA was written to protect the GCWA and the Service should enforce it.	Mauldin	Please see consolidated response above.
The proposed project will endanger the GCWA and result in loss of GCWA habitat, which is a threat to the species.	Pepin, Schluter, Suhr-Hollis, Sullivan,	Please see consolidated response above.
The proposed project will decrease home values.	Peralez	Please see the Socioeconomic sections of the EA where we added discussion of impacts to home values and analyzed the potential for impacts to those values.
CEMEX could mine limestone on a property that is not endangered species habitat.	Schluter	Please see consolidated response above.
The proposed project will displace the GCWAs nesting on the CEMEX property. CEMEX is offering to provide habitats elsewhere for the GCWA, but this will not	Schluter	Comment acknowledged. Please also see consolidated response above.

**Table 5.** Public Comments Received and Service Responses to Those Comments.

Comment	Commenter	Service Response
save the birds using this tract.		
The proposed project would render the CEMEX property unsuitable for any future uses.	Schluter	Comment acknowledged
The proposed project will increase traffic and create noise pollution.	Suhr-Hollis, Sullivan	Noise from the quarry and traffic is expected from both the No Action and Proposed alternatives. However, it would be a continuation of current ongoing CEMEX activities.

**VI. LIST OF PREPARERS**

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## APPENDIX A. PUBLIC COMMENT LETTERS

6/17/2015

DEPARTMENT OF THE INTERIOR Mail - Comments regarding CEMEX plant expansion in New Braunfels, TX



AUES Consult, FW2 <fw2\_aues\_consult@fws.gov>

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## Comments regarding CEMEX plant expansion in New Braunfels, TX

1 message

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Jason Dunsmore <jasondunsmore@gmail.com>  
To: FW2\_AUES\_Consult@fws.gov

Wed, May 20, 2015 at 11:26 AM

To whom it may concern:

I do NOT support the CEMEX plant expanding their operations into Golden-Cheeked Warbler habitat, regardless of whether or not they take measures to restore Golden-Cheeked Warbler habitat elsewhere.

The fact that our economy places no more value on our native forests than the amount of profit that can be reaped by selling wood and minerals at market is humanity's fatal flaw and will most definitely result in the destruction of habitable land unless we do something to stop it.

Our native forests clean our air, purify our water, and cool and humidify our climate. They also support an incredibly diverse array of life, much of which is still unknown to us.

Best regards,  
Jason Dunsmore

7/15/2015

DEPARTMENT OF THE INTERIOR Mail - Reference: Cemex dHCP



AUES Consult, FW2 <fw2\_aues\_consult@fws.gov>

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**Reference: Cemex dHCP**

1 message

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**Fred & Roselyn Fey** <feyfredlyn@sbcglobal.net>  
To: FW2\_AUES\_Consult@fws.gov

Sun, Jul 12, 2015 at 5:55 PM

July 12, 2015

Adam Zerrenner  
Austin Ecological Services Field Office  
10711 Burnet Road Ste 200  
Austin, TX 78758

Re: Cemex' Request for Permit in Comal County

To Whom It May Concern:

We have been residents of the Oak View subdivision off Farm to Market Road 1863 (adjacent to the Shadow Hills subdivision) since 1972. We have seen Cemex's ongoing expansion of its operations from Interstate Highway 35 and have heard and felt the operations at Cemex by the almost daily blasting and the ever increasing dust. We are definitely in the path of the winds that carry the dust from operations at the Cemex plant.

The 199 acre tract where Cemex is requesting a permit may be a habitat for the endangered golden-cheeked warbler but it is also home to many wildlife including deer. As Cemex enlarges their operations in adjoining properties the wildlife around our homes has increased tremendously. Some of this wildlife (coyotes, skunks, snakes) have become a danger to our domestic animals and the deer a nuisance in our yards.

Our family and our neighbors are not in favor of Cemex receiving a permit to expand their operations into the specified 199 acre tract. Cemex' operations are already too close to our homes. Further expansion will only result in additional damage to the foundations of our homes and buildings, driveways, porches, etc. And, more importantly, because of the closer proximity to our established residences, there will be an even greater risk for more of the harmful and disgusting dust/pollution. The dust is a mounting concern as it does present a health hazard to both young and old who reside near the quarry activities.

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Please consider the health and safety of the "human" neighbors as well as the birds and wildlife that live in and near the quarry area.

7/15/2015

DEPARTMENT OF THE INTERIOR Mail - Reference: Cemex dHCP

Sincerely,

Fred and Roselyn Fey  
350 Lark Lane  
New Braunfels, TX 78132  
830-625-0537

## Fax Cover Sheet

EXPEDITOR SYSTEMS OF TEXAS  
 145 TIMBER WILD  
 NEW BRAUNFELS, TX 78132  
 830-620-8285  
 FAX 830-620-6284

Send to: <b>Austin Ecological Services Field Office</b>	From: <b>LARRY MAULDIN</b>
Attention: <b>Adam Zerrenner</b>	Date: <b>5-16-15</b>
Office location:	Office location:
Fax number <b>512-490-0974</b>	Phone number:

Total pages, including cover:   

**Comments:**

I am writing this note in regard to Cemex dHCP, or the permit request by Cemex in New Braunfels, Texas. Based on an article in the New Braunfels Herald-Zeitung, it seems apparent to me why there are very few golden-cheeked warblers in the target area. Perhaps the blasting-atmospheric and seismic have driven the warblers OUT of their habitat. Cemex should not be awarded more acres of limestone because they drove out the endangered species. History tells of the old west USA when cattlemen drove out sod busters to have more open range.

Another matter is the damage that Cemex has caused to houses in the area. If the quarry is expanded, homes will be affected. Look at Google maps and see how much closer to our homes Cemex would like to blast and quarry limestone. By invading the habitat of the endangered golden-cheeked warbler, Cemex wants to invade our habitat.

The federal law was written to protect the birds. ENFORCE IT!

*Larry Mauldin*

May 19, 2015

452 Robin Lane

New Braunfels, Tx 78132

Attention: Adam Zerrenner

Reference: Cemex dHCP

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This letter is in regard to an article in the Herald Zeitung paper (May 14th) concerning the fact that Cemex is seeking a take permit to quarry 199 wooded acres off Loop 337. This tract borders the land between Stone Crossing subdivision off 337, the Hunter's Creek Subdivision off Hwy 46 and the Shadow Hills subdivision off FM 1863. I live in Oak View subdivision which borders Shadow Hills.

Cemex has been a nuisance in this area for years. We experience almost daily explosions that rattle our walls and windows. After many protests we have been told that the company is within legal limits for their explosions. Now they want to destroy more beautiful woodland in this area and also destroy the habitat of the endangered species (golden cheeked warbler). I want to protest this and express my concern for our local environment. If you go on to google earth and take a look you will see that the area where the quarry is taking limestone looks like a moonscape. I really hate to see this creeping up behind the homes in the three subdivisions mentioned in the article.

There are many concerned citizens in this area.

Could you send me a copy of the Take Permit?

Thank you, *Diane Pepin*

Diane Pepin 830 608 9901 [cdpepin@hotmail.com](mailto:cdpepin@hotmail.com)

6/17/2015

DEPARTMENT OF THE INTERIOR Mail - Please don't allow Cemex to gain that land



**AUES Consult, FW2 <fw2\_aues\_consult@fws.gov>**

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**Please don't allow Cemex to gain that land**

1 message

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**Jesse Peralez <jperalez\_2000@yahoo.com>**

**Wed, May 20, 2015 at 8:47 PM**

To: "FW2\_AUES\_Consult@fws.gov" <FW2\_AUES\_Consult@fws.gov>

Our health and our area will deteriorate. Home values will come down. Our kids with allergies will worsen. Think of it this way.....if you lived in Stone Crossing.....would you want Cemex to have more land to cause more environmental damage and potentially cause harm to our health? Please don't allow this.

Sent from my iPhone  
Please excuse any errors

7/15/2015

DEPARTMENT OF THE INTERIOR Mail - Cemex dHCP



AUES Consult, FW2 <fw2\_aues\_consult@fws.gov>

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**Cemex dHCP**

1 message

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**John Schluter** <jschluter\_1@att.net>  
Reply-To: John Schluter <jschluter\_1@att.net>  
To: "FW2\_AUES\_Consult@fws.gov" <FW2\_AUES\_Consult@fws.gov >

Sun, Jul 12, 2015 at 6:35 PM

Attention: Mr. Andrew Zerrenner  
re: Cemex dHCP

Dear Mr. Zerrenner,

I am writing you concerning issuance of a permit to take the Golden Cheek Warbler habitat located near New Braunfels, in Comal County.

Quarry operations in this 199 wooded acres would devastate the habitat of this endangered bird and all other wildlife that make homes on this tract of land. If Cemex expands into this area the land would never be useful for anything in the future. Cemex appears to have no regard for property, wildlife, or any adjacent neighbors as well. The company strips and blasts the land rendering it of no use ever. Once a permit is issued to allow devastation of this tract of land, it can never be reclaimed for any ecological purposes.

If only a few Warblers nest in this area they would certainly be displaced and possibly lost forever. Being an endangered species can the loss of even one of these little birds be acceptable? Cemex is offering to throw some money to provide habitats elsewhere, this will not save the birds nesting in the tract in question. Cemex could find limestone somewhere that is not an endangered species habitat.

I strongly request that you do not approve approve a permit that would result in complete devastation of more land in Comal County.

Thank you for your consideration.

John Schluter  
861 Forest Trail  
New Braunfels, Texas 78132  
830-214-4053

6/17/2015

DEPARTMENT OF THE INTERIOR Mail - Cemex dHCP



**AUES Consult, FW2 <fw2\_aues\_consult@fws.gov>**

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**Cemex dHCP**

1 message

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**Helgard Suhr-Hollis** <helgard@satx.r.com>  
To: FW2\_AUES\_Consult@fws.gov

Thu, May 14, 2015 at 3:51 PM

Hello, I am reading the article in the New Braunfels Herald-Zeitung about the Cemex company. They are asking the City Council for a permit to expand their business close to several subdivisions. They will tear down many trees, endanger the lives of the golden-cheeked warbler and will pollute the air. The new quarry will add noise pollution and everybody who lives close by will be affected. I hope your office will not allow that the quarry will be build.  
Thank you for your attention.

Helgard Suhr-Hollis  
244 Arendes Dr.  
New Braunfels, TX 78132

May 14, 2015

The U.S. Fish and Wildlife Service

Dear Mr. Adam Zerrenner,



I have recently heard about Cemex, 2580 Wald Road, New Braunfels, requesting an incidental take permit to acquire 199 acres in New Braunfels to expand their operations. I oppose this since the golden-cheeked warbler is threatened by habitat loss. The golden-cheeked warbler was placed on the endangered species list in 1990.

According to our local newspaper, Herald-Zeitung, the permit application includes a draft Habitat Conservation Plan. Cemex would purchase conservation credits in Bandera or Burnet County for the permit being approved. Cemex has destroyed the Balcones acres it now occupies. The dust, the truck traffic, the destruction of our beautiful hills and the blasting has the wildlife in this area with no place to go. Please help our citizens of New Braunfels vote down this application. Please vote no on Cemex dHCP.

Sincerely,

*Diana Sullivan*

Diana Sullivan

51 Hunters Point Drive

New Braunfels, Texas 78132

6/17/2015

DEPARTMENT OF THE INTERIOR Mail - My input



**AUES Consult, FW2 <fw2\_aues\_consult@fws.gov>**

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## **My input**

1 message

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**Tanya Ulsh** <tanyaulsh@gmail.com>

Mon, May 25, 2015 at 4:27 PM

To: "FW2\_AUES\_Consult@fws.gov" <FW2\_AUES\_Consult@fws.gov>

i am totally against The Cemex plant request to expand their operations 200 acres into the golden cheek warbler area of our county.

Tanya Ulsh

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[tanyaspianostudio.com](http://tanyaspianostudio.com)